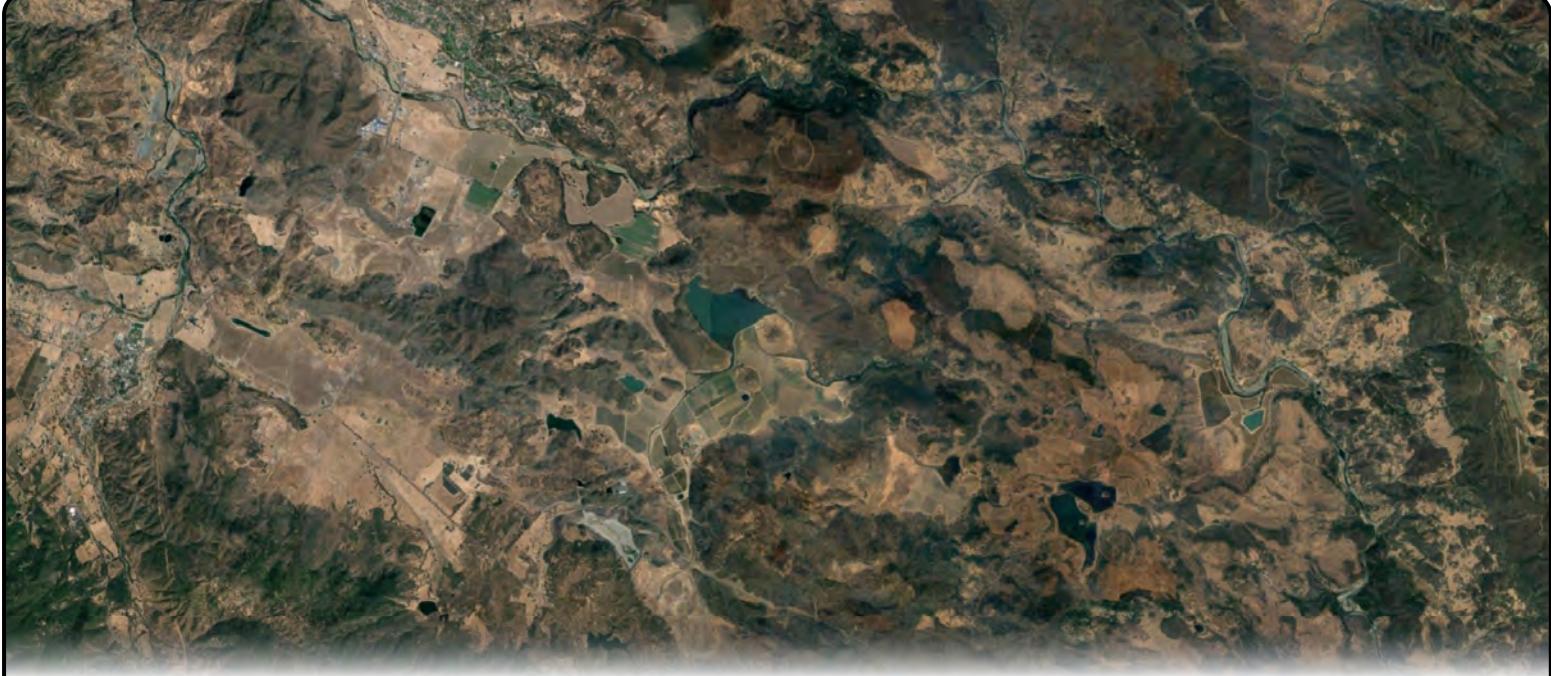


APPENDIX TIA

TRAFFIC IMPACT ANALYSIS



Transportation Impact Analysis

Maha Resort at Guenoc Valley

Lake County

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Abrams Associates
TRAFFIC ENGINEERING, INC.

February 7, 2020

Maha Resort at Guenoc Valley

Lake County

TRANSPORTATION IMPACT ANALYSIS

1) INTRODUCTION

This traffic impact study describes the existing and future conditions for transportation with and without the proposed project. The Guenoc Valley Mixed-Use Planned Development Project (Proposed Project) consists of the development of a master planned mixed-use resort and residential community within the 16,000-acre Guenoc Valley Ranch property in southeast Lake County. The project also includes off-site workforce co-housing located in central Middletown and associated infrastructure. This study also describes the regulatory setting; the criterion used for determining the significance of environmental impacts; and summarizes potential environmental impacts and appropriate mitigation measures. This study has been conducted in accordance with the requirements and methodologies set forth by Lake County, Napa County, Caltrans, and the applicable provisions of CEQA.

Summary of Required Mitigations and Recommended Improvement Measures - The following is a summary of the proposed mitigation measures to address the transportation impacts of the project. Based on a detailed analysis of traffic operations with and without each of the proposed mitigations, implementation of the following mitigation measures would reduce the project impacts to a *less-than-significant* level. The impacts at Intersections #20 and #21 in Napa County involve mitigations that cannot be guaranteed as the improvements would be outside the jurisdiction of Lake County. Therefore, the impacts at these two intersections (which occur under future phases only) would be considered *significant and unavoidable*.

Impact #1 Impacts to intersection operations - The project would contribute to LOS operations exceeding established standards at the following intersections:

- State Route 29 at Spruce Grove Road South (Intersection #3)**
- State Route 29 at Hidden Valley Road (Intersection #4)**
- State Route 29 at Hartmann Road (Intersection #5)**
- State Route 29 at Butts Canyon Road (Intersection #7)**
- State Route 29 at Tubbs Lane (Intersection #20) – Napa County**
- State Route 128 at Tubbs Lane (Intersection #21) – Napa County**

The addition of traffic from the proposed project would contribute to these six intersections exceeding the established LOS standards. However, without

implementation of the recommended mitigations below, the development of the proposed project would result in a potentially significant impact to the LOS and queuing at the above listed intersections. With the exception of Intersections #20 and #21 the following mitigation measures would reduce the impacts at these intersections to a less-than-significant level in all of the plus project scenarios.

Mitigation Measures

Prior to construction the project would mitigate the above-identified impacts by paying a proportionate share of the construction costs of the following improvement, subject to County approval. The intersection mitigations required for the project to meet the established LOS standards are:

- MM 1 (a) State Route 29 at Spruce Grove Road South – Installation of a three-way traffic signal with crosswalks.
(Scenario 6 - Cumulative Plus Phase 1)
- MM 1 (b) State Route 29 at Hidden Valley Road – Installation of a four-way traffic signal with crosswalks.
(Scenario 6 - Cumulative Plus Phase 1)
- MM 1 (c) State Route 29 at Hartmann Road – Expansion of the existing roundabout or installation of a three-way traffic signal.
(Scenario 6 - Cumulative Plus Phase 1)
- MM 1 (d) State Route 29 at Butts Canyon Road – Installation of a three-way traffic signal with crosswalks.
(Scenario 2 - Existing Plus Phase 1)
- MM 1 (e) State Route 29 at Tubbs Lane – Installation of a three-way traffic signal with crosswalks.
(Scenario 7 - Cumulative Plus Future Phases)
- MM 1 (f) State Route 128 at Tubbs Lane – Installation of a three-way traffic signal with crosswalks.
(Scenario 7 - Cumulative Plus Future Phases)

2) PROJECT DESCRIPTION

As noted above, the Guenoc Valley Mixed-Use Planned Development Project consists of the development of a master planned mixed-use resort and residential community within the 16,000-acre Guenoc Valley Ranch property. **Figure 1** shows the project location and the surrounding roadway network. **Figure 2** shows the proposed site plan for Phase 1. The project also includes the development of 50 off-site workforce housing units located in central Middletown and associated infrastructure. Project components would be developed over

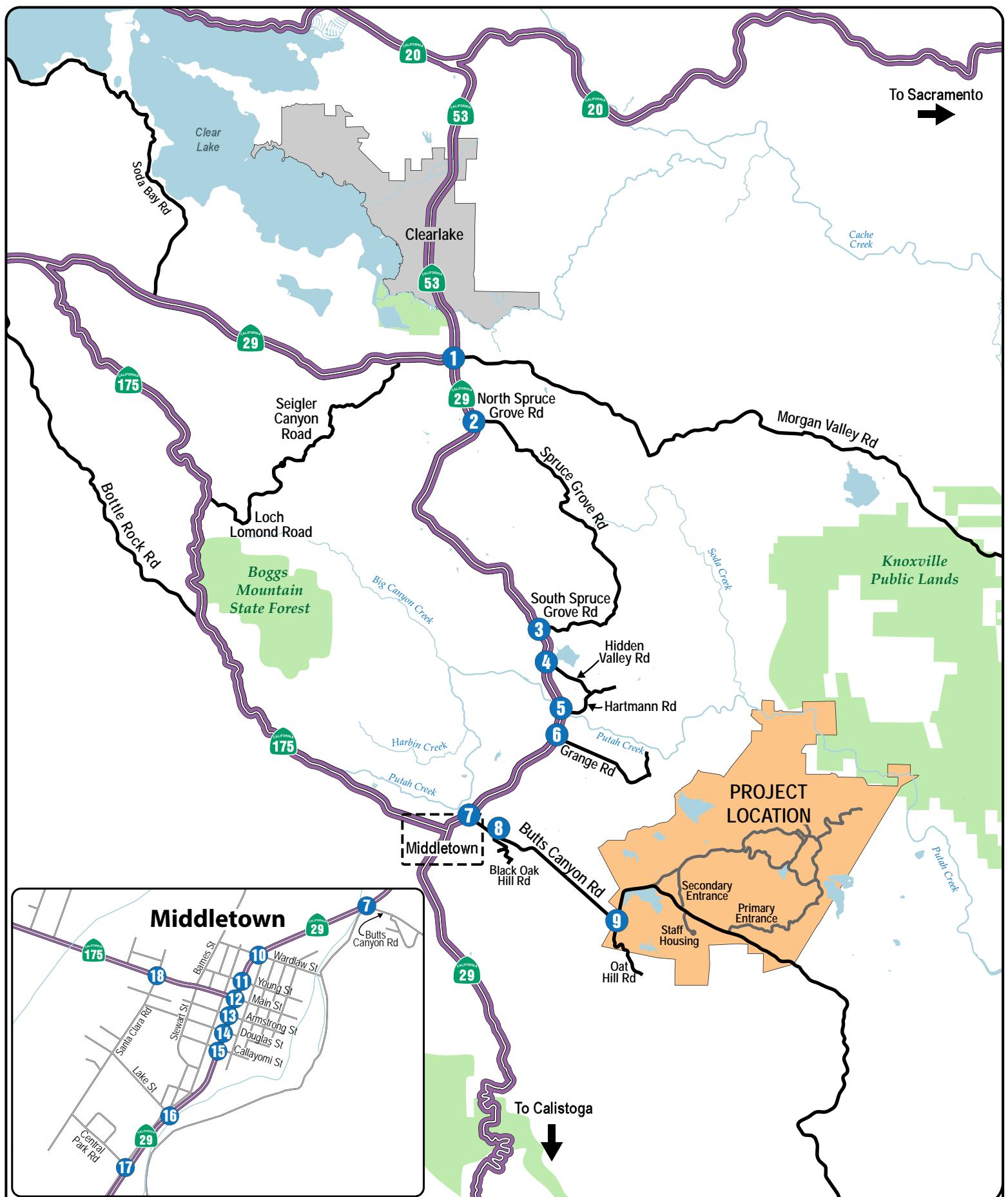


FIGURE 1 | PROJECT LOCATION & STUDY INTERSECTIONS

TRANSPORTATION IMPACT ANALYSIS

Maha Resort at Guenoc Valley

Lake County



Abrams Associates

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**FIGURE 2 | SITE PLAN
TRANSPORTATION IMPACT ANALYSIS**
Maha Resort at Guenoc Valley
Lake County

multiple phases. The first phase (Phase 1) will be constructed in the near-term (approximately the next ten years) and future phases will be built out based on market demands. Phase 1 includes the development of a private resort within the Guenoc Valley Ranch Property consisting of: i) six boutique hotels with a combined total of i) 343 resort hotel units; ii) 411 residential estate villas; iii) up to 35 on-site workforce co-housing units; iv) resort amenities, including but not limited to outdoor entertainment area, spa and wellness amenities, sports fields, equestrian areas, a new golf course, camping area and commercial and retail facilities; v) agricultural production and support facilities; vi) essential accessory facilities, including back of house facilities, fire station and emergency response center, float plane dock, helipads; and vii) supporting infrastructure. At full buildout (Phase 1 plus the addition of future phases that could be developed under the proposed zoning district), the Proposed Project could result in the development of up to 900 hotel and resort residential units, 1400 residential villas, 300 workforce housing units, resort amenities, and accessory uses within the Project Site. For simplicity, future phases of development will be referred to as “future phases” in this document.

3) EXISTING CONDITIONS

This section of the report describes the roadways, traffic conditions and other existing transportation characteristics in the vicinity of the project. The primary basis of the analysis is the peak hour level of service for the key intersections. The hours identified as the “peak” hours are generally between 7:30 a.m. and 8:30 a.m. and 4:30 p.m. and 5:30 p.m. for the transportation facilities described, based on the intersection turning movement counts collected for this analysis. Throughout this report, these peak hours will be identified as the AM and PM peak hours, respectively.

3.1 Project Study Intersections

Based on the project’s trip generation and the potential for traffic impacts a list of project study intersections was prepared in coordination with County staff. **Figure 1** shows the location of the project study intersections. Access to the site would be provided via two entrance roadways extending from Butts Canyon Road. The primary access to the Guenoc Valley Site for residents and guests would occur via a new roadway and intersection. There are two options for the primary access road. The Primary Access Road Option 1 entrance would be located approximately 2 miles south of the existing Langtry Winery Entrance. The Primary Access Road Option 2 would be located at McCain Canyon, about 2.6 miles south of the existing Langtry Winery Entrance. Secondary access would be provided through improvements to the existing intersection and roadway located a little less than a mile south of the Langtry Winery entrance. There are twenty-four additional off-site study intersections that were analyzed.

3.2 Traffic Analysis Scenarios

The study intersections were evaluated for the following seven scenarios:

- Scenario 1: *Existing Conditions* – Level of Service (LOS) based on existing peak hour volumes and existing intersection configurations.
- Scenario 2: *Existing Plus Phase 1* – Existing traffic volumes plus trips from Phase 1 of the proposed project.
- Scenario 3: *Baseline (No Project) Conditions* – The Baseline scenario is based on the existing volumes plus growth in background traffic (for three years) plus the traffic from all reasonably foreseeable developments that could substantially affect the volumes at the project study intersections.
- Scenario 4: *Baseline Plus Phase 1 Conditions* – This scenario is based on the Baseline volumes plus the trips from Phase 1 of the proposed project.
- Scenario 5: *Cumulative Conditions* – This scenario includes year 2040 cumulative volumes based on planned and approved projects, the Lake County Traffic Model, and the Napa-Solano Travel Demand Model.
- Scenario 6: *Cumulative Plus Phase 1 Conditions* – This scenario includes year 2040 cumulative volumes based on the Countywide Travel Demand Model plus the trips from Phase 1 of the proposed project.
- Scenario 7: *Cumulative Plus Future Phases* – This scenario includes year 2040 cumulative volumes based on the Countywide Travel Demand Model plus the trips from Phase 1 and planned future phases of the proposed project.

3.3 Existing Roadway Network

As discussed previously, the project location and the surrounding roadway network are illustrated in **Figure 1**. The following is a more detailed description of some of the main roadways in the area that could be affected by the project:

- **State Route 29 (SR 29)**– State Route (SR) 29 is long north-south highway between Vallejo in the south and Upper Lake in the north. Within Lake County it extends north through the community of Middletown, to the community of Lower Lake, then proceeds north-west through the community of Kelseyville and the County of Lakeport, terminating at the junction of Route 20 in the community of Upper Lake.
- **State Route 175 (SR 175)**– State Route (SR) is an east-west two-lane highway that extends west from SR 29 in Middletown. It continues west to terminate at U.S. 101 in Hopland.
- **Butts Canyon Road** – Butts Canyon Road is an east-west roadway that is designated by the Lake County General Plan as a major collector road. It extends east from SR 29 and eventually becomes Pope Valley Road in Napa County. Within the study area,

Butts Canyon Road has two travel lanes and a speed limit of 55 mph.

- **Spruce Grove Road** – Spruce Grove Road is designated by the Lake County General Plan as a major local road. It extends east from SR 29 on the north and eventually reconnects with SR 29 on the near the Hidden Valley Lake Community. Spruce Grove has two travel lanes and a speed limit of 35 mph.
- **Hidden Valley Road** – Hidden Valley Road is an east-west two-lane private roadway that serves the gated Hidden Valley Lake Community. It has two lanes and extends east from SR 29 on the north and terminates at Hartmann Road to the west.
- **Hartmann Road** – Hartmann Road is designated by the Lake County General Plan as a minor collector road. It extends east from SR 29 on the north and eventually reconnects with SR 29 on the near the Hidden Valley Lake Community. Hartmann Road has two travel lanes and a speed limit ranging from 30 to 35 mph.
- **Grange Road** - Grange Road is a two-lane east-west roadway that is designated by the Lake County General Plan as a local road. It extends east from SR 29 and terminates to the east near the project site.

3.4 Analysis Methodology

Existing operational conditions at the twenty-one (21) study intersections have been evaluated according to the requirements set forth by the Lake County General Plan. Analysis of traffic operations was conducted using the 6th Edition of the *Highway Capacity Manual (HCM)* Level of Service (LOS) methodology with Synchro software.¹ Level of service is an expression, in the form of a scale, of the relationship between the capacity of an intersection (or roadway segment) to accommodate the volume of traffic moving through it at any given time. The level of service scale describes traffic flow with six ratings ranging from A to F, with “A” indicating relatively free flow of traffic and “F” indicating stop-and-go traffic characterized by traffic jams. The traffic flow conditions that motorists experience rapidly deteriorate as the capacity of the intersection or roadway segment is reached. Under such conditions, there is general instability in the traffic flow, which means that relatively small incidents (e.g., momentary engine stall) can cause considerable fluctuations in speeds and delays that lead to traffic congestion. For signalized intersections, The HCM methodology determines the capacity of each lane group approaching the intersection. The LOS is then based on average control delay (in seconds per vehicle) for the various movements within the intersection. A combined weighted average control delay and LOS are presented for the intersection. A summary of the HCM results and copies of the detailed HCM LOS calculations are included in the appendix to this report. **Table 1** summarizes the relationship between LOS, average control delay, and the volume to capacity ratio at signalized intersections. **Table 2** summarizes the relationship between LOS and average control delay at unsignalized intersections.

¹ 6th Edition of *Highway Capacity Manual*, Transportation Research Board, Washington D.C., 2016

TABLE 1
SIGNALIZED INTERSECTION LEVEL OF SERVICE DEFINITIONS

<u>Level of Service</u>	<u>Description of Operations</u>	<u>Average Delay (sec/veh)</u>	<u>Volume to Capacity Ratio</u>
A	Insignificant Delays: No approach phase is fully used and no vehicle waits longer than one red indication.	≤ 10	< 0.60
B	Minimal Delays: An occasional approach phase is fully used. Drivers begin to feel restricted.	> 10 to 20	> 0.61 to 0.70
C	Acceptable Delays: Major approach phase may become fully used. Most drivers feel somewhat restricted.	> 20 to 35	> 0.71 to 0.80
D	Tolerable Delays: Drivers may wait through no more than one red indication. Queues may develop but dissipate rapidly without excessive delays.	> 35 to 55	> 0.81 to 0.90
E	Significant Delays: Volumes approaching capacity. Vehicles may wait through several signal cycles and long vehicle queues from upstream.	> 55 to 80	> 0.91 to 1.00
F	Excessive Delays: Represents conditions at capacity, with extremely long delays. Queues may block upstream intersections.	> 80	> 1.00

SOURCES: 6th Edition of the *Highway Capacity Manual*, Transportation Research Board, 2016.

TABLE 2
UNSIGNALIZED INTERSECTION LEVEL OF SERVICE DEFINITIONS

<u>Level of Service</u>	<u>Description of Operations</u>	<u>Average Delay (seconds/vehicle)</u>
A	No delay for stop-controlled approaches.	0 to 10
B	Operations with minor delays.	> 10 to 15
C	Operations with moderate delays.	> 15 to 25
D	Operations with some delays.	> 25 to 35
E	Operations with high delays and long queues.	> 35 to 50
F	Operation with extreme congestion, with very high delays and long queues unacceptable to most drivers.	> 50

SOURCE: 6th Edition of the *Highway Capacity Manual*, Transportation Research Board, 2016.

For unsignalized intersections (all-way stop controlled and two-way stop controlled) the average control delay and LOS operating conditions are calculated by approach (e.g., northbound) and by movement (e.g., northbound left-turn) for those movements that are subject to delay. In general, the operating conditions for unsignalized intersections are presented for the worst approach.

3.5 Existing Intersection Capacity Conditions (Scenario 1)

The existing intersection geometry at each of the project study intersections can be seen in **Figure 3** and the existing traffic volumes at each are presented in **Figure 4**. Traffic counts at the study intersections were conducted in May of 2019 at times when local schools were in session and additional counts were also conducted in June and July of 2019 to capture summer conditions. **Table 3** summarizes the associated LOS computation results for the existing weekday AM and PM peak hour conditions. Please note that the corresponding LOS analysis calculation sheets and information regarding the peak hour factors and signal timings are presented in the appendix to this report.

As shown in **Table 3**, all of the project study intersections currently have acceptable conditions (LOS D or better) during the weekday AM and PM peak hours with the exception of Intersection #20 (State Route 29 at Tubbs Lane) and Intersection #21 (State Route 128 at Tubbs Lane) which would both exceed the LOS D threshold established in Napa County's General Plan. See Section 3.8 for a description of the applicable intersection thresholds.

3.6 Pedestrian and Bicycle Facilities

Bicycle and pedestrian facilities in the project study area are currently very limited with no bike lanes or sidewalks provided in the vicinity of the project. Bicycle paths, lanes and routes are typical examples of bicycle transportation facilities, which are defined by Caltrans as being in one of the three classes:

Class I – Provides a completely separated facility designed for the exclusive use of bicyclists and pedestrians with crossing points minimized.

Class II – Provides a restricted right-of-way designated lane for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and cross-flows by pedestrians and motorists permitted.

Class III – Provides a route designated by signs or permanent markings and shared with pedestrians and motorists.

Class II bicycle lanes have been striped in downtown Middletown on State Route 29 (Calistoga Street) from Young Street to 350 feet south of Callayomi Street. It should be noted that Butts Canyon Road is also planned to be a Class III bikeway in the Lake County Regional Bikeway Plan.

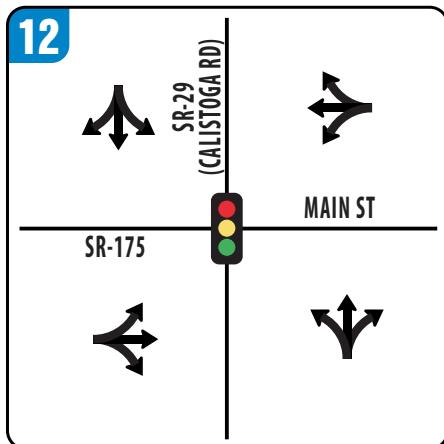
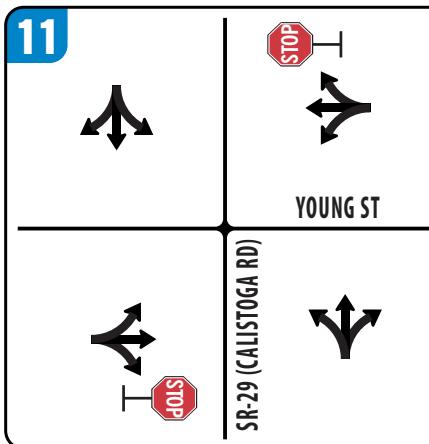
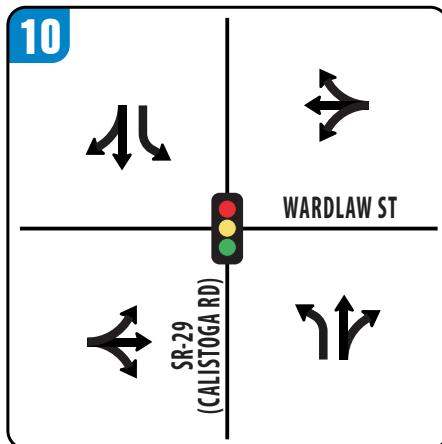
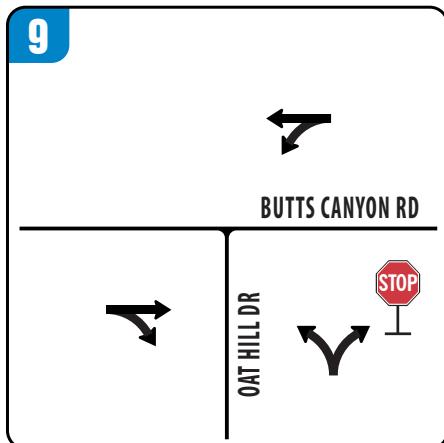
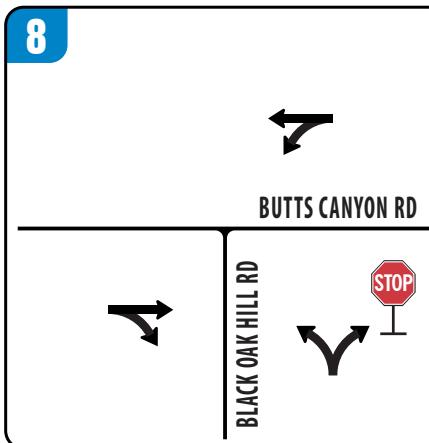
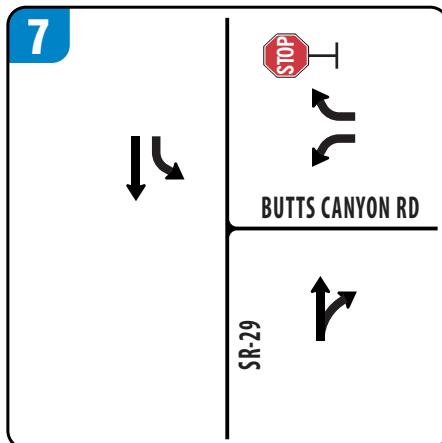
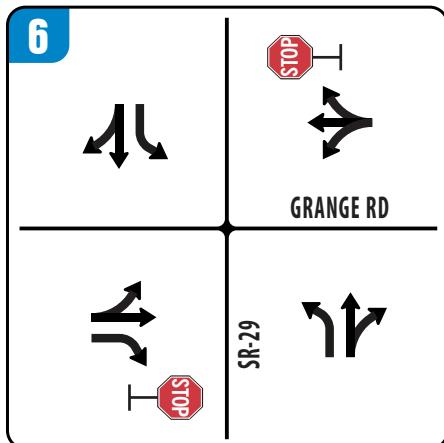
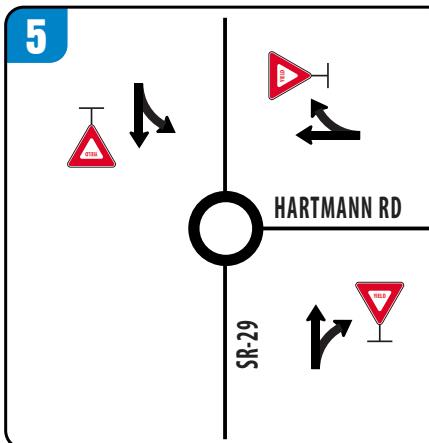
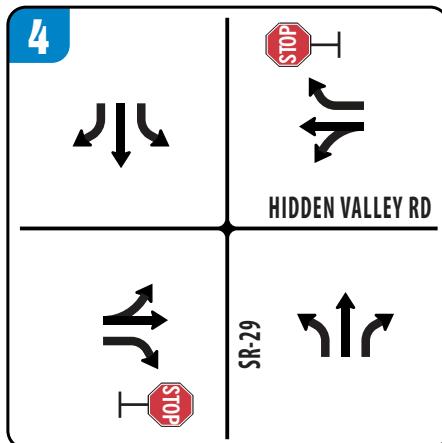
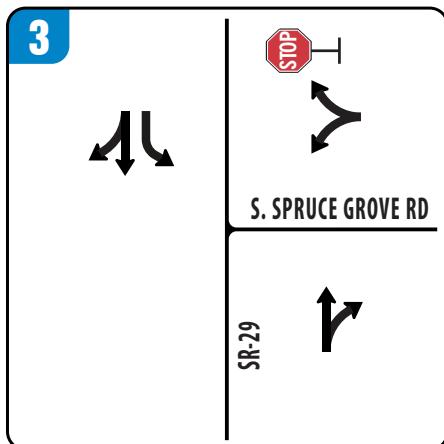
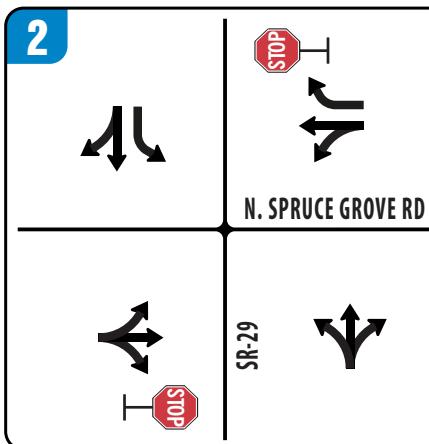
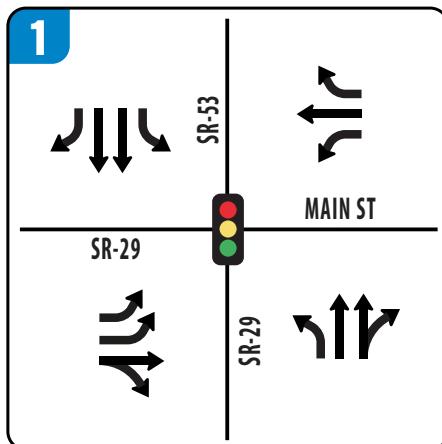


FIGURE 3 | EXISTING LANE CONFIGURATIONS – PAGE 1 OF 2
TRANSPORTATION IMPACT ANALYSIS

Maha Resort at Guenoc Valley
Lake County

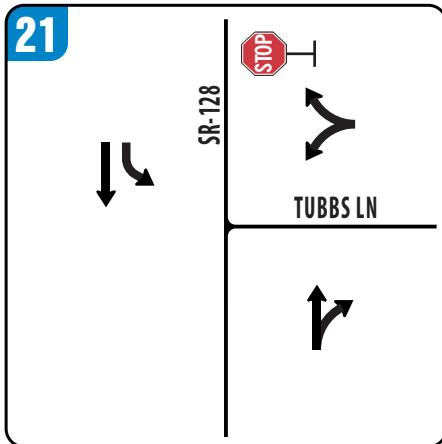
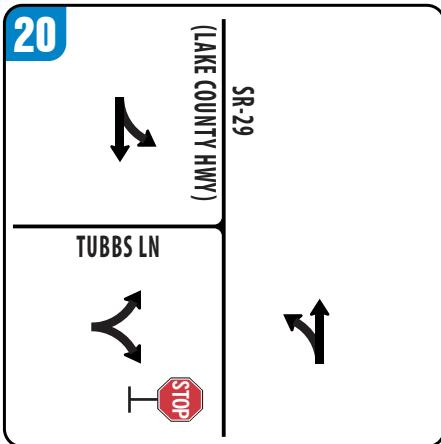
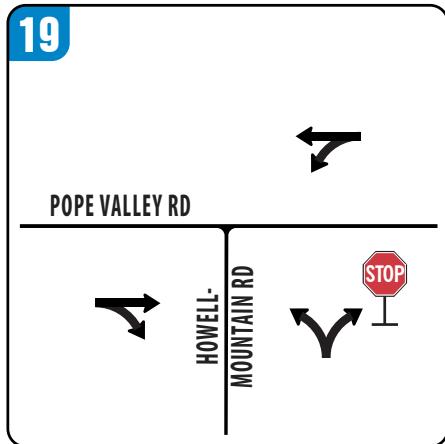
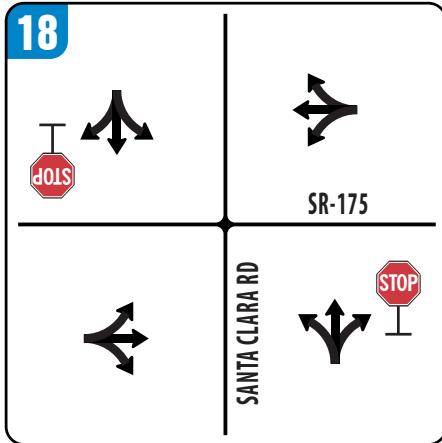
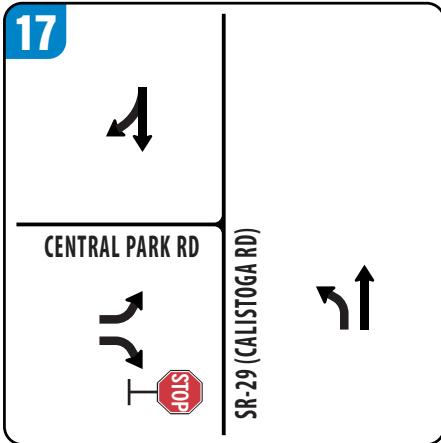
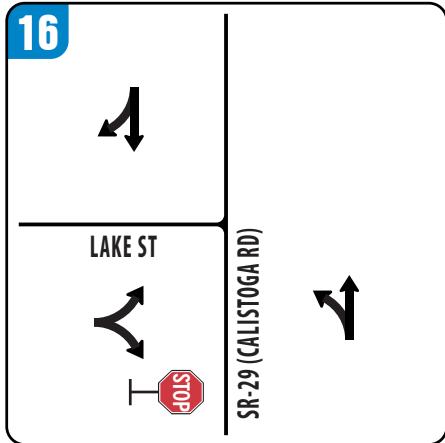
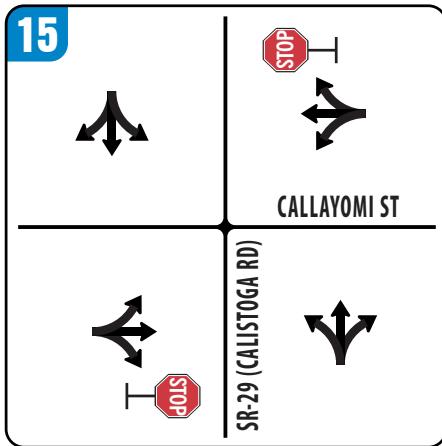
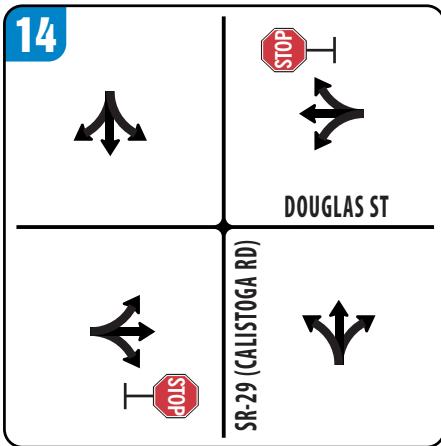
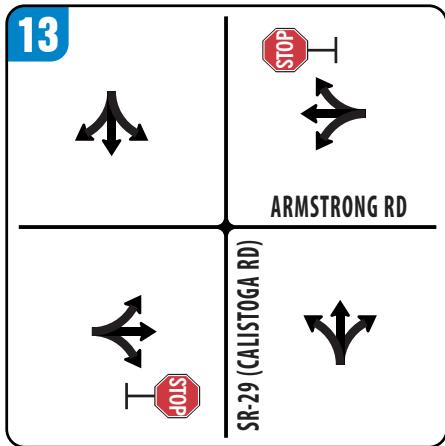


FIGURE 3 | EXISTING LANE CONFIGURATIONS – PAGE 2 OF 2
TRANSPORTATION IMPACT ANALYSIS

Maha Resort at Guenoc Valley
 Lake County

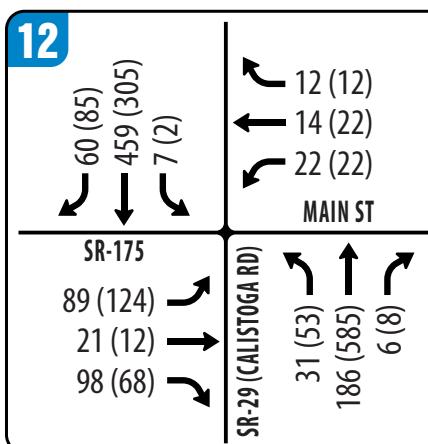
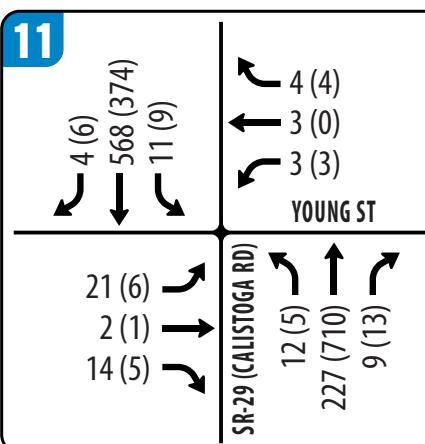
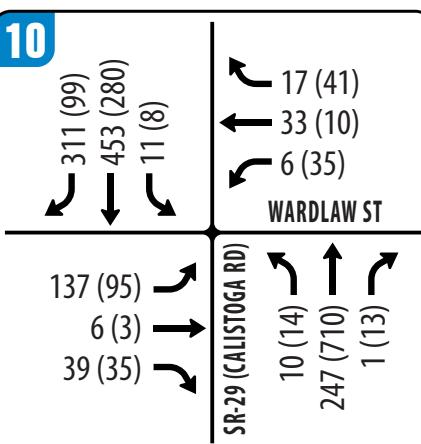
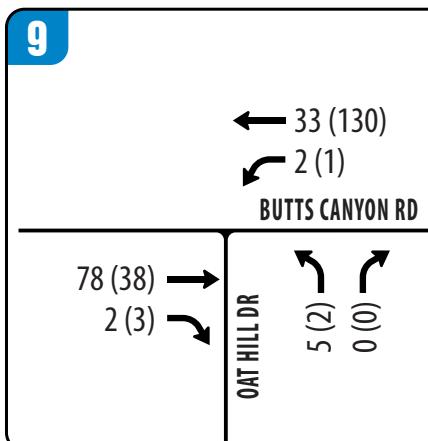
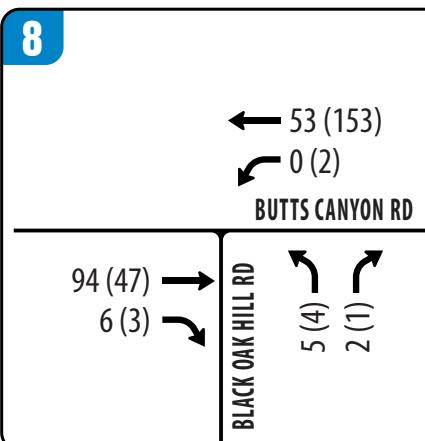
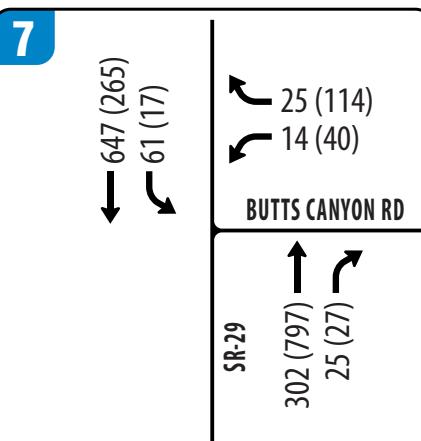
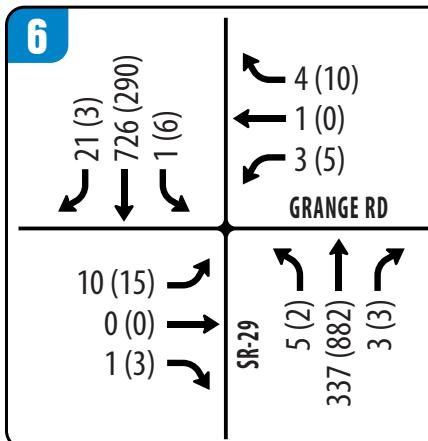
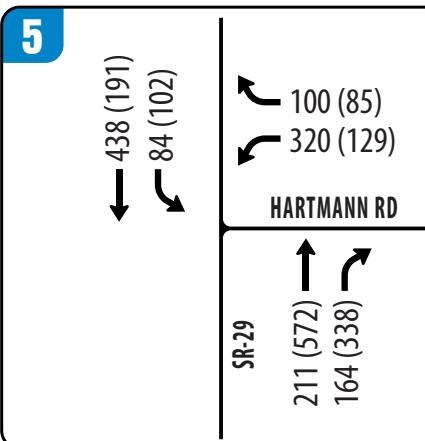
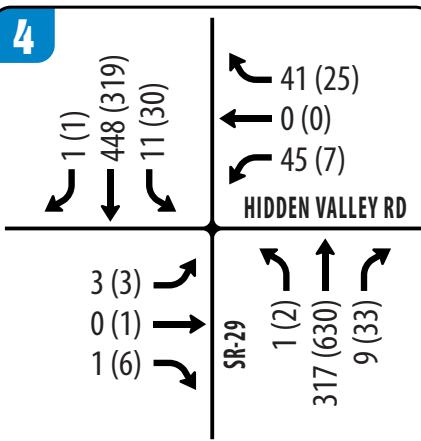
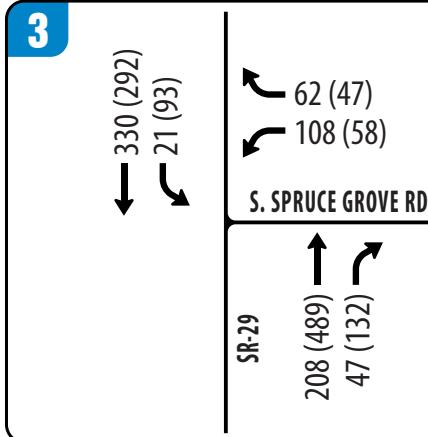
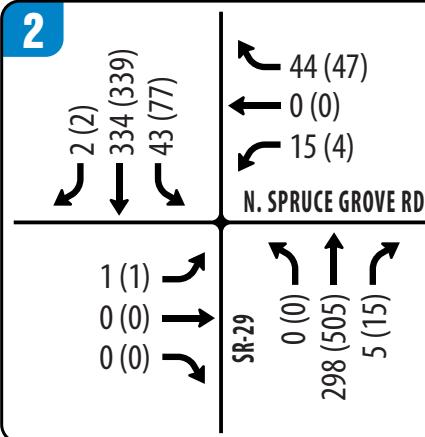
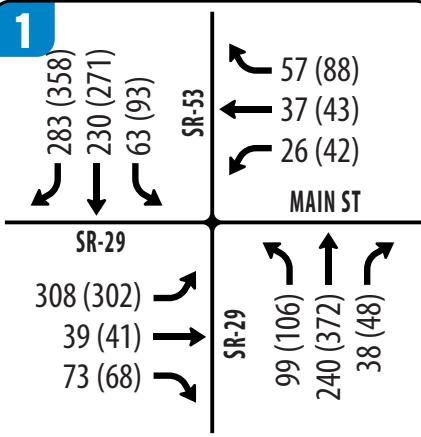


FIGURE 4 | EXISTING AM(PM) PEAK HOUR TRAFFIC VOLUMES – PAGE 1 OF 2
TRANSPORTATION IMPACT ANALYSIS

Maha Resort at Guenoc Valley
Lake County

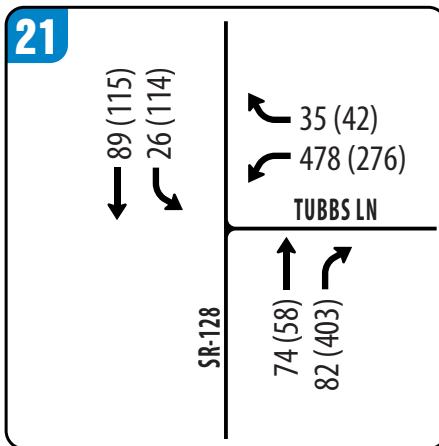
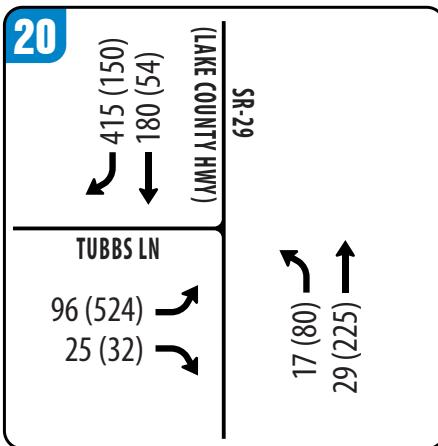
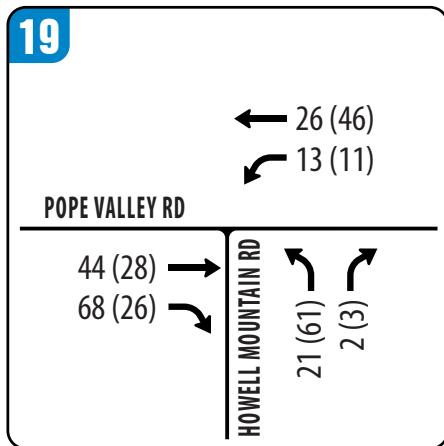
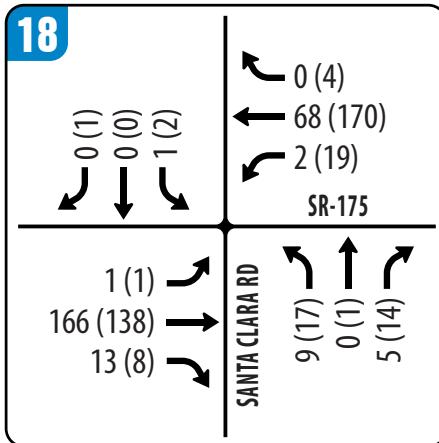
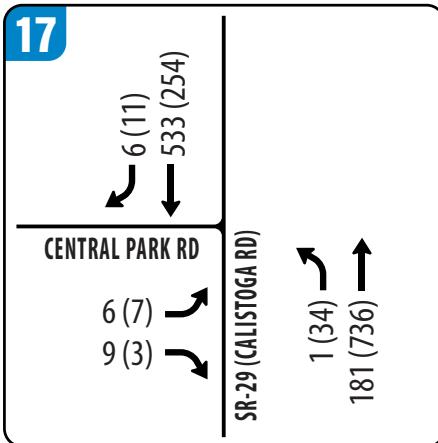
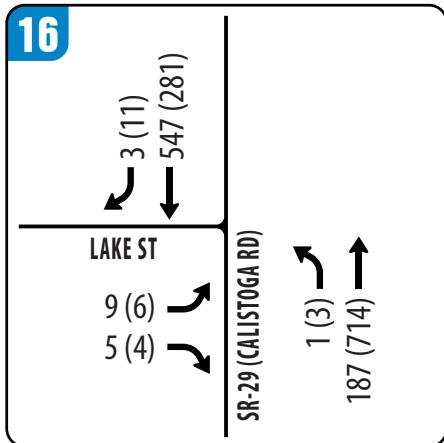
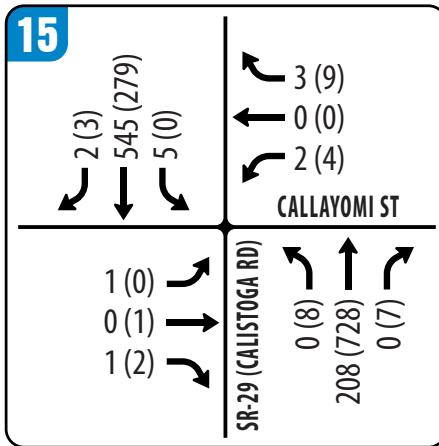
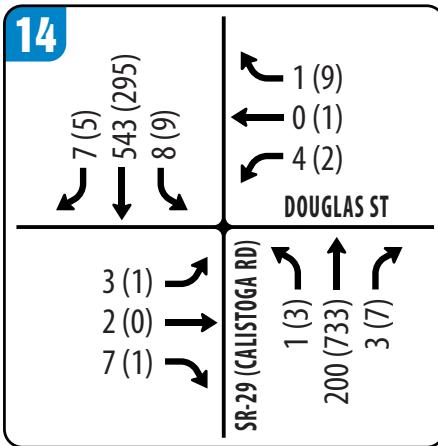
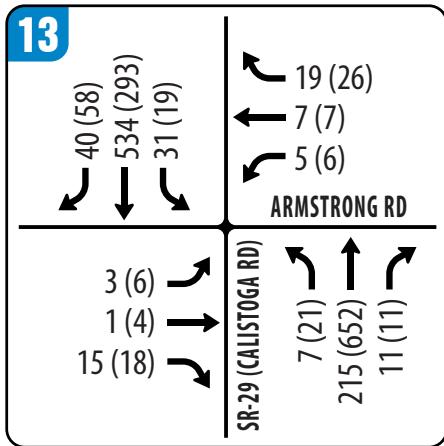


FIGURE 4 | EXISTING AM(PM) PEAK HOUR TRAFFIC VOLUMES – PAGE 2 OF 2
TRANSPORTATION IMPACT ANALYSIS

Maha Resort at Guenoc Valley
 Lake County

TABLE 3
EXISTING INTERSECTION LEVEL OF SERVICE CONDITIONS – PAGE 1 OF 2

INTERSECTION	CONTROL	PEAK HOUR	EXISTING	
			Delay	LOS
1 STATE ROUTE 29 / STATE ROUTE 53 & MAIN STREET	Signalized	AM	17.6	B
		PM	19.0	B
2 STATE ROUTE 29 & SPRUCE GROVE ROAD (NORTH) <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	1.5 18.3	A C
		PM	1.4 28.2	A D
		AM	3.8 16.1	A C
3 STATE ROUTE 29 & SPRUCE GROVE ROAD (SOUTH) <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	PM	3.4 27.1	A D
		AM	1.8 17.7	A C
		PM	0.9 16.8	A C
5 STATE ROUTE 29 & HARTMANN ROAD	Roundabout	AM	9.2	A
		PM	14.7	B
6 STATE ROUTE 29 & GRANGE ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.4 27.4	A D
		PM	0.8 31.8	A D
		AM	1.0 15.4	A C
7 STATE ROUTE 29 & BUTTS CANYON ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	PM	2.9 22.9	A C
		AM	0.4 9.2	A A
		PM	0.3 9.5	A A
9 BUTTS CANYON ROAD & OAT HILL DRIVE <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.5 9.2	A A
		PM	0.2 9.5	A A
		AM	8.7	A
10 STATE ROUTE 29 (CALISTOGA ROAD) & WARDLAW STREET	Signalized	PM	6.6	A
		AM	1.2 18.8	A C
11 STATE ROUTE 29 (CALISTOGA ROAD) & YOUNG STREET <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	PM	0.5 22.0	A C
		AM	7.1	A
		PM	7.6	A
13 STATE ROUTE 29 (CALISTOGA ROAD) & ARMSTRONG ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	1.2 14.5	A B
		PM	1.4 20.1	A C
		AM	0.4 16.4	A C
14 STATE ROUTE 29 (CALISTOGA ROAD) & DOUGLAS STREET <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	PM	0.3 18.5	A C
		AM	0.2 14.9	A B
		PM	0.3 18.2	A C
15 STATE ROUTE 29 (CALISTOGA ROAD) & CALLAYOMI STREET <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.2 14.9	A B
		PM	0.3 18.2	A C

SOURCE: Abrams Associates, 2019

NOTE: Delay results are presented in terms of seconds per vehicle.

TABLE 3
EXISTING INTERSECTION LEVEL OF SERVICE CONDITIONS – PAGE 2 OF 2

	INTERSECTION	CONTROL	PEAK HOUR	EXISTING	
				Delay	LOS
16	STATE ROUTE 29 (CALISTOGA ROAD) & LAKE STREET <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.3 14.5	A B
			PM	0.2 16.5	A C
17	STATE ROUTE 29 (CALISTOGA ROAD) & CENTRAL PARK ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.3 13.4	A B
			PM	0.4 18.8	A C
18	STATE ROUTE 175 & SANTA CLARA ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.6 10.3	A B
			PM	1.4 10.8	A B
19	POPE VALLEY ROAD & HOWELL MOUNTAIN ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	1.8 9.3	A A
			PM	3.9 9.5	A A
20	STATE ROUTE 29 & TUBBS LANE <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	2.4 13.7	A B
			PM	> 50.0 > 50.0	F F
21	STATE ROUTE 128 & TUBBS LANE <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	17.3 26.0	C D
			PM	15.8 46.9	B E

SOURCE: Abrams Associates, 2019

NOTE: Delay results are presented in terms of seconds per vehicle.

3.7 Transit Service

Bus transit service in the project area is provided by Lake Transit. Lake Transit operates local bus routes from Ukiah and Calistoga to Lake County and the Clear Lake area. The routes that run closest to the project site are Routes 2 and 3. Route 2 runs three buses per day from about 6:30 AM to 4:00 PM. It operates along Highway 175 from Kit's Corner to Middletown. Route 3 runs four buses per day from about 7:00 AM to 6:30 PM. It operates along State Route 29 from Clear Lake to the hospital on Deer Park Road in St. Helena. The nearest bus stop is located about six miles from the project site in Middletown.

3.8 Standards and Objectives

Existing policies, laws and regulations that apply to the proposed project are summarized below.

Caltrans - The California Department of Transportation (Caltrans) has jurisdiction over State highways. Therefore, Caltrans controls all construction, modification, and maintenance of State highways, such as SR 29. Any improvements to these roadways would require Caltrans' approval. The Guide for the Preparation of Traffic Impact Studies provides consistent guidance for Caltrans staff who review local development and land use change proposals. The Guide also

informs local agencies about the information needed for Caltrans to analyze the traffic impacts to state highway facilities.

Lake County General Plan - The Transportation and Circulation Element included in the Lake County General Plan was prepared pursuant to Section 65302(b) of the California Government Code. The Transportation and Circulation Element addresses the location and extent of existing and planned transportation routes, terminals, and other local public utilities and facilities. The General Plan identifies roadway and transit goals and policies that have been adopted to ensure that the transportation system of the County will have adequate capacity to serve planned growth. These goals and policies are intended to provide a plan and implementation measures for an integrated, multi-modal transportation system that will safely and efficiently meet the transportation needs of all economic and social segments of the County.

Significance Criteria - According to CEQA, a project would have a significant impact if it would:

- Conflict with an applicable program, plan, ordinance or policy establishing measures of effectiveness for the performance of addressing the circulation system, including transit, roadways, bicycle lanes and pedestrian facilities/paths?

The goal of the Lake County is to maintain a Level of Service (LOS) C during the peak hours, according to the General Plan. The County does not have plans, ordinances, or policies establishing measures of effectiveness for the performance of other parts of its circulation system. Please note includes intersections under the jurisdiction of Napa County and Caltrans. The applicable measures of effectiveness are summarized below:

Signalized Intersections - Project-related operational impacts on the signalized study intersections in the Lake County are considered significant if project-related traffic causes the Level of Service (LOS) rating to deteriorate from LOS C to LOS D, E or F. However, based on the Transportation Concept Report for State Route 29 (dated August 2013) the concept LOS for SR 29 between Calistoga and Lower Lake is LOS E. Project-related operational impacts on signalized study intersections in the Napa County are considered significant if project-related traffic causes the Level of Service (LOS) rating to deteriorate from LOS D to LOS E or F. In addition, in Napa County project impacts are also considered significant if a signalized intersection already operates at LOS E or F during one or more peak hours without project trips, and the addition of project trips increases the total entering volume by one percent or more.

Unsignalized Intersections - Project-related operational impacts on unsignalized intersections in Lake County are considered significant if project generated traffic causes the average of all movements to deteriorate from LOS C or better to LOS D, E or F. For unsignalized intersections where the overall LOS would already exceed County standards (LOS C) it was considered a significant impact if Caltrans peak hour traffic signal warrants would be met. Project-related operational impacts on the unsignalized intersections in Napa County are considered significant if project generated traffic causes the average of all movements to deteriorate from LOS D or better to LOS E or F.

In addition, in Napa County project impacts are also considered significant if an unsignalized intersection already operates at LOS E or F during one or more peak hours without project trips and the project contributes either one percent or more of the total entering traffic for all-way stop-controlled intersections or ten percent or more of the traffic on a side-street approach for side-street stop-controlled intersections.

- Would the project conflict with or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)? This section states that vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the area compared to existing conditions also have a less than significant transportation impact.
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections).
- Result in inadequate emergency vehicle access.

4) TRANSPORTATION IMPACT ANALYSIS

4.1 Project Trip Generation

With full buildout of the planned future phases, the Proposed Project could result in the development of up to 900 hotel rooms and resort residential units, 1400 residential villas, 300 workforce housing units, as well as resort amenities and other accessory uses within the project site. However, analysis of existing and baseline impacts is based on Phase 1 and the resulting trip generation calculations are shown in **Table 4**, using trip generation rates from the Institute of Transportation Engineer's (ITE) Trip Generation Manual, 10th Edition. The total trip generation reflects all vehicle trips that would be counted at the project driveways. Since the project has various retail, restaurants and resort amenities that would be geared towards guests, adjustments were applied to account internal trips. It was also assumed that 40% of patrons and employees would arrive via private auto due to the planned use of airport shuttles and other buses. Please note the ITE trip generation rates are based on surveys of hotels that had an average occupancy rate of 88%. Based on data from the analytics firm STR, in Napa County the average hotel occupancy rate in 2017 was 71%. For this analysis it was assumed there would be similar occupancy levels for the proposed project. Therefore, based on the forecast occupancy rates a 19% reduction was applied to the ITE trip generation results. To be conservative, the trip generation also includes traffic from the proposed on-site work force housing as well as potential traffic from the alternative off-site housing in Middletown. For the purposes of determining the worst-case impacts on the surrounding streets, the trips generated by this proposed development are estimated for the peak commute hours of 7:30 a.m. and 8:30 a.m. and 4:30 p.m. and 5:30 p.m., which represent the peak of "*adjacent street traffic*".

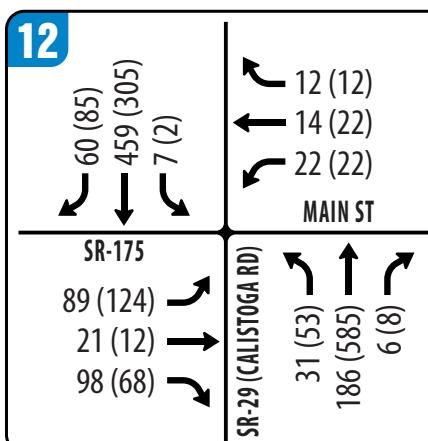
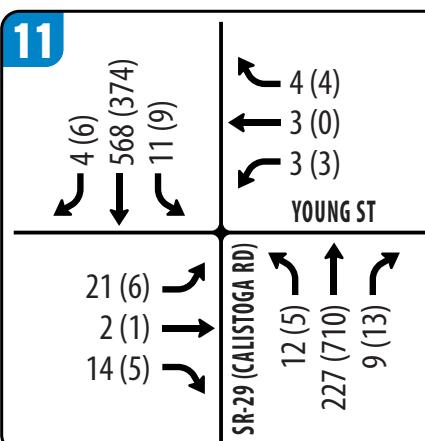
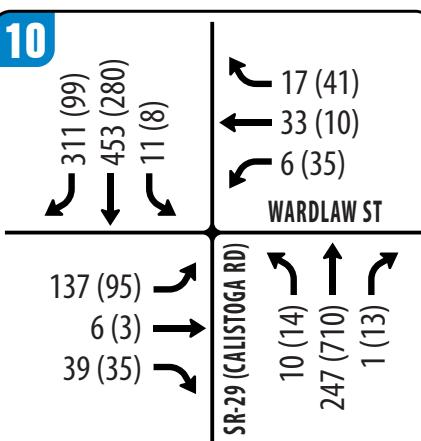
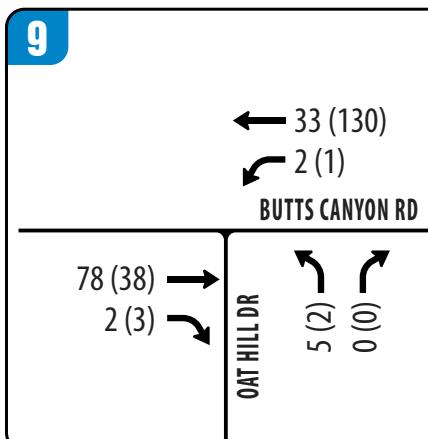
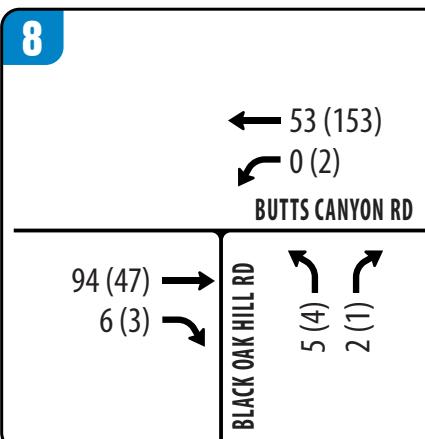
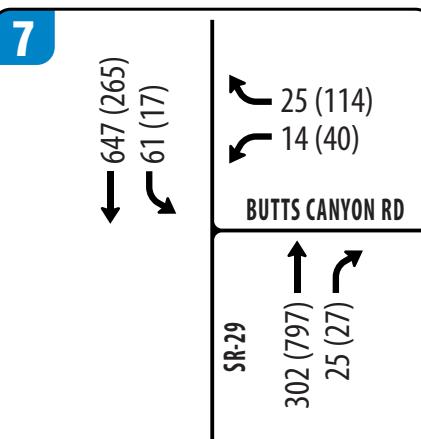
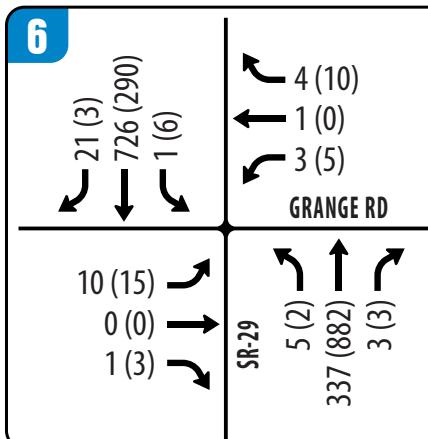
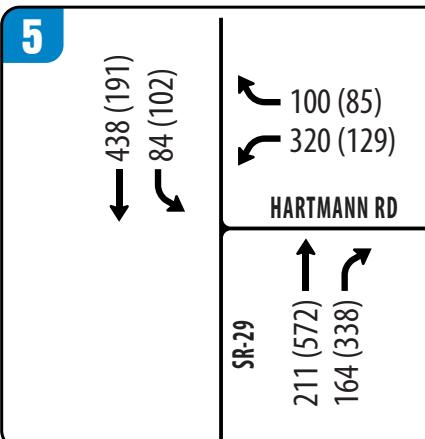
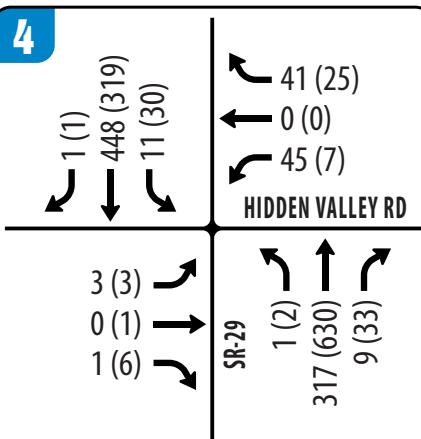
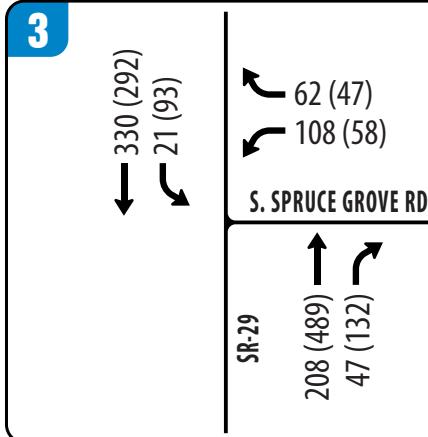
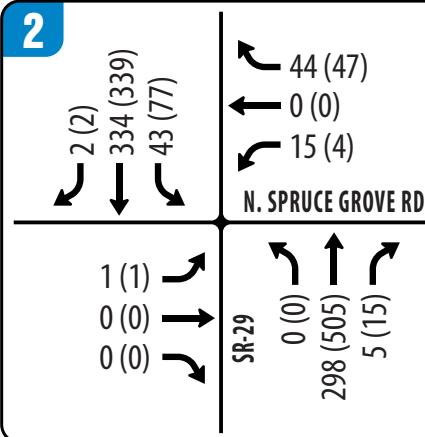
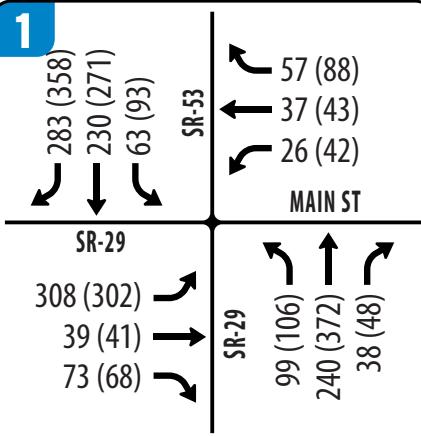


FIGURE 4 | EXISTING AM(PM) PEAK HOUR TRAFFIC VOLUMES – PAGE 1 OF 2
TRANSPORTATION IMPACT ANALYSIS

Maha Resort at Guenoc Valley
Lake County

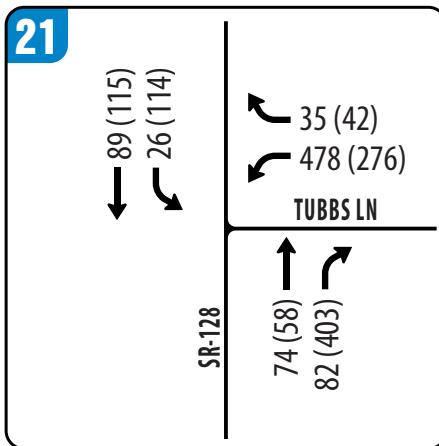
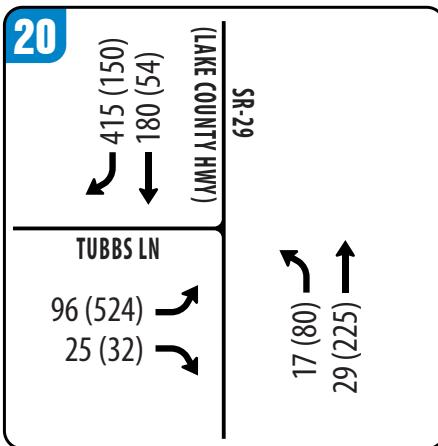
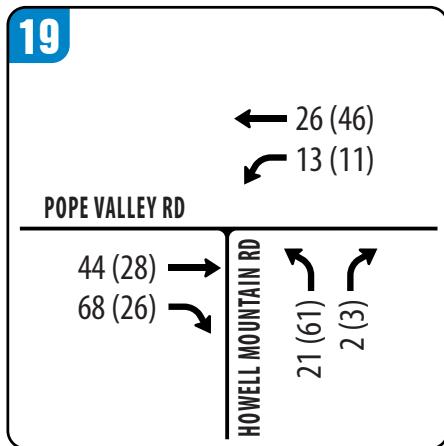
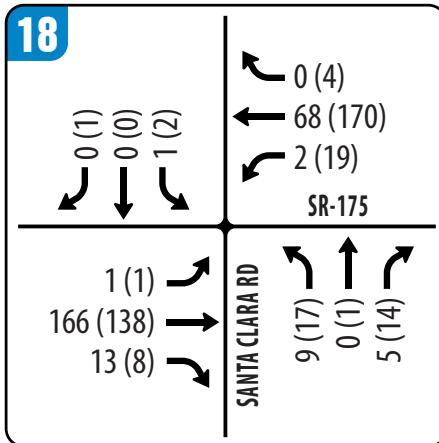
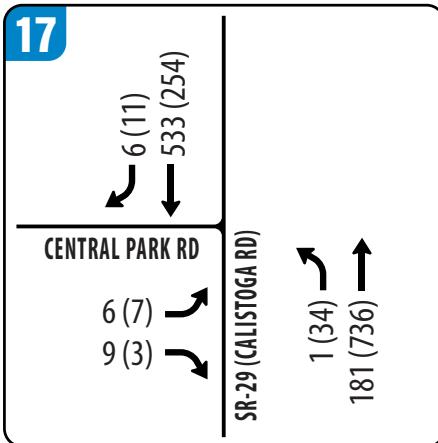
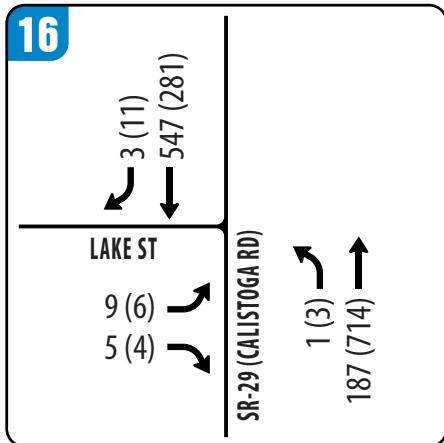
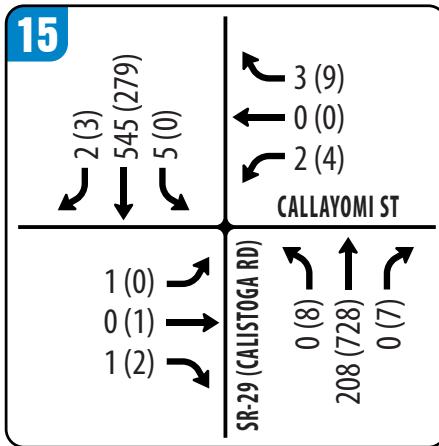
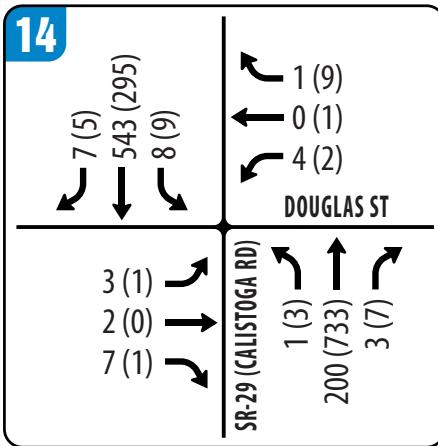
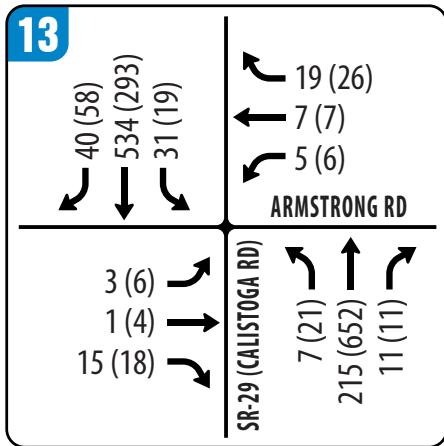


FIGURE 4 | EXISTING AM(PM) PEAK HOUR TRAFFIC VOLUMES – PAGE 2 OF 2
TRANSPORTATION IMPACT ANALYSIS

Maha Resort at Guenoc Valley
 Lake County

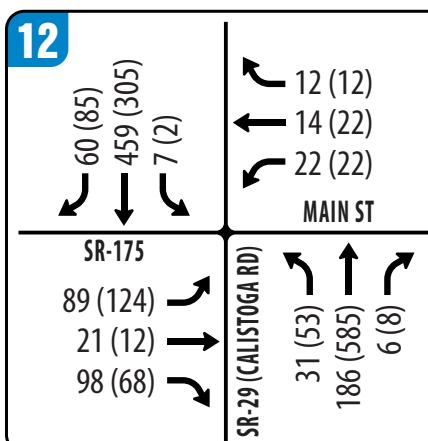
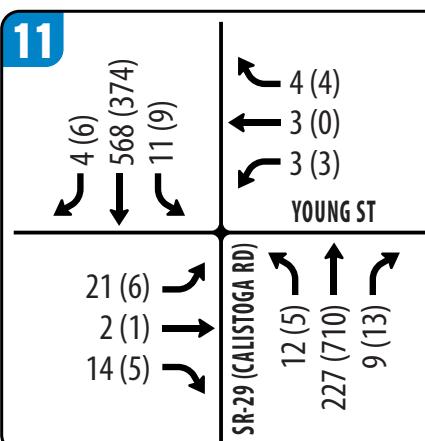
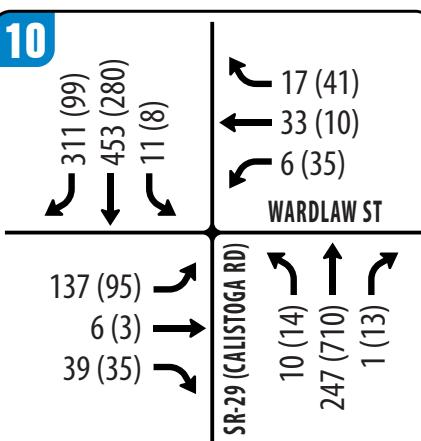
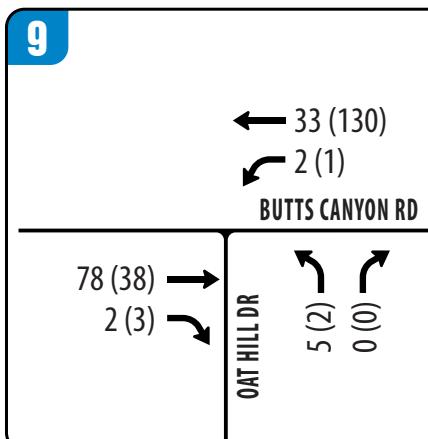
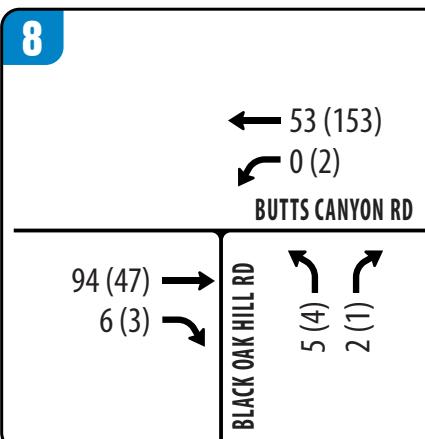
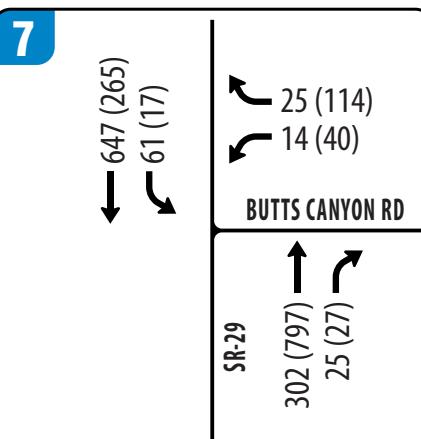
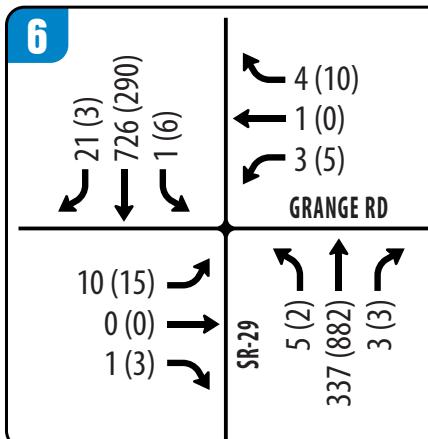
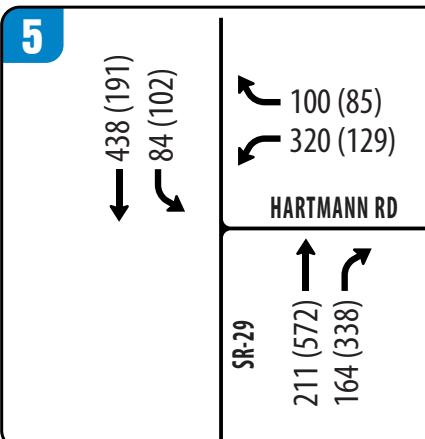
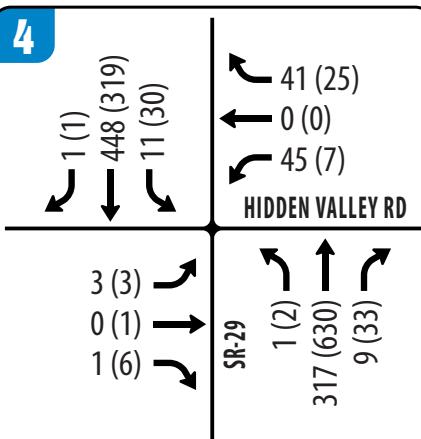
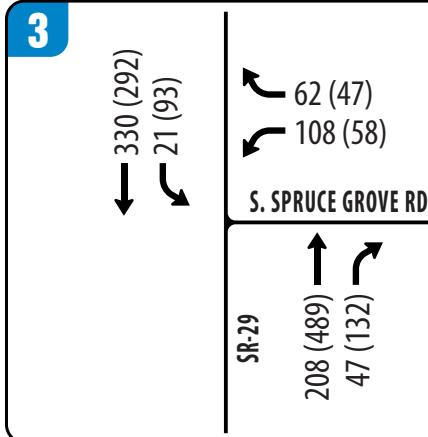
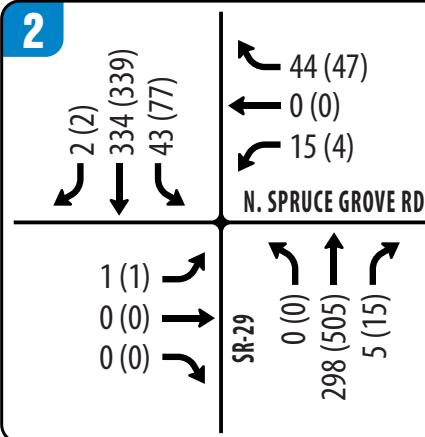
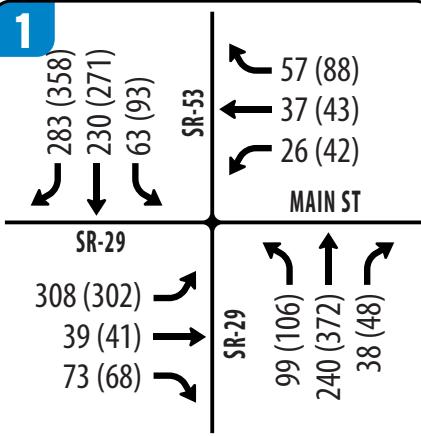


FIGURE 4 | EXISTING AM(PM) PEAK HOUR TRAFFIC VOLUMES – PAGE 1 OF 2
TRANSPORTATION IMPACT ANALYSIS

Maha Resort at Guenoc Valley
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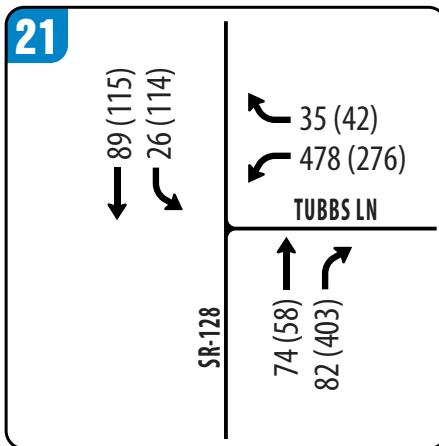
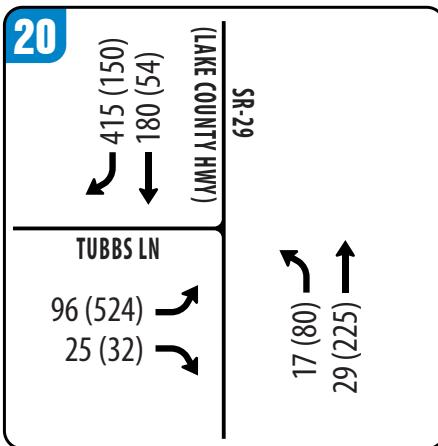
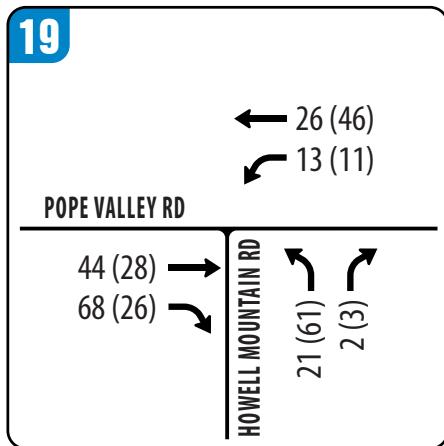
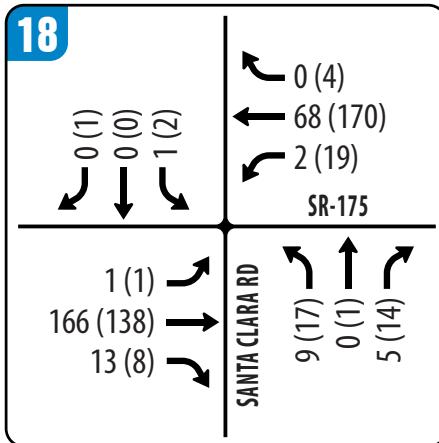
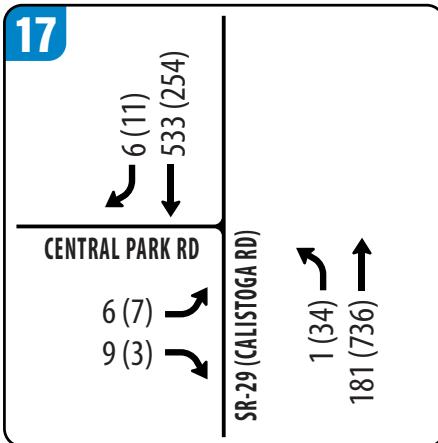
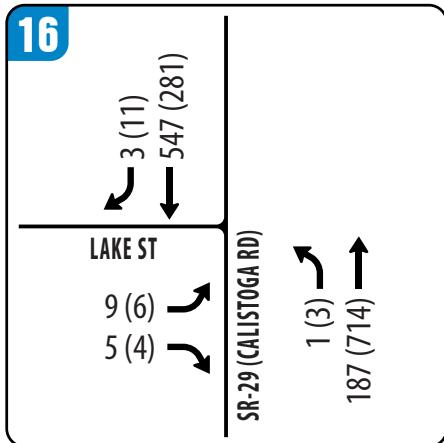
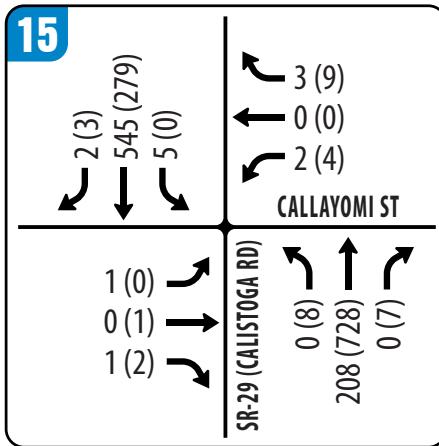
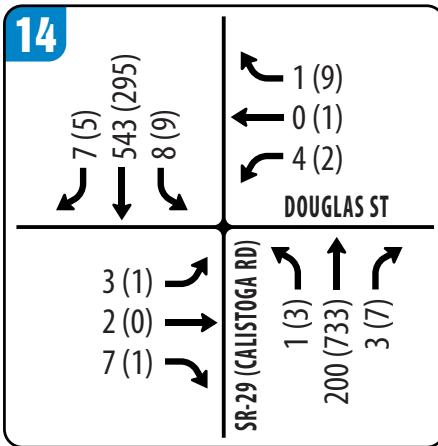
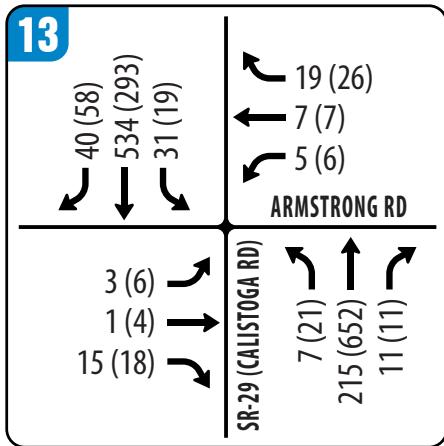


FIGURE 4 | EXISTING AM(PM) PEAK HOUR TRAFFIC VOLUMES – PAGE 2 OF 2
TRANSPORTATION IMPACT ANALYSIS

Maha Resort at Guenoc Valley
 Lake County

4.2 Project Trip Distribution

The trip distribution assumptions have been based on the project's proximity to the access routes into Lake County, the existing directional split at nearby intersections, and the overall land use patterns in the area. The trip distribution percentages assumed in this analysis are presented in **Figure 5**. **Figure 6** shows the project traffic that would be added at each of the study intersections.

4.3 Existing Plus Phase 1 Traffic Capacity Conditions (Scenario 2)

This scenario evaluates the existing conditions with the addition of traffic from the proposed project. The traffic volumes for each of the study intersections for the Existing Plus Project scenario are shown in **Figure 7**. The capacity calculations for the Existing Plus Project scenario are shown in **Table 5**. The corresponding LOS analysis calculation sheets are presented in the appendix to this report. As shown in **Table 5**, all of the project study intersections would continue to have acceptable conditions (LOS D or better) during the weekday AM and PM peak hours with the exception of Intersection #7 (State Route 29 at Butts Canyon Road), Intersection #20 (State Route 29 at Tubbs Lane), and Intersection #21 (State Route 128 at Tubbs Lane). Please note that by degrading the intersection to LOS F the project would have a significant impact at the intersection of State Route 29 and Butts Canyon Road according to County standards. However, although intersections #20 and #21 would both exceed the LOS D threshold established in Napa County's General Plan, the proposed project would not increase the side street approach by more than 10 percent at either of these intersections and therefore the project's contribution to congestion at these intersections would be *less-than-significant*.

4.4 Baseline Traffic Capacity Conditions (Scenario 3)

The Baseline scenario evaluates the existing conditions with the addition of traffic from reasonably foreseeable projects in the area and general baseline growth in traffic. For this analysis the baseline volumes were developed based on the assumption that the project completion date would be 2022 with an average traffic growth of 1% per year. The trips added by near-term development during this time were based on the forecast trip generation for a list of approved projects identified by the County and include 54 homes being constructed in the Hidden Valley community and also another 500 homes that would potentially be located to the east of SR 29, south of the Hidden Valley area. These are projects anticipated to be completed in the next five years that could potentially effect the traffic volumes at the project study intersections. The traffic volumes for each of the study intersections for the Baseline scenario are shown in **Figure 8**. **Table 6** summarizes the associated LOS computation results for the Baseline weekday AM and PM peak hour conditions. As shown in **Table 6**, all of the study intersections would continue to have acceptable conditions under the Baseline scenario during the weekday AM and PM peak hours with the exception of Intersection #20 (State Route 29 at Tubbs Lane) and Intersection #21 (State Route 128 at Tubbs Lane) which would both continue to exceed their established thresholds.

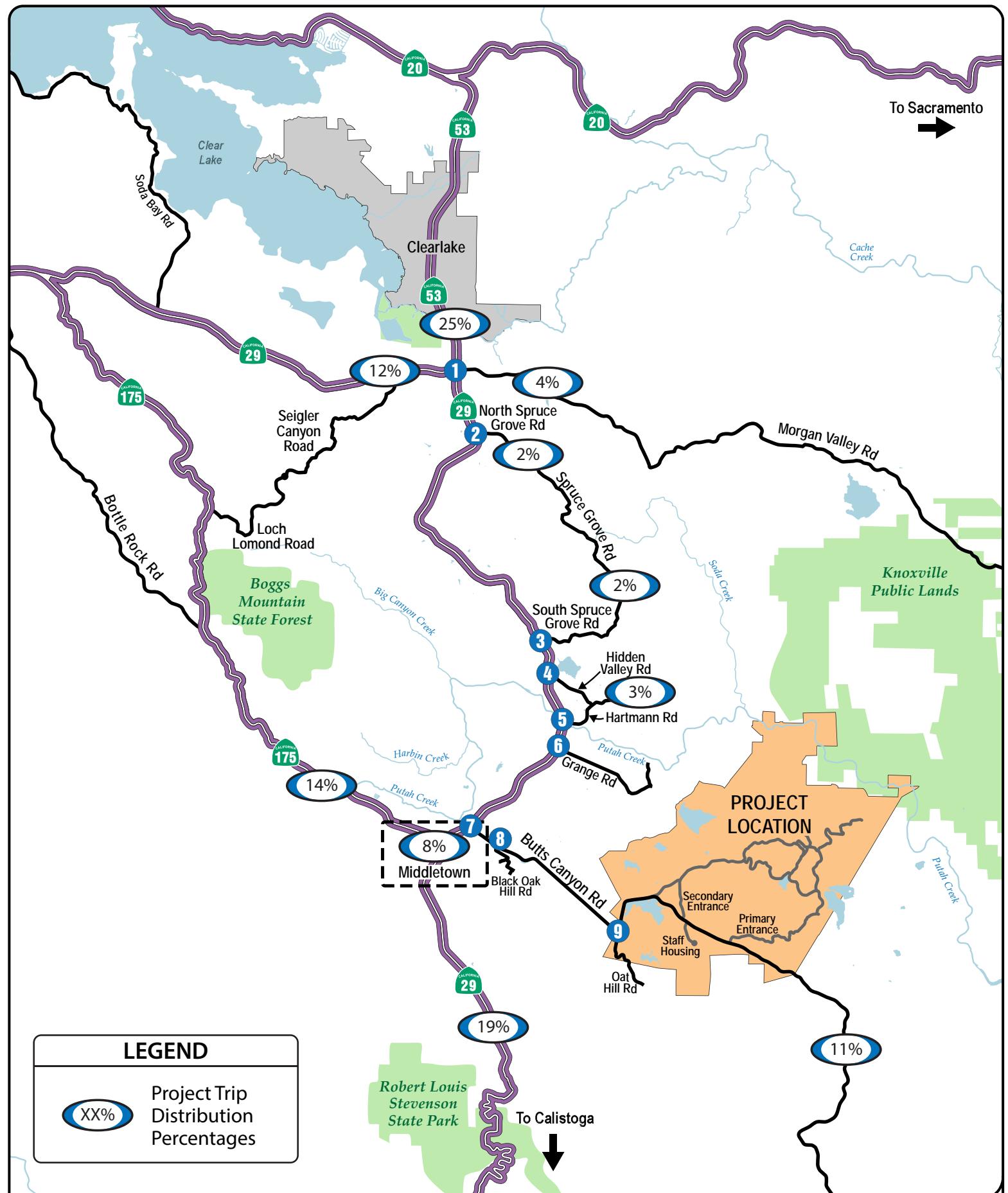


FIGURE 5 | PROJECT TRIP DISTRIBUTION

TRANSPORTATION IMPACT ANALYSIS

Maha Resort at Guenoc Valley

LAKE COUNTY



Abrams Associates
TRAFFIC ENGINEERING, INC.

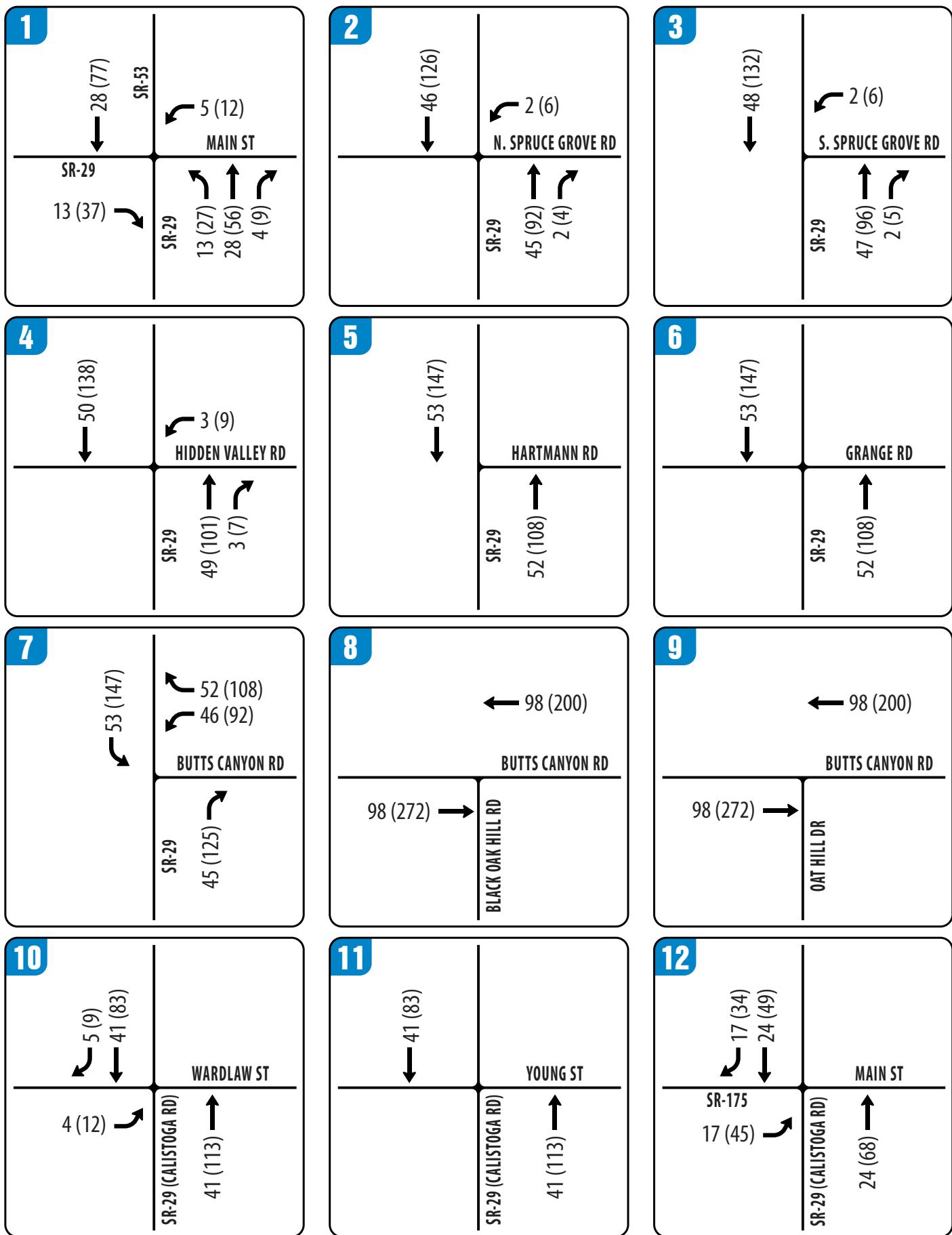


FIGURE 6 | PROJECT PHASE-1 AM(PM) PEAK HOUR TRIPS – PAGE 1 OF 2
TRANSPORTATION IMPACT ANALYSIS

Maha Resort at Guenoc Valley
 Lake County

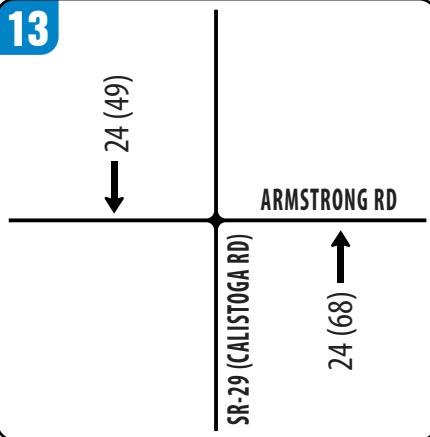
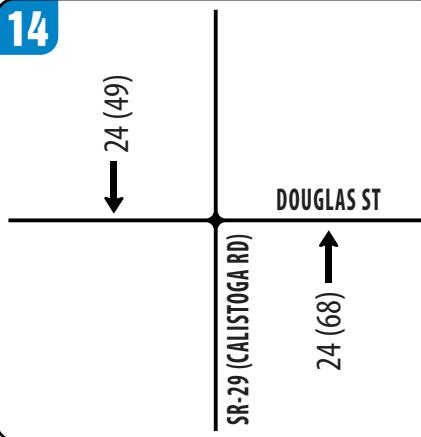
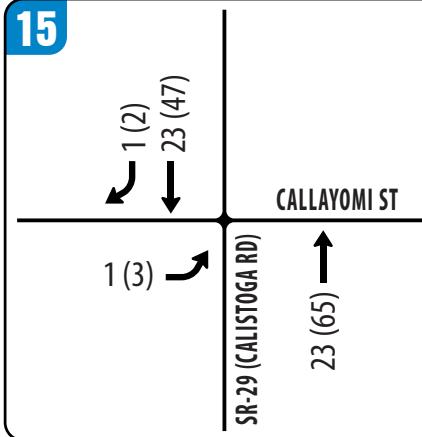
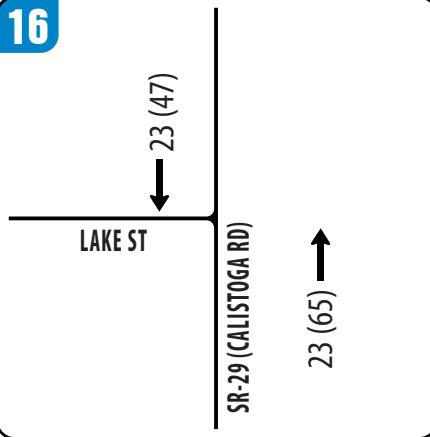
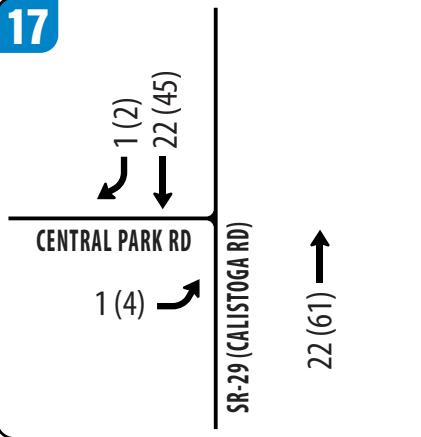
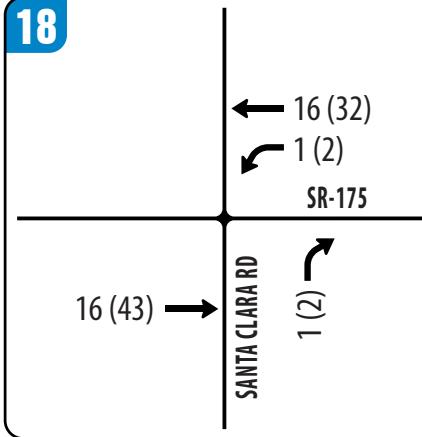
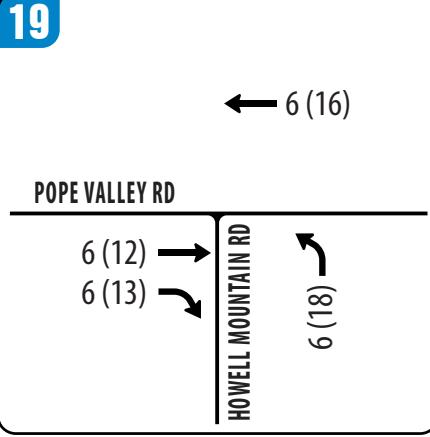
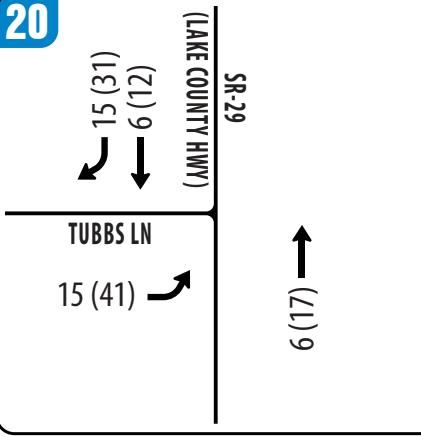
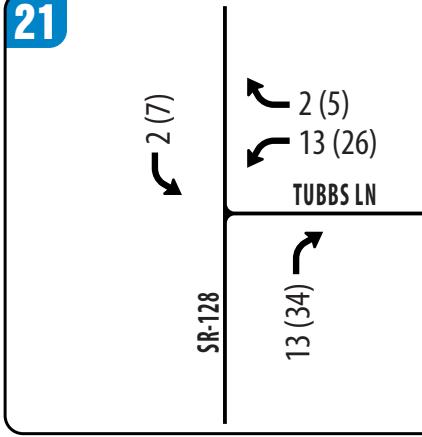
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FIGURE 6 | PROJECT PHASE-1 AM(PM) PEAK HOUR TRIPS – PAGE 2 OF 2
TRANSPORTATION IMPACT ANALYSIS

Maha Resort at Guenoc Valley
 Lake County

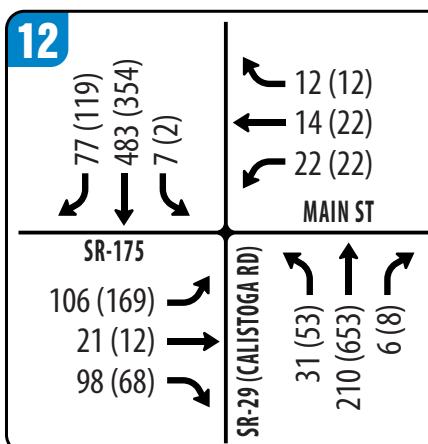
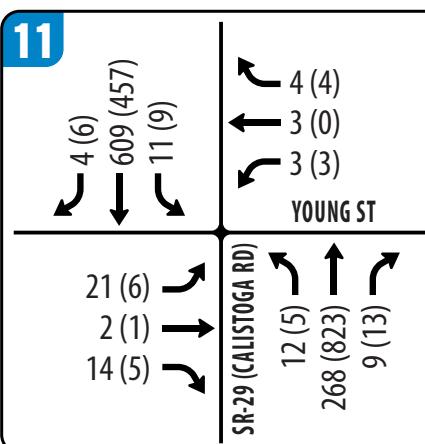
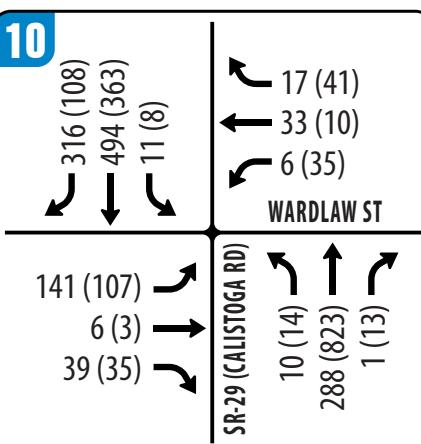
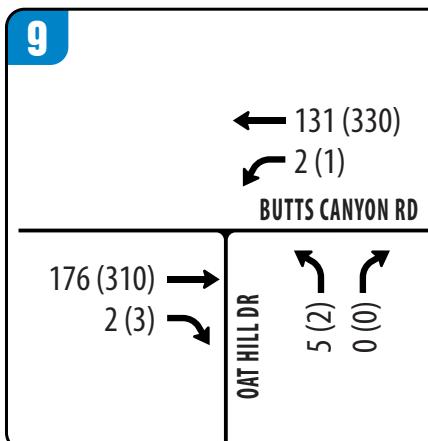
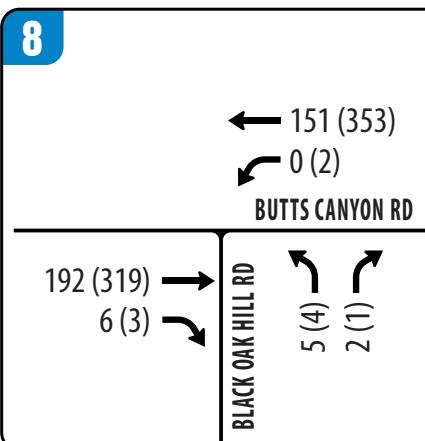
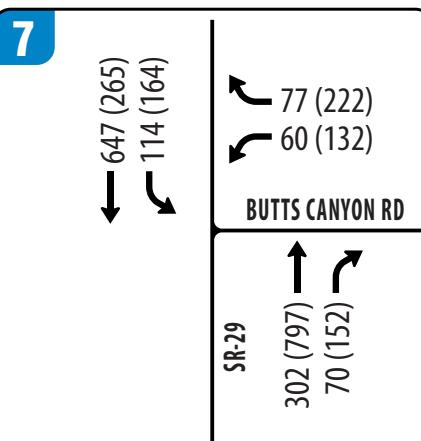
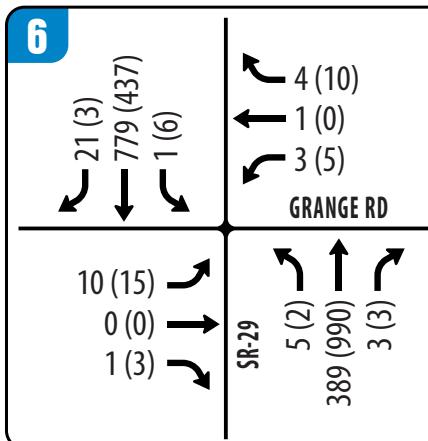
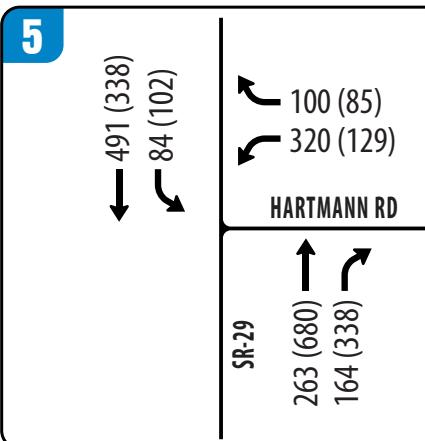
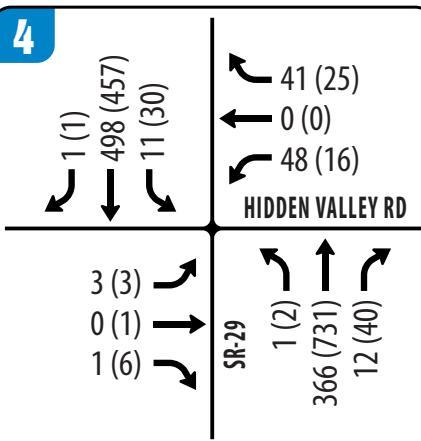
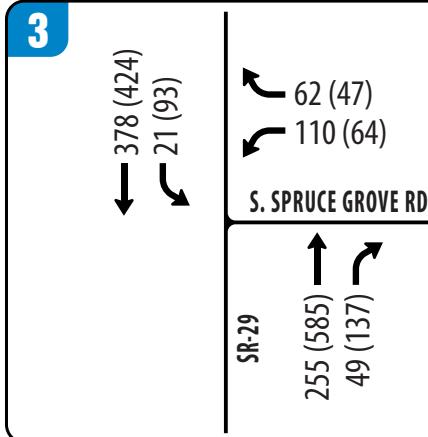
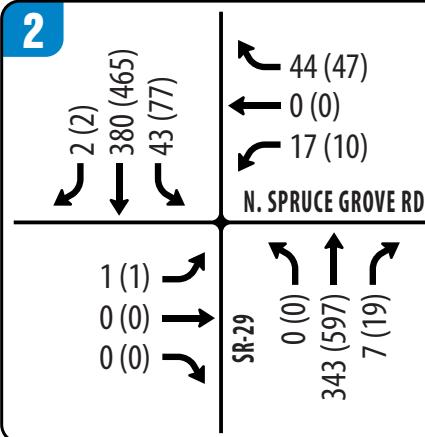
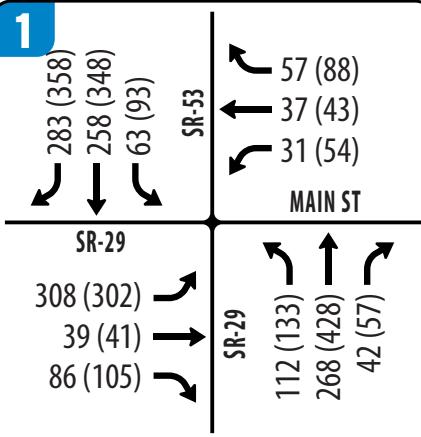


FIGURE 7 | EXISTING PLUS PROJECT AM(PM) PEAK HOUR TRAFFIC VOLUMES – PAGE 1 OF 2
TRANSPORTATION IMPACT ANALYSIS

Maha Resort at Guenoc Valley
Lake County

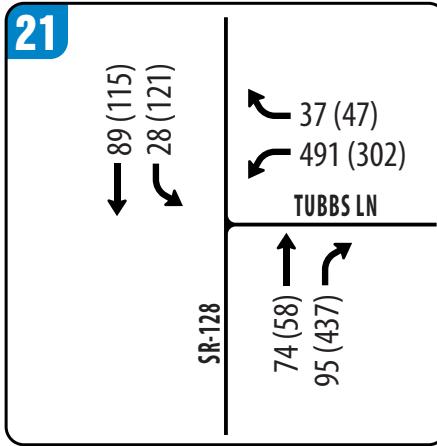
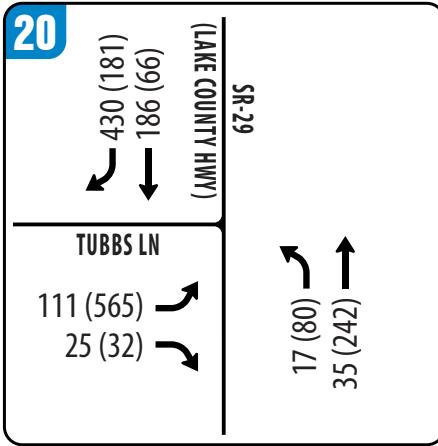
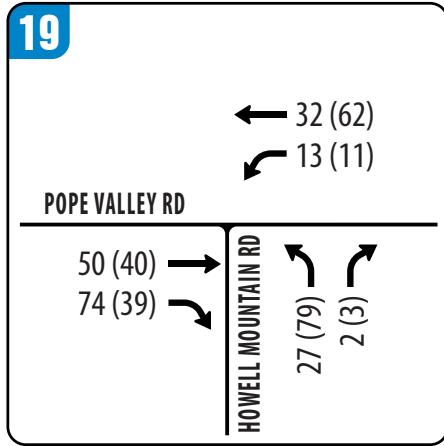
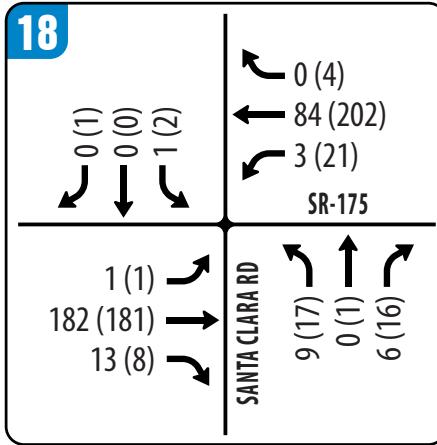
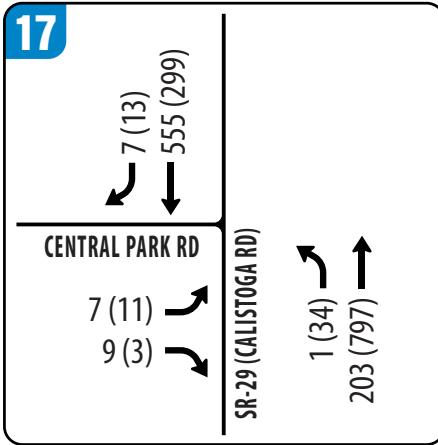
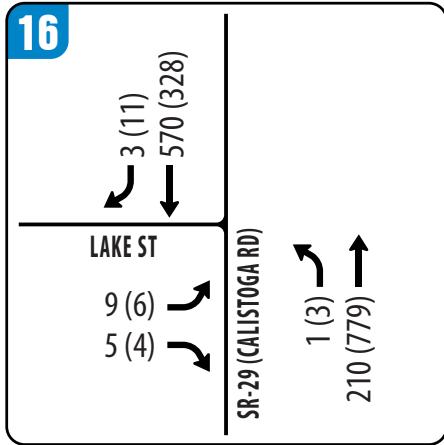
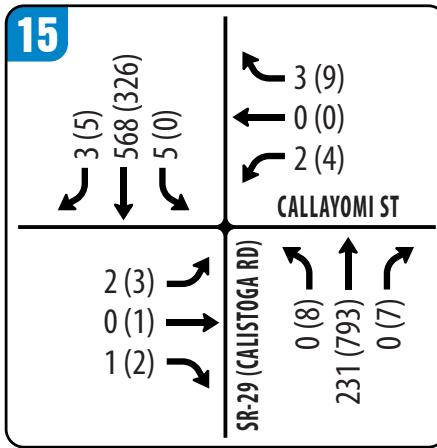
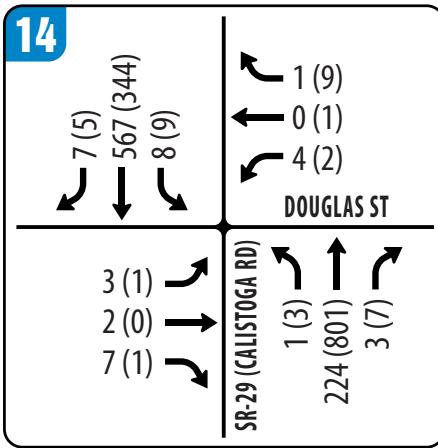
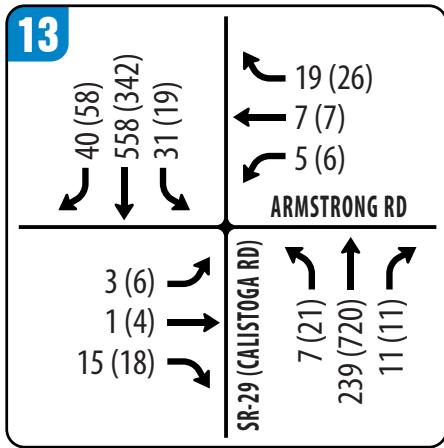


FIGURE 7 | EXISTING PLUS PROJECT AM(PM) PEAK HOUR TRAFFIC VOLUMES – PAGE 2 OF 2
TRANSPORTATION IMPACT ANALYSIS

Maha Resort at Guenoc Valley
 Lake County

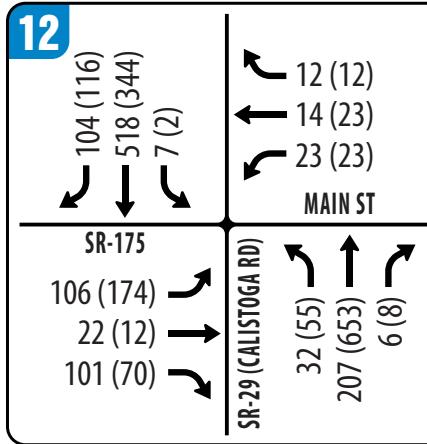
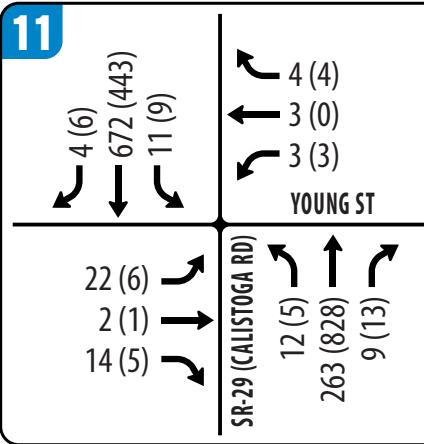
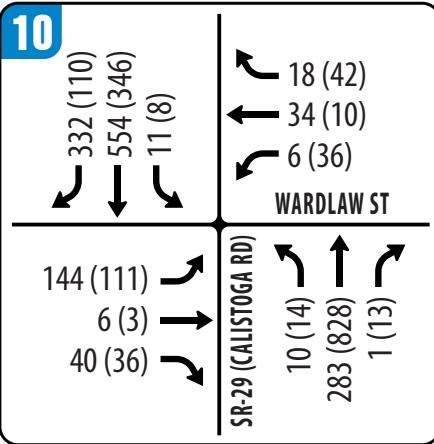
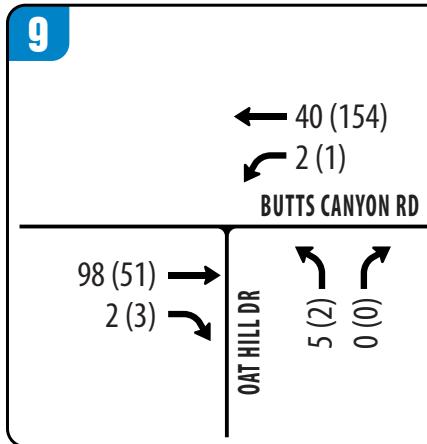
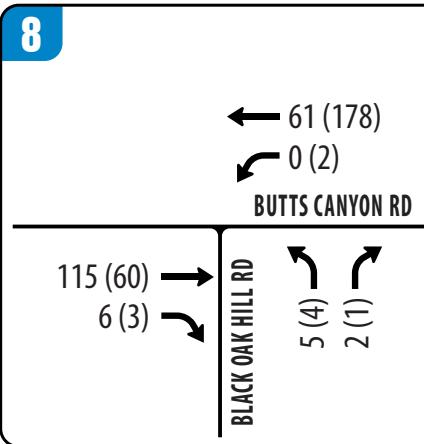
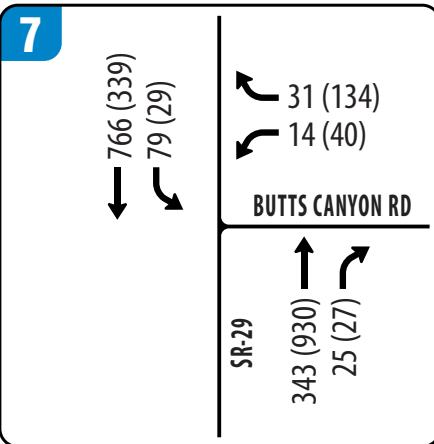
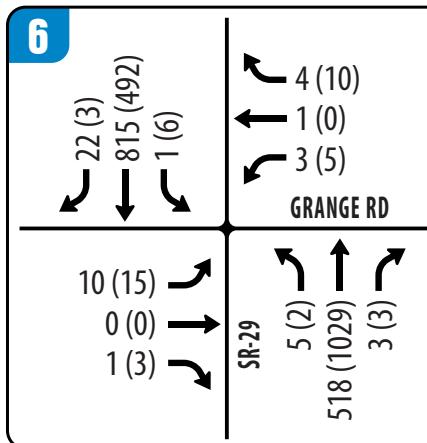
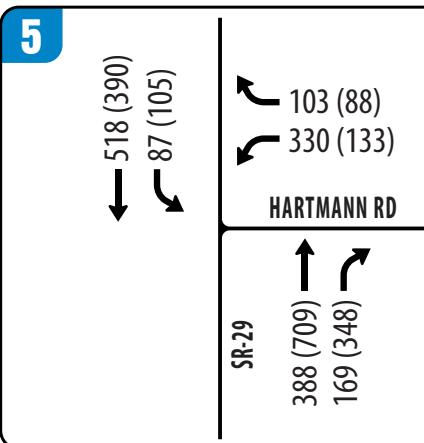
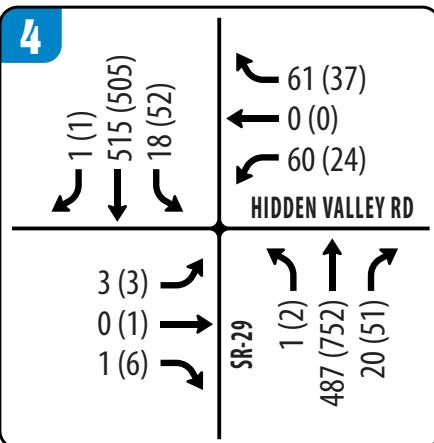
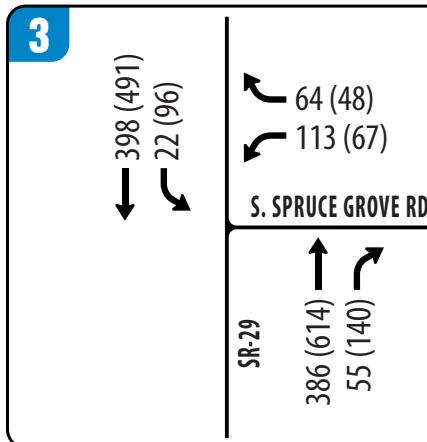
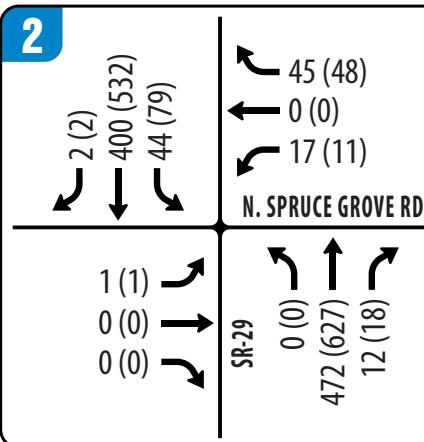
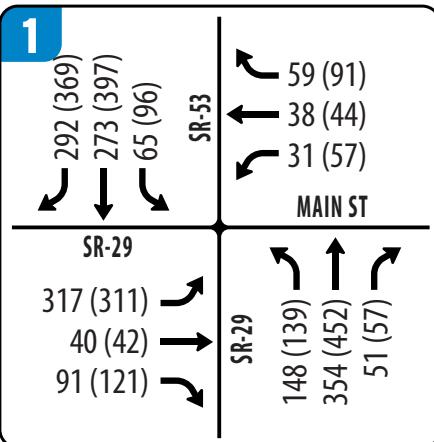


FIGURE 8 | BASELINE AM(PM) PEAK HOUR TRAFFIC VOLUMES – PAGE 1 OF 2
TRANSPORTATION IMPACT ANALYSIS

Maha Resort at Guenoc Valley
Lake County

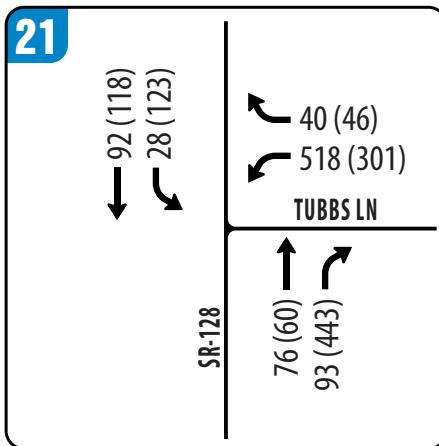
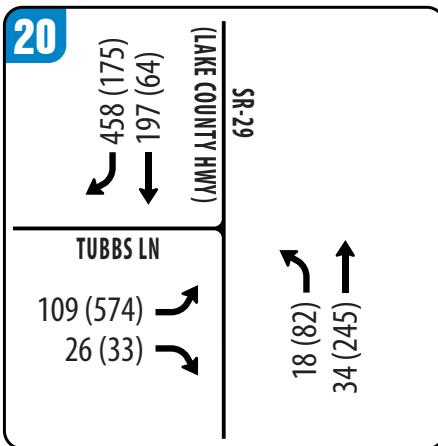
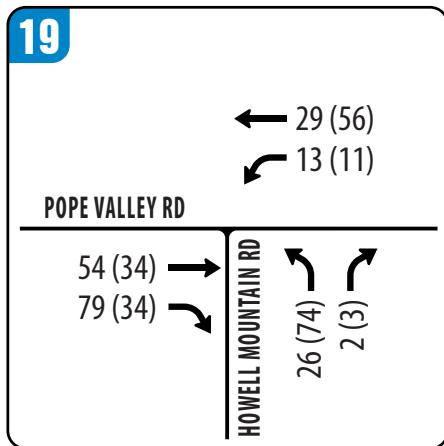
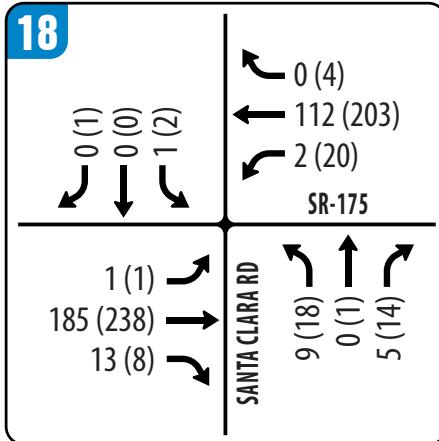
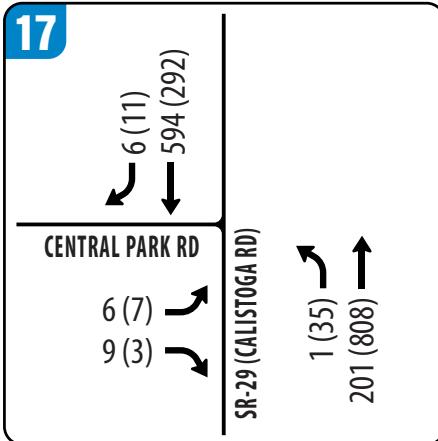
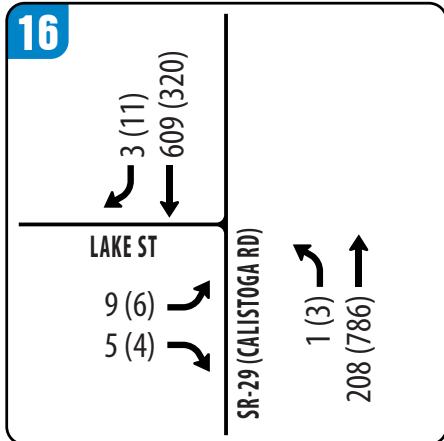
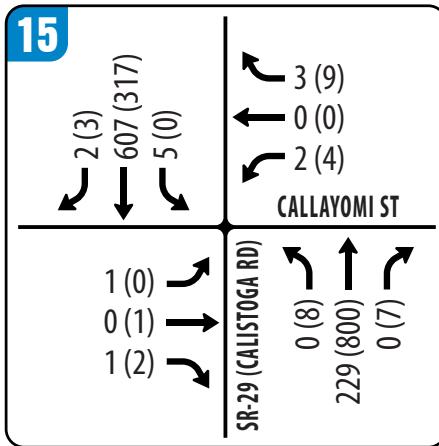
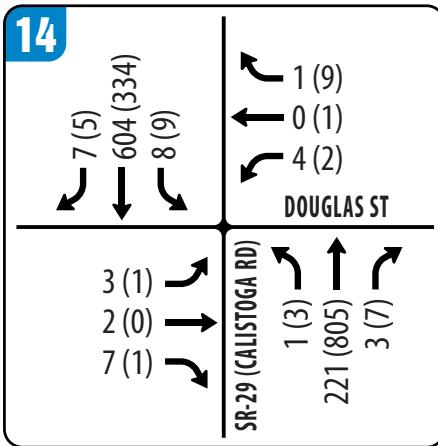
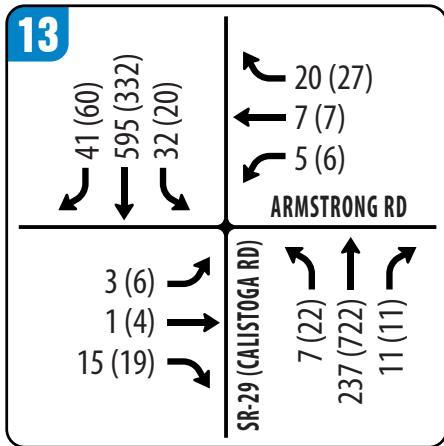


FIGURE 8 | BASELINE AM(PM) PEAK HOUR TRAFFIC VOLUMES – PAGE 2 OF 2
TRANSPORTATION IMPACT ANALYSIS

Maha Resort at Guenoc Valley
 Lake County

TABLE 5
EXISTING PLUS PROJECT INTERSECTION LEVEL OF SERVICE CONDITIONS – PAGE 1 OF 2

INTERSECTION		CONTROL	PEAK HOUR	EXISTING		EXISTING PLUS PROJECT	
				Delay	LOS	Delay	LOS
1	STATE ROUTE 29 / STATE ROUTE 53 & MAIN STREET	Signalized	AM	17.6	B	17.9	B
			PM	19.0	B	19.7	B
2	STATE ROUTE 29 & SPRUCE GROVE ROAD (NORTH) <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	1.5 18.3	A C	1.4 20.7	A C
			PM	1.4 28.2	A D	1.5 40.0	A E
			AM	3.8 16.1	A C	3.9 18.7	A C
3	STATE ROUTE 29 & SPRUCE GROVE ROAD (SOUTH) <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	PM	3.4 27.1	A D	4.7 48.5	A E
			AM	1.8 17.7	A C	1.9 20.0	A C
			PM	0.9 16.8	A C	1.2 25.0	A D
4	STATE ROUTE 29 & HIDDEN VALLEY ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	9.2	A	10.4	B
			PM	14.7	B	20.8	C
5	STATE ROUTE 29 & HARTMANN ROAD	Roundabout	AM	0.4 27.4	A D	0.5 32.1	A D
			PM	0.8 31.8	A D	0.9 49.5	A E
			AM	1.0 15.4	A C	3.5 25.5	A D
6	STATE ROUTE 29 & GRANGE ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	PM	2.9 22.9	A C	39.0 > 50.0	E F
			AM	0.4 9.2	A A	0.2 10.4	A B
			PM	0.3 9.5	A A	0.1 13.6	A B
7	STATE ROUTE 29 & BUTTS CANYON ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.5 9.2	A A	0.2 10.5	A B
			PM	0.2 9.5	A A	0.2 13.9	A B
			AM	8.7	A	9.1	A
8	BUTTS CANYON ROAD & BLACK OAK HILL DRIVE <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	PM	6.6	A	7.3	A
			AM	1.2 18.8	A C	1.2 21.1	A C
9	BUTTS CANYON ROAD & OAT HILL DRIVE <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	PM	0.5 22.0	A C	0.5 28.7	A D
			AM	7.1	A	7.7	A
10	STATE ROUTE 29 (CALISTOGA ROAD) & WARDLAW STREET	Signalized	PM	7.6	A	9.3	A
			AM	1.2 18.8	A C	1.2 21.1	A C
11	STATE ROUTE 29 (CALISTOGA ROAD) & YOUNG STREET <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	PM	0.5 22.0	A C	0.5 28.7	A D
			AM	7.1	A	7.7	A
12	STATE ROUTE 29 (CALISTOGA ROAD) & STATE ROUTE 175 / MAIN STREET	Signalized	PM	7.6	A	9.3	A
			AM	1.2 18.8	A C	1.2 21.1	A C
13	STATE ROUTE 29 (CALISTOGA ROAD) & ARMSTRONG ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	PM	1.4 20.1	A C	1.4 23.0	A C
			AM	0.4 16.4	A C	0.4 17.4	A C
			PM	0.3 18.5	A C	0.3 21.2	A C
14	STATE ROUTE 29 (CALISTOGA ROAD) & DOUGLAS STREET <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.2 14.9	A B	0.2 16.6	A C
			PM	0.3 18.2	A C	0.3 23.2	A C
15	STATE ROUTE 29 (CALISTOGA ROAD) & CALLAYOMI STREET <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.2 14.9	A B	0.2 16.6	A C
			PM	0.3 18.2	A C	0.4 23.2	A C

SOURCE: Abrams Associates, 2019

NOTE: Delay results are presented in terms of seconds per vehicle.

TABLE 5
EXISTING INTERSECTION LEVEL OF SERVICE CONDITIONS – PAGE 2 OF 2

INTERSECTION		CONTROL	PEAK HOUR	EXISTING		EXISTING PLUS PROJECT	
				Delay	LOS	Delay	LOS
16	STATE ROUTE 29 (CALISTOGA ROAD) & LAKE STREET <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.3 14.5	A B	0.3 15.1	A C
			PM	0.2 16.5	A C	0.2 18.5	A C
17	STATE ROUTE 29 (CALISTOGA ROAD) & CENTRAL PARK ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.3 13.4	A B	0.3 13.9	A B
			PM	0.4 18.8	A C	0.5 23.0	A C
18	STATE ROUTE 175 & SANTA CLARA ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.6 10.3	A B	0.6 10.7	A B
			PM	1.4 10.8	A B	1.3 11.5	A B
19	POPE VALLEY ROAD & HOWELL MOUNTAIN ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	1.8 9.3	A A	1.9 9.5	A A
			PM	3.9 9.5	A A	3.8 9.8	A A
20	STATE ROUTE 29 & TUBBS LANE <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	2.4 13.7	A B	2.6 14.4	A B
			PM	> 50.0 > 50.0	F F	> 50.0 > 50.0	F F
21	STATE ROUTE 128 & TUBBS LANE <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	17.3 26.0	C D	19.3 29.3	C D
			PM	15.8 46.9	B E	25.4 > 50.0	D F

4.5 Baseline Plus Phase 1 Traffic Capacity Conditions (Scenario 4)

The Baseline plus proposed project traffic forecasts were developed by adding traffic from Phases 1 to the baseline traffic volumes. The traffic volumes for each of the study intersections for the Baseline Plus Project scenario are shown in **Figure 9**. **Table 8** summarizes the LOS results for the Baseline and Baseline Plus Project weekday AM and PM peak hour conditions. The corresponding LOS analysis calculation sheets are presented in the appendix to this report. As shown in **Table 8**, all of the study intersections would continue to have acceptable conditions under the Baseline Plus Project scenario during the weekday AM and PM peak hours with the exception of Intersection #7 (State Route 29 at Butts Canyon Road), Intersection #20 (State Route 29 at Tubbs Lane) and Intersection #21 (State Route 128 at Tubbs Lane) which would all exceed their established thresholds. The addition of project traffic at Intersection #7 would be considered a *significant impact*. Mitigations to improve the operations at these intersections are discussed in Section 5. At Intersections #20 and #21 in Napa County the proposed project would not increase the traffic on the side street approaches by more than 10 percent at either of these intersections and therefore the project's contribution to congestion at these intersections would be considered *less-than-significant*.

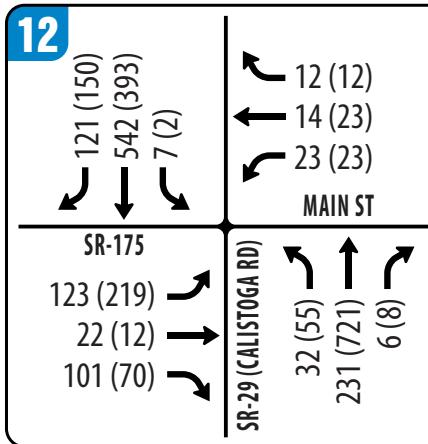
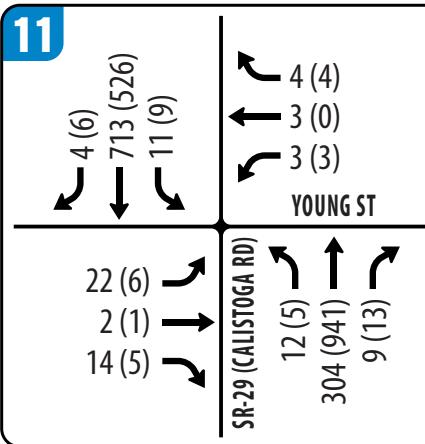
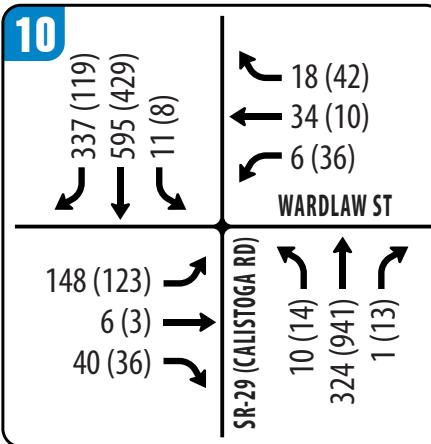
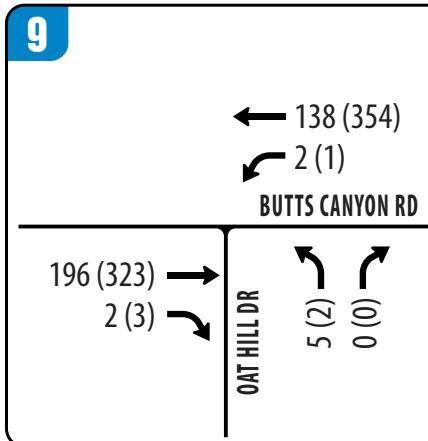
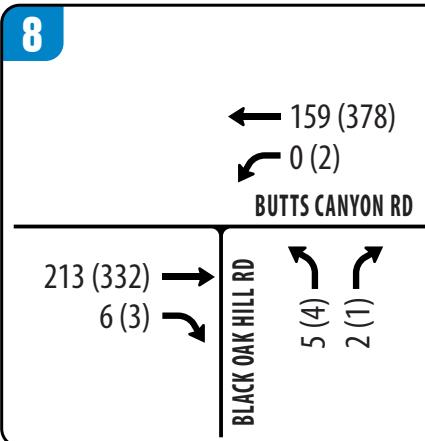
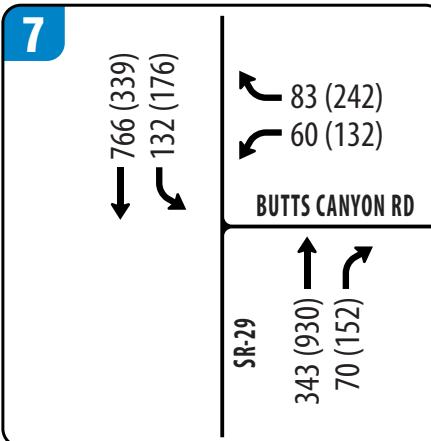
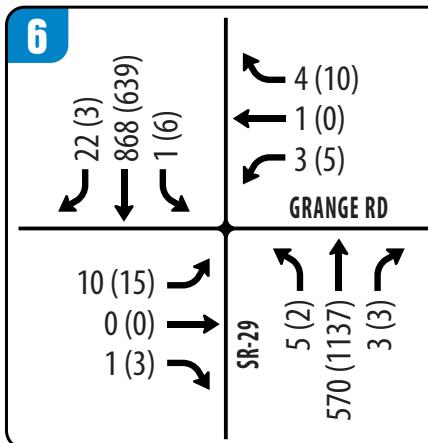
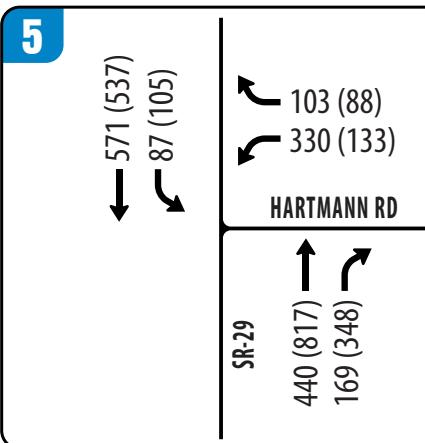
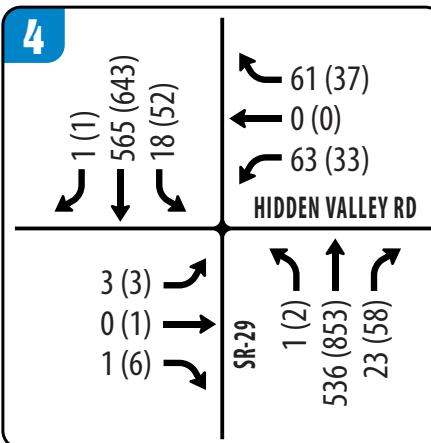
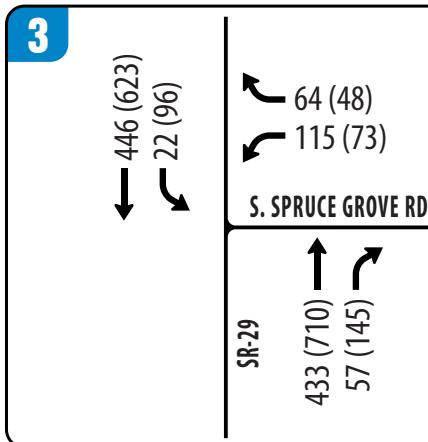
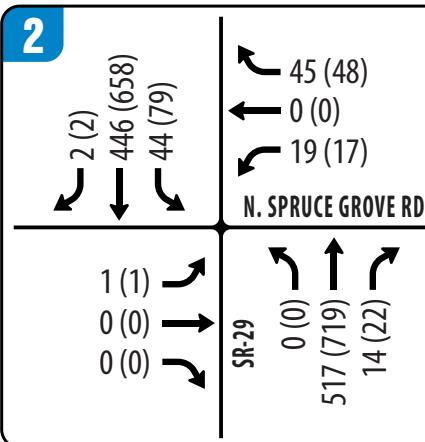
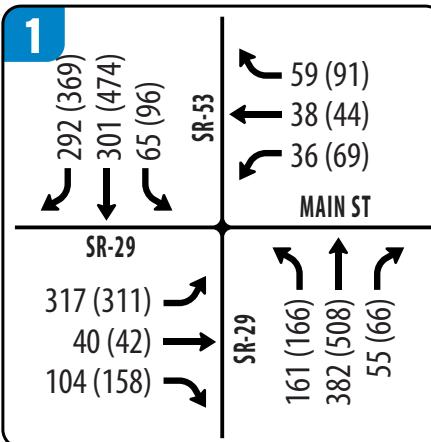


FIGURE 9 | BASELINE PLUS PROJECT AM(PM) PEAK HOUR TRAFFIC VOLUMES – PAGE 1 OF 2
TRANSPORTATION IMPACT ANALYSIS

Maha Resort at Guenoc Valley
Lake County

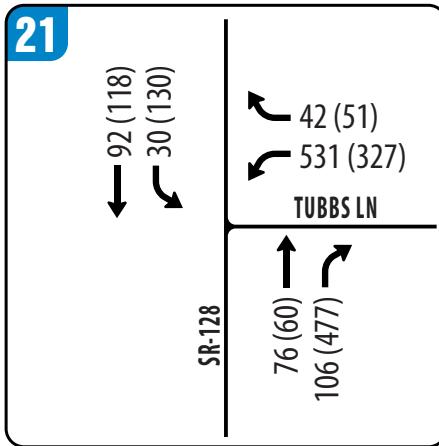
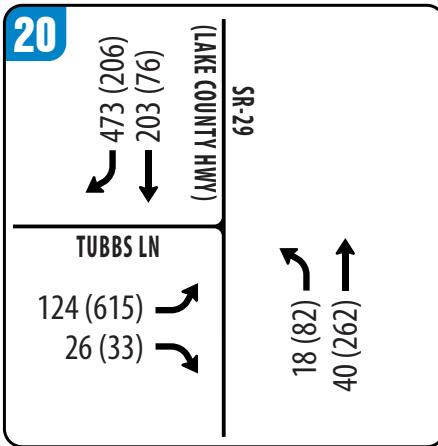
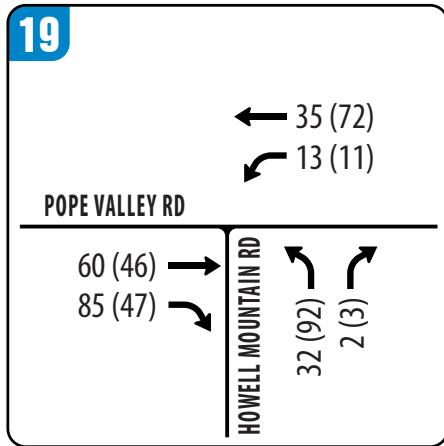
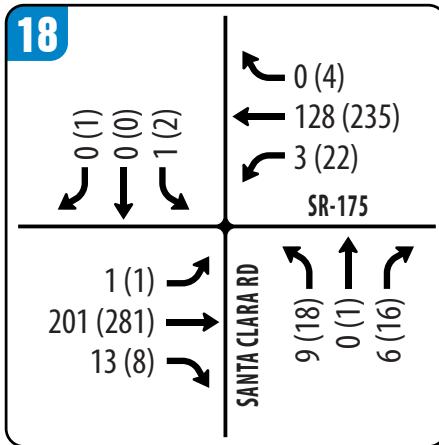
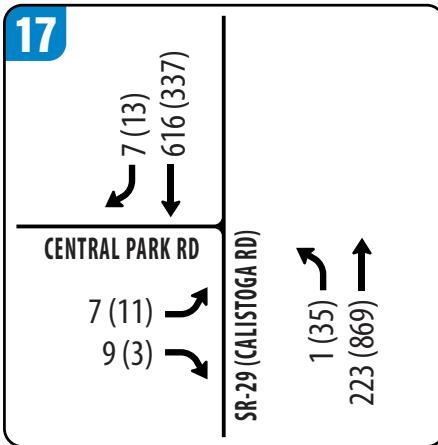
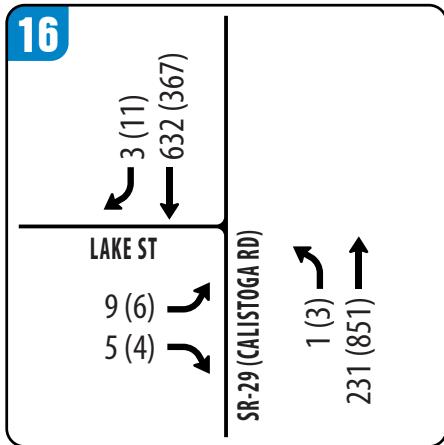
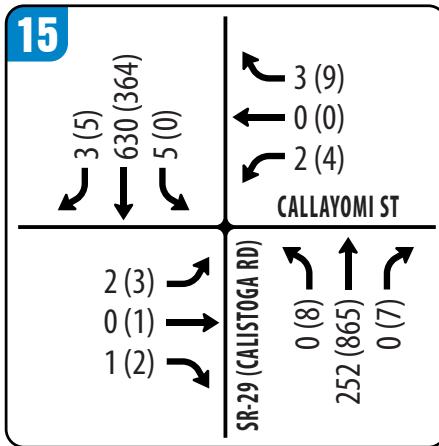
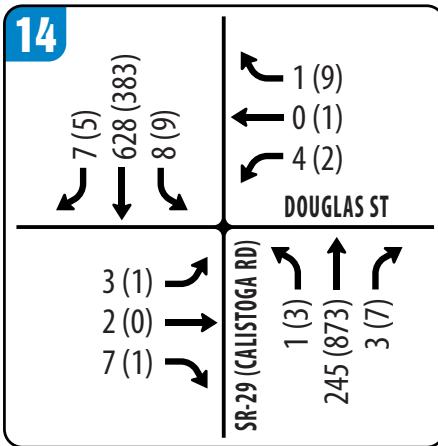
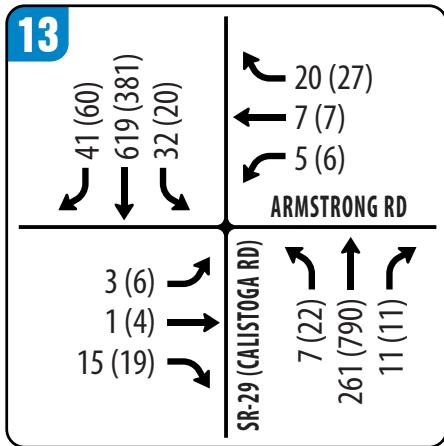


FIGURE 9 | BASELINE PLUS PROJECT AM(PM) PEAK HOUR TRAFFIC VOLUMES – PAGE 2 OF 2
TRANSPORTATION IMPACT ANALYSIS

Maha Resort at Guenoc Valley
Lake County

TABLE 6
BASELINE PLUS PROJECT INTERSECTION LEVEL OF SERVICE CONDITIONS – PAGE 1 OF 2

INTERSECTION		CONTROL	PEAK HOUR	BASELINE		BASELINE PLUS PROJECT	
				Delay	LOS	Delay	LOS
1	STATE ROUTE 29 / STATE ROUTE 53 & MAIN STREET	Signalized	AM	18.7	B	19.0	B
			PM	20.3	C	21.5	C
2	STATE ROUTE 29 & SPRUCE GROVE ROAD (NORTH) <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	1.4 25.9	A D	1.4 29.7	A D
			PM	1.5 46.9	A E	1.9 > 50.0	A F
3	STATE ROUTE 29 & SPRUCE GROVE ROAD (SOUTH) <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	4.6 26.3	A D	5.4 33.5	A D
			PM	6.2 > 50.0	A F	14 > 50.0	B F
4	STATE ROUTE 29 & HIDDEN VALLEY ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	2.8 25.8	A D	3.2 30.9	A D
			PM	1.9 32.1	A D	3.4 > 50.0	A F
5	STATE ROUTE 29 & HARTMANN ROAD	Roundabout	AM	12.1	B	14.0	B
			PM	24.7	C	39.2	E
6	STATE ROUTE 29 & GRANGE ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.5 41.9	A E	0.6 > 50.0	A F
			PM	1.0 > 50.0	A F	1.5 > 50.0	A F
7	STATE ROUTE 29 & BUTTS CANYON ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	1.2 17.6	A C	4.5 37.9	A E
			PM	4.1 33.2	A D	> 50.0 > 50.0	F F
8	BUTTS CANYON ROAD & BLACK OAK HILL DRIVE <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.3 9.4	A A	0.2 10.6	A B
			PM	0.3 9.7	A A	0.1 14.1	A B
9	BUTTS CANYON ROAD & OAT HILL DRIVE <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.4 9.3	A A	0.2 10.8	A B
			PM	0.1 9.7	A A	0.1 14.4	A B
10	STATE ROUTE 29 (CALISTOGA ROAD) & WARDLAW STREET	Signalized	AM	10.2	B	11.4	B
			PM	7.5	A	8.6	A
11	STATE ROUTE 29 (CALISTOGA ROAD) & YOUNG STREET <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	1.2 23.2	A C	1.2 26.3	A D
			PM	0.5 28.2	A D	0.5 37.7	A E
12	STATE ROUTE 29 (CALISTOGA ROAD) & STATE ROUTE 175 / MAIN STREET	Signalized	AM	8.2	A	8.9	A
			PM	9.5	A	12.0	B
13	STATE ROUTE 29 (CALISTOGA ROAD) & ARMSTRONG ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	1.1 15.7	A C	1.1 16.3	A C
			PM	1.5 22.9	A C	1.5 26.8	A D
14	STATE ROUTE 29 (CALISTOGA ROAD) & DOUGLAS STREET <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.4 18.2	A C	0.4 19.3	A C
			PM	0.3 21.0	A C	0.3 24.3	A C
15	STATE ROUTE 29 (CALISTOGA ROAD) & CALLAYOMI STREET <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.2 16.2	A C	0.2 18.3	A C
			PM	0.3 20.5	A C	0.4 26.9	A D

SOURCE: Abrams Associates, 2019

NOTE: Delay results are presented in terms of seconds per vehicle.

TABLE 6
BASELINE INTERSECTION LEVEL OF SERVICE CONDITIONS – PAGE 2 OF 2

INTERSECTION		CONTROL	PEAK HOUR	BASELINE		BASELINE PLUS PROJECT	
				Delay	LOS	Delay	LOS
16	STATE ROUTE 29 (CALISTOGA ROAD) & LAKE STREET <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.3 16.6	A C	0.3 17.3	A C
			PM	0.2 19.9	A C	0.2 22.6	A C
17	STATE ROUTE 29 (CALISTOGA ROAD) & CENTRAL PARK ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.3 14.9	A B	0.3 15.7	A C
			PM	0.4 23.2	A C	0.5 29.4	A D
18	STATE ROUTE 175 & SANTA CLARA ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.5 11.2	A B	0.5 11.6	A B
			PM	1.1 12.4	A B	1.1 13.3	A B
19	POPE VALLEY ROAD & HOWELL MOUNTAIN ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	1.7 9.7	A A	1.8 9.9	A A
			PM	3.9 10.1	A B	3.9 10.5	A B
20	STATE ROUTE 29 & TUBBS LANE <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	2.7 15.9	A C	3.1 17.0	A C
			PM	> 50.0 > 50.0	F F	> 50.0 > 50.0	F F
21	STATE ROUTE 128 & TUBBS LANE <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	29.6 44.2	D E	34.8 > 50.0	D F
			PM	36.2 > 50.0	E F	> 50.0 > 50.0	F F

SOURCE: Abrams Associates, 2019

NOTE: Delay results are presented in terms of seconds per vehicle.

4.6 Cumulative Traffic Capacity Conditions (Scenario 5)

For the cumulative conditions, the intersection traffic volumes were based on the existing turning movements plus incremental growth in background traffic (0.66% per year) based on the Lake County Traffic Model and the Solano Napa County Travel Demand Model. **Figure 10** presents the cumulative build-out traffic volumes for the project study intersections. **Table 7** summarizes the LOS results for the Cumulative (Year 2040) traffic conditions at each of the project study intersections. As shown on this table, the project study intersections would continue to have acceptable conditions during the weekday AM and PM peak commute hours with the exception of Intersection #5 (State Route 29 at Hartmann Road), Intersection #20 (State Route 29 at Tubbs Lane) and Intersection #21 (State Route 128 at Tubbs Lane) which would all exceed their established thresholds.

4.7 Cumulative Plus Phase 1 Traffic Capacity Conditions (Scenario 6)

Table 7 summarizes the LOS results for the Cumulative Plus Project (Year 2040) traffic conditions at each of the project study intersection. **Figure 11** presents the cumulative build-out traffic volumes including the traffic from the proposed project. As shown on this table, all of the signalized study intersections would continue to have acceptable conditions during the weekday

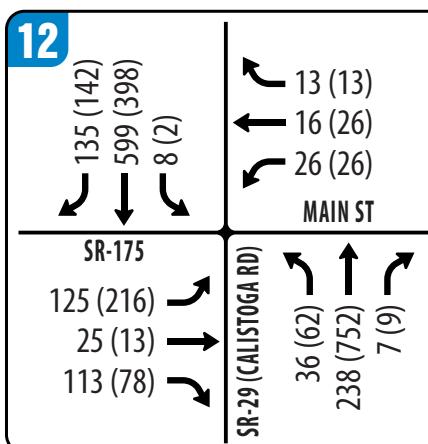
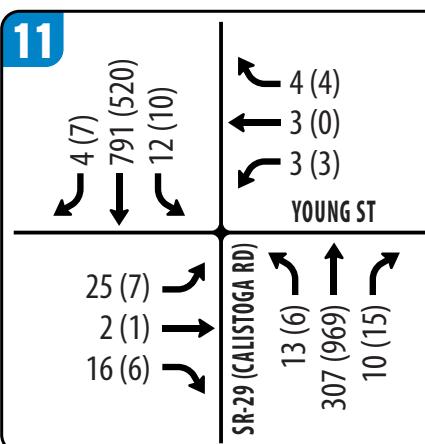
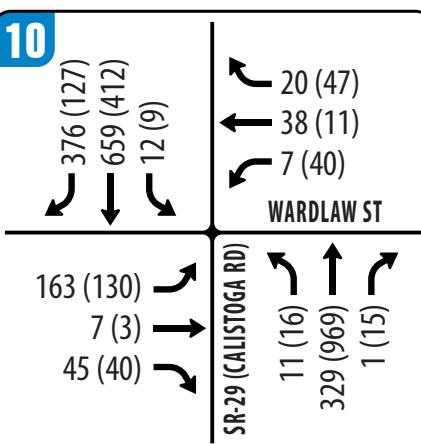
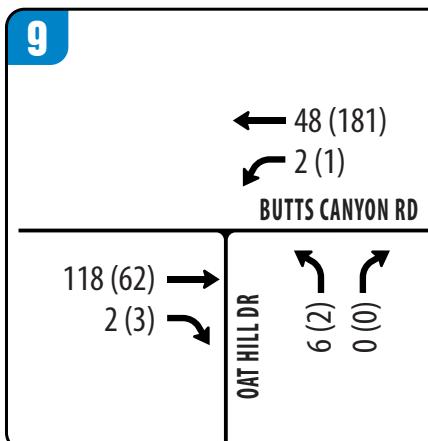
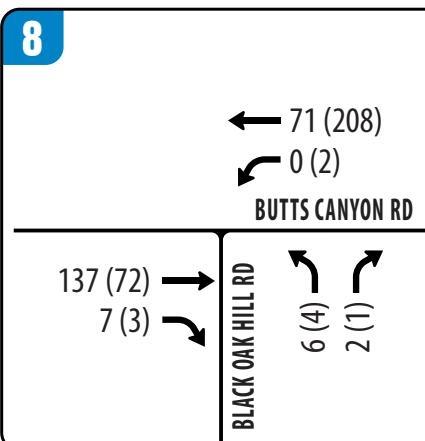
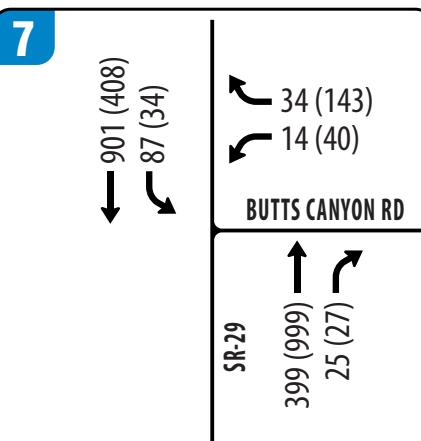
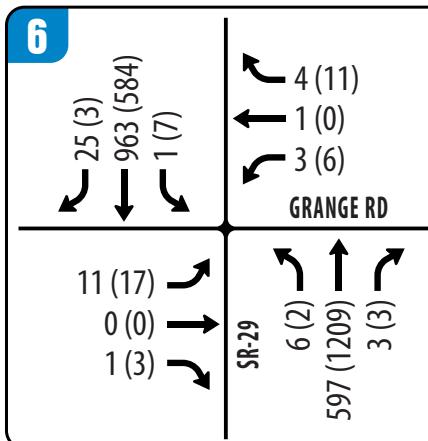
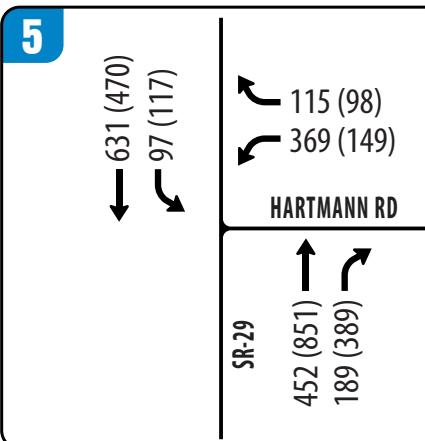
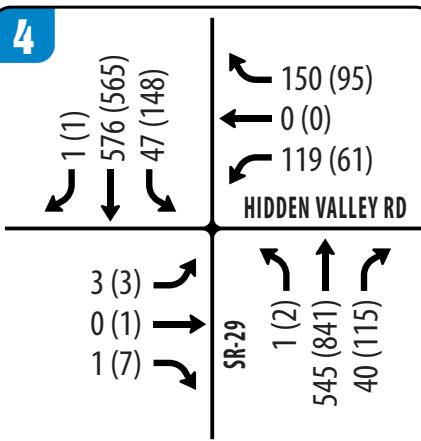
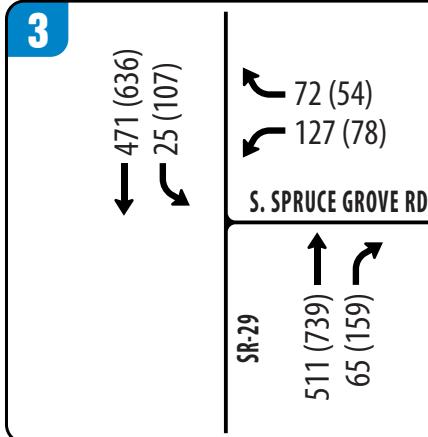
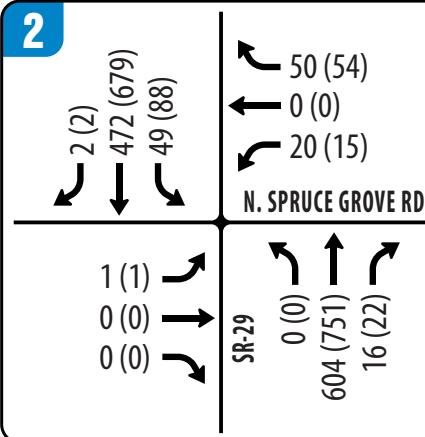
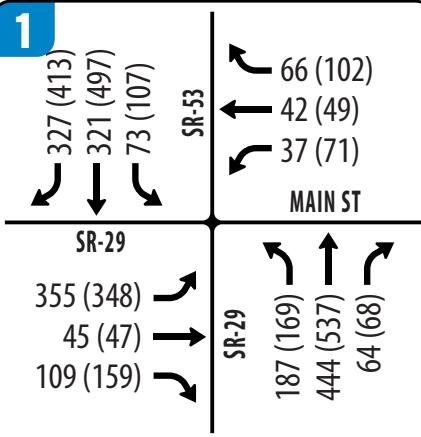


FIGURE 10 | CUMULATIVE AM(PM) PEAK HOUR TRAFFIC VOLUMES – PAGE 1 OF 2
TRANSPORTATION IMPACT ANALYSIS

Maha Resort at Guenoc Valley
Lake County

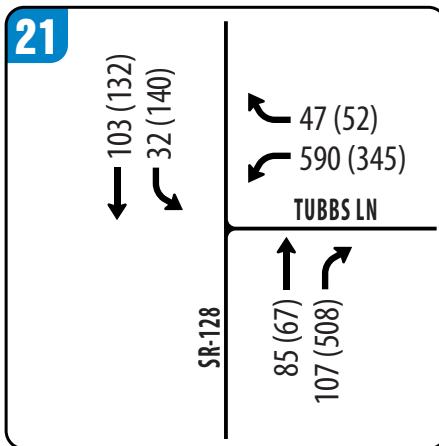
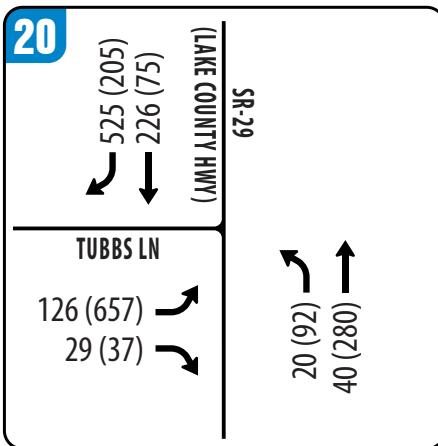
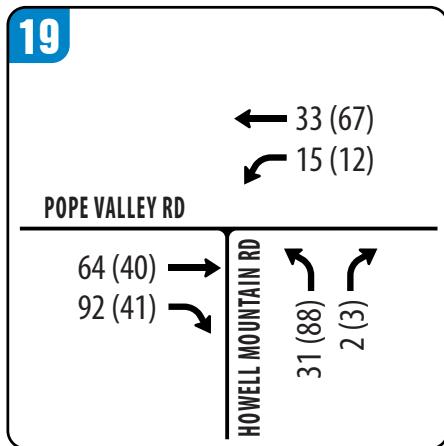
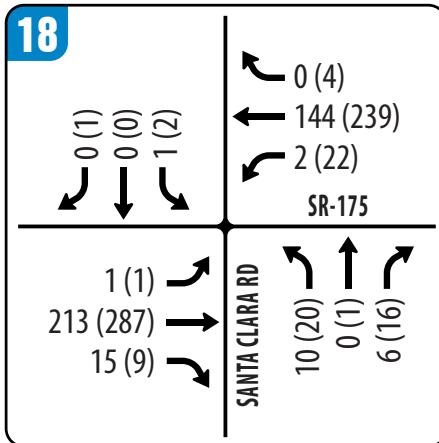
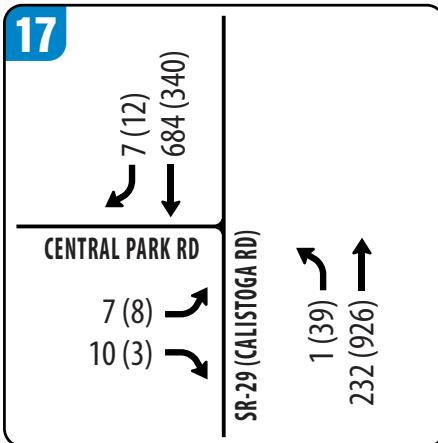
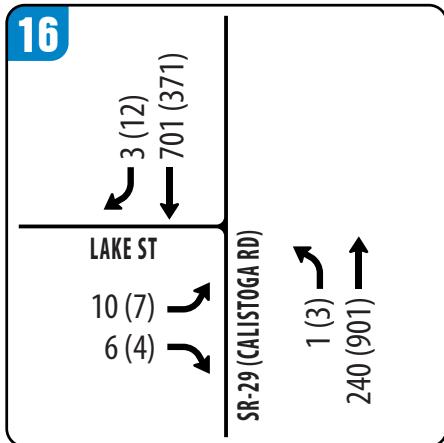
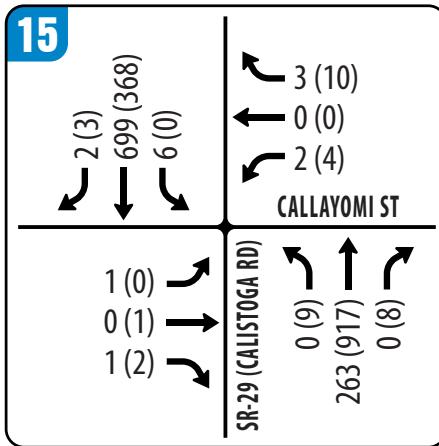
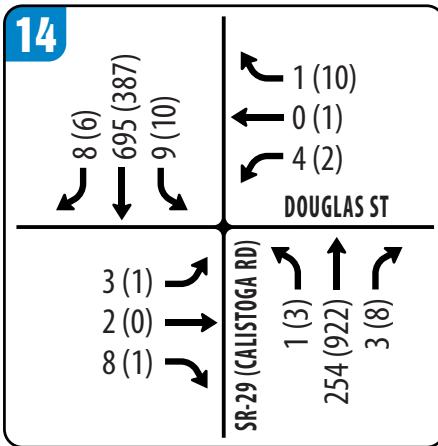
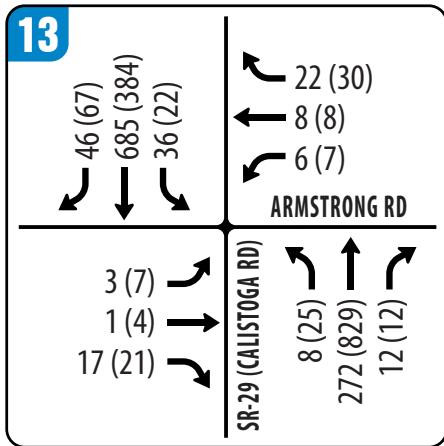


FIGURE 10 | CUMULATIVE AM(PM) PEAK HOUR TRAFFIC VOLUMES – PAGE 2 OF 2
TRANSPORTATION IMPACT ANALYSIS

Maha Resort at Guenoc Valley
 Lake County

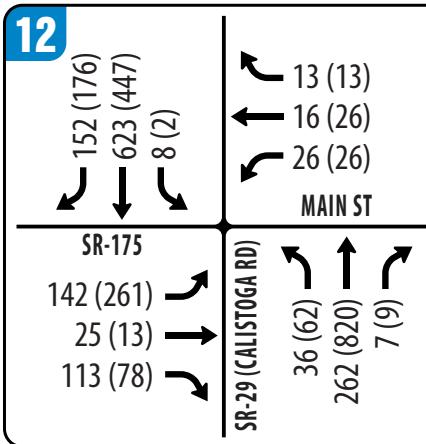
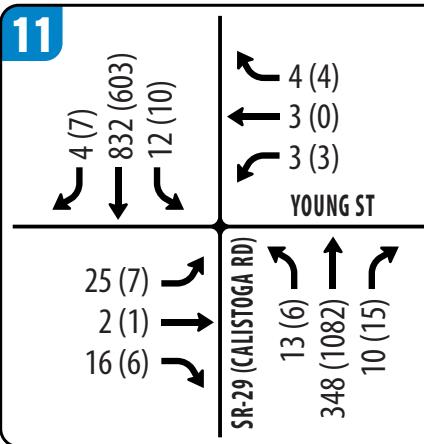
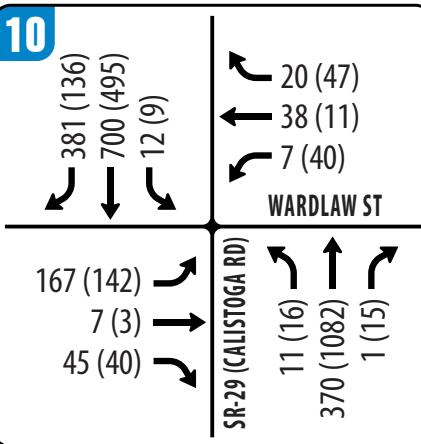
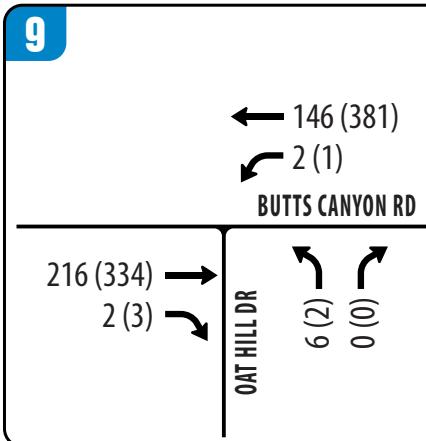
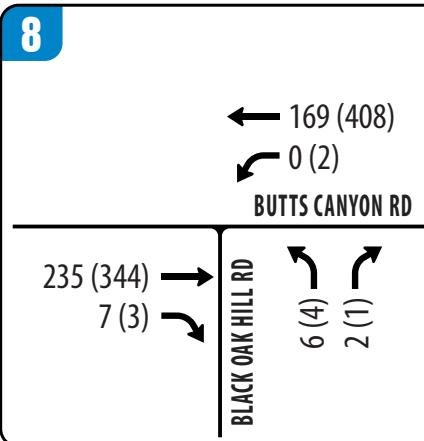
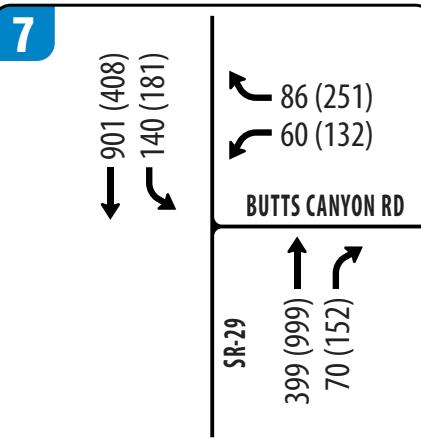
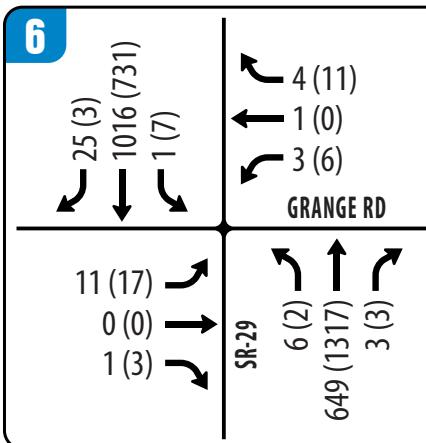
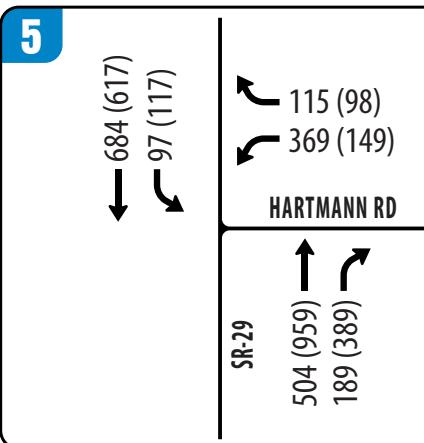
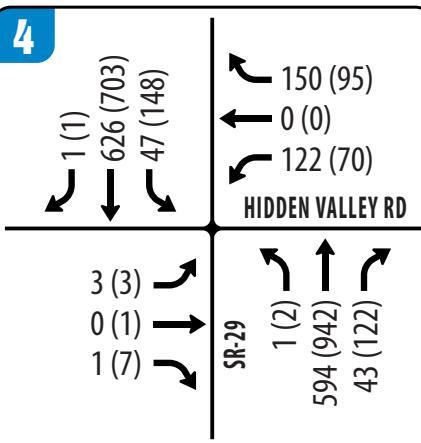
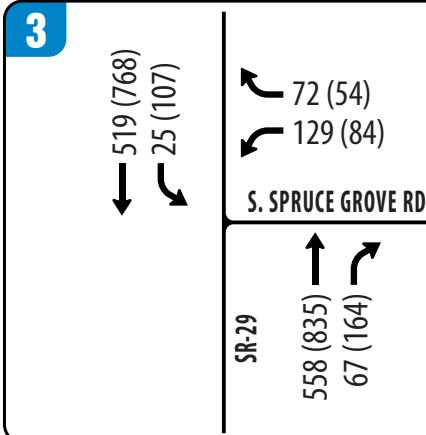
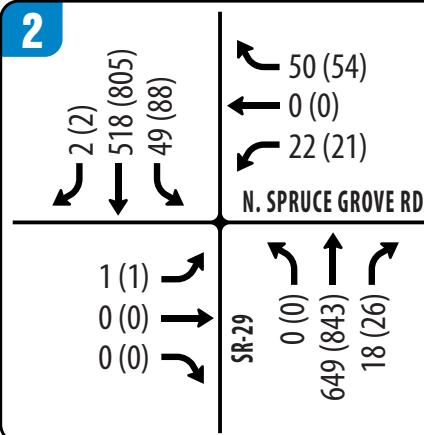
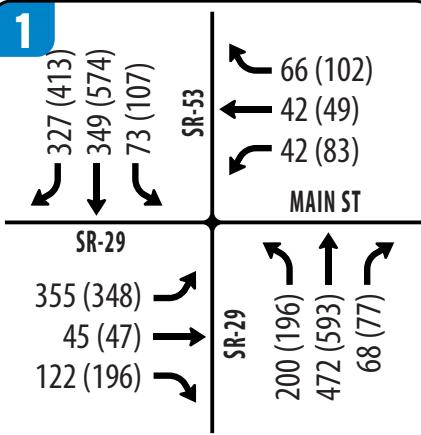


FIGURE 11 | CUMULATIVE PLUS PROJECT AM(PM) PEAK HOUR TRAFFIC VOLUMES – PAGE 1 OF 2
TRANSPORTATION IMPACT ANALYSIS

Maha Resort at Guenoc Valley
 Lake County

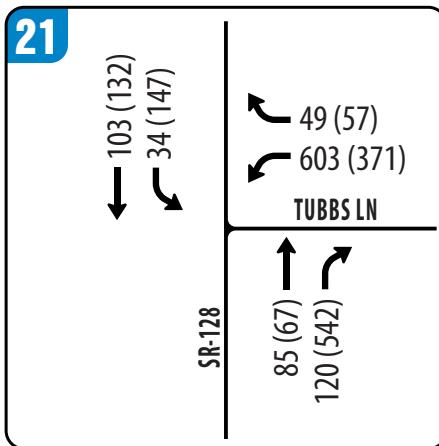
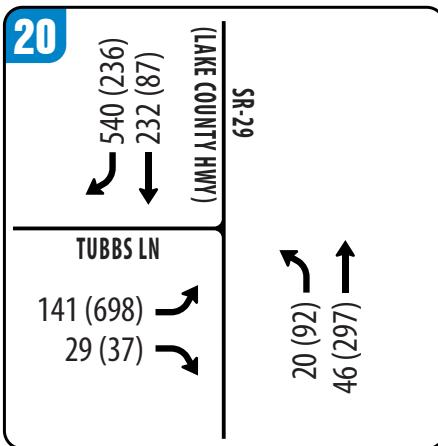
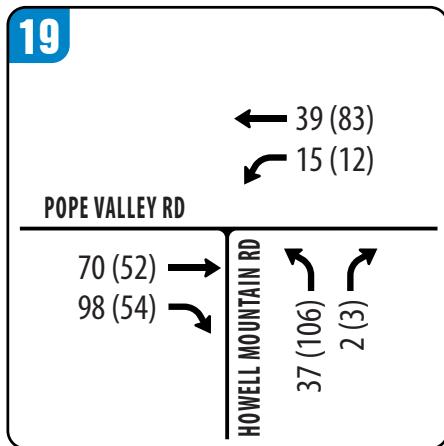
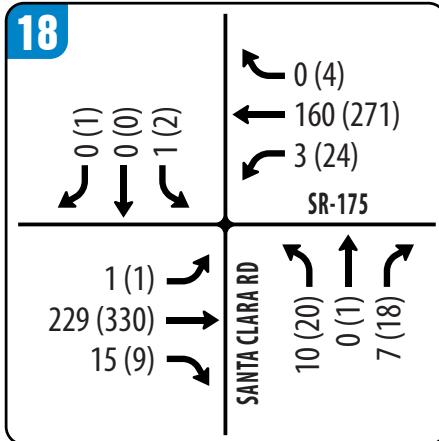
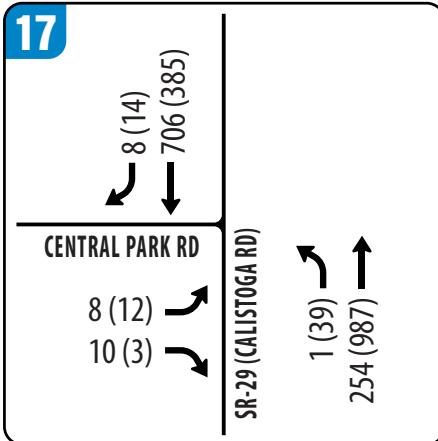
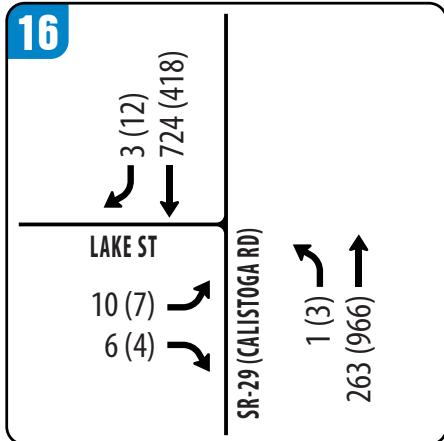
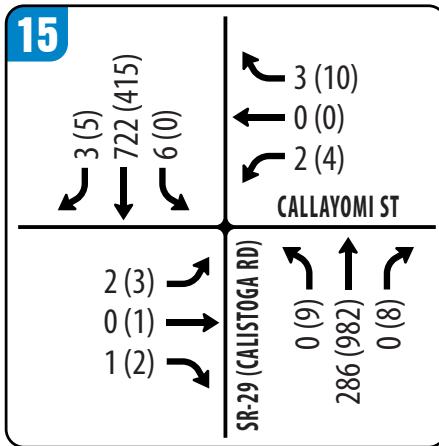
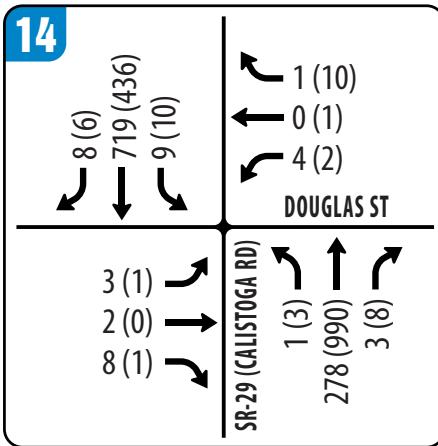
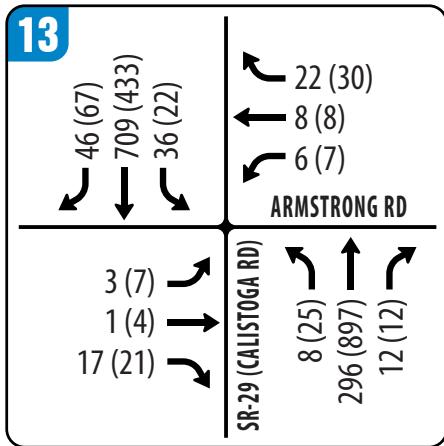


FIGURE 11 | CUMULATIVE PLUS PROJECT AM(PM) PEAK HOUR TRAFFIC VOLUMES – PAGE 2 OF 2
TRANSPORTATION IMPACT ANALYSIS

Maha Resort at Guenoc Valley
Lake County

TABLE 7
CUMULATIVE PLUS PHASE 1 INTERSECTION LEVEL OF SERVICE CONDITIONS – PAGE 1 OF 2

INTERSECTION		CONTROL	PEAK HOUR	CUMULATIVE		CUMULATIVE PLUS PROJECT	
				Delay	LOS	Delay	LOS
1	STATE ROUTE 29 / STATE ROUTE 53 & MAIN STREET	Signalized	AM	20.6	C	21.0	C
			PM	23.5	C	26.4	C
2	STATE ROUTE 29 & SPRUCE GROVE ROAD (NORTH) <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	1.6 36.9	A E	1.7 42.5	A E
			PM	2.0 > 50.0	A F	3.2 > 50.0	A F
3	STATE ROUTE 29 & SPRUCE GROVE ROAD (SOUTH) <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	9.1 > 50.0	A F	13.1 > 50.0	B F
			PM	21.7 > 50.0	C F	42.5 > 50.0	E F
4	STATE ROUTE 29 & HIDDEN VALLEY ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	14.1 > 50.0	B F	20.4 > 50.0	C F
			PM	17.8 > 50.0	C F	38.5 > 50.0	E F
5	STATE ROUTE 29 & HARTMANN ROAD	Roundabout	AM	19.5	C	24.5	C
			PM	> 50.0	F	> 50.0	F
6	STATE ROUTE 29 & GRANGE ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.7 > 50.0	A F	0.8 > 50.0	A F
			PM	1.9 > 50.0	A F	3.2 > 50.0	A F
7	STATE ROUTE 29 & BUTTS CANYON ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	1.2 21.3	A C	6.6 > 50.0	A F
			PM	5.0 42.9	A E	> 50.0 > 50.0	F F
8	BUTTS CANYON ROAD & BLACK OAK HILL DRIVE <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.3 9.6	A A	0.2 11.0	A B
			PM	0.2 10.0	A B	0.1 14.6	A B
9	BUTTS CANYON ROAD & OAT HILL DRIVE <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.4 9.5	A A	0.2 11.0	A B
			PM	0.1 10.0	A B	0.1 15.0	A C
10	STATE ROUTE 29 (CALISTOGA ROAD) & WARDLAW STREET	Signalized	AM	17.9	B	21.8	C
			PM	9.4	A	13.3	B
11	STATE ROUTE 29 (CALISTOGA ROAD) & YOUNG STREET <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	1.5 31.7	A D	1.6 36.5	A E
			PM	0.7 40.0	A E	0.7 > 50.0	A F
12	STATE ROUTE 29 (CALISTOGA ROAD) & STATE ROUTE 175 / MAIN STREET	Signalized	AM	10.1	B	11.2	B
			PM	13.2	B	19.5	B
13	STATE ROUTE 29 (CALISTOGA ROAD) & ARMSTRONG ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	1.3 18.2	A C	1.3 19.3	A C
			PM	1.9 30.8	A D	2.0 37.7	A E
14	STATE ROUTE 29 (CALISTOGA ROAD) & DOUGLAS STREET <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.4 21.3	A C	0.4 22.8	A C
			PM	0.4 26.3	A D	0.3 30.9	A D
15	STATE ROUTE 29 (CALISTOGA ROAD) & CALLAYOMI STREET <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.2 18.6	A C	0.2 21.4	A C
			PM	0.4 24.6	A C	0.5 34.6	A D

SOURCE: Abrams Associates, 2019

NOTE: Delay results are presented in terms of seconds per vehicle.

TABLE 7
CUMULATIVE PLUS PHASE 1 INTERSECTION LEVEL OF SERVICE CONDITIONS – PAGE 2 OF 2

INTERSECTION		CONTROL	PEAK HOUR	CUMULATIVE		CUMULATIVE PLUS PROJECT	
				Delay	LOS	Delay	LOS
16	STATE ROUTE 29 (CALISTOGA ROAD) & LAKE STREET <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.3 17.7	A C	0.3 18.6	A C
			PM	0.2 22.8	A C	0.2 26.2	A D
17	STATE ROUTE 29 (CALISTOGA ROAD) & CENTRAL PARK ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.3 16.0	A C	0.3 16.7	A C
			PM	0.4 27.1	A D	0.6 34.1	A D
18	STATE ROUTE 175 & SANTA CLARA ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.5 11.6	A B	0.5 12.0	A B
			PM	1.2 13.1	A B	1.1 14.1	A B
19	POPE VALLEY ROAD & HOWELL MOUNTAIN ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	1.8 9.7	A A	1.9 9.9	A A
			PM	4.0 10.0	A B	3.9 10.4	A B
20	STATE ROUTE 29 & TUBBS LANE <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	3.0 17.4	A C	3.4 18.8	A C
			PM	> 50.0 > 50.0	F F	> 50.0 > 50.0	F F
21	STATE ROUTE 128 & TUBBS LANE <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	48.8 > 50.0	E F	> 50.0 > 50.0	F F
			PM	> 50.0 > 50.0	F F	> 50.0 > 50.0	F F

SOURCE: Abrams Associates, 2019

NOTE: Delay results are presented in terms of seconds per vehicle.

AM and PM peak commute hours with the exception of Intersection #3 (State Route 29 at Spruce Grove Road South), Intersection #4 (State Route 29 at Hidden Valley Road), Intersection #5 (State Route 29 at Hartmann Road), Intersection #7 (State Route 29 at Butts Canyon Road), Intersection #20 (State Route 29 at Tubbs Lane) and Intersection #21 (State Route 128 at Tubbs Lane) which would all exceed their established thresholds. The addition of project traffic Intersections #3, #4, #5, and #7 would be considered *significant impacts*.

Mitigations to improve the operations at these intersections are discussed in Section 5. At Intersections #20 and #21 in Napa County the proposed project would not increase the traffic on the side streets by more than 10 percent at either of these intersections and therefore the project's contribution at these intersections would be considered *less-than-significant*.

4.8 Cumulative Plus Future Phases Traffic Capacity Conditions (Scenario 7)

Table 9 summarizes the LOS results for the Cumulative Plus Project (Year 2040) traffic conditions at each of the project study intersection with the addition of traffic from Phase 1 and also planned future phases of the project. The resulting project trip generation with the planned future phases as well as the cumulative build-out traffic volumes including future phases of the proposed project are included in the technical appendix to this report. As shown in **Table 8**, all of the signalized study intersections would continue to have acceptable conditions during the weekday AM and PM peak commute hours with the exception of Intersection #3 (State Route

TABLE 8
CUMULATIVE PLUS FUTURE PHASES INTERSECTION LEVEL OF SERVICE – PAGE 1 OF 2

INTERSECTION		CONTROL	PEAK HOUR	CUMULATIVE		CUMULATIVE PLUS PHASE 2	
				Delay	LOS	Delay	LOS
1	STATE ROUTE 29 / STATE ROUTE 53 & MAIN STREET	Signalized	AM	20.6	C	22.2	C
			PM	23.5	C	35.5	D
2	STATE ROUTE 29 & SPRUCE GROVE ROAD (NORTH) <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	1.6 36.9	A E	2.3 > 50.0	A F
			PM	2.0 > 50.0	A F	11.5 > 50.0	B F
3	STATE ROUTE 29 & SPRUCE GROVE ROAD (SOUTH) <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	9.1 > 50.0	A F	34.4 > 50.0	D F
			PM	21.7 > 50.0	C F	> 50.0 > 50.0	F F
4	STATE ROUTE 29 & HIDDEN VALLEY ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	14.1 > 50.0	B F	49.1 > 50.0	E F
			PM	17.8 > 50.0	C F	> 50.0 > 50.0	F F
5	STATE ROUTE 29 & HARTMANN ROAD	Roundabout	AM	19.5	C	43.4	E
			PM	> 50.0	F	> 50.0	F
6	STATE ROUTE 29 & GRANGE ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.7 > 50.0	A F	1.2 > 50.0	A F
			PM	1.9 > 50.0	A F	7.5 > 50.0	A F
7	STATE ROUTE 29 & BUTTS CANYON ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	1.2 21.3	A C	> 50.0 > 50.0	F F
			PM	5.0 42.9	A E	11.9 > 50.0	B F
8	BUTTS CANYON ROAD & BLACK OAK HILL DRIVE <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.3 9.6	A A	0.1 17.6	A C
			PM	0.2 10.0	A B	0.1 36.1	A E
9	BUTTS CANYON ROAD & OAT HILL DRIVE <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.4 9.5	A A	0.1 18.8	A C
			PM	0.1 10.0	A B	0.1 37.8	A E
10	STATE ROUTE 29 (CALISTOGA ROAD) & WARDLAW STREET	Signalized	AM	17.9	B	46.3	D
			PM	9.4	A	33.0	C
11	STATE ROUTE 29 (CALISTOGA ROAD) & YOUNG STREET <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	1.5 31.7	A D	2.1 > 50.0	A F
			PM	0.7 40.0	A E	1.1 > 50.0	A F
12	STATE ROUTE 29 (CALISTOGA ROAD) & STATE ROUTE 175 / MAIN STREET	Signalized	AM	10.1	B	17.5	B
			PM	13.2	B	41.9	D
13	STATE ROUTE 29 (CALISTOGA ROAD) & ARMSTRONG ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	1.3 18.2	A C	1.2 23.2	A C
			PM	1.9 30.8	A D	2.6 > 50.0	A F
14	STATE ROUTE 29 (CALISTOGA ROAD) & DOUGLAS STREET <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.4 21.3	A C	0.4 27.7	A D
			PM	0.4 26.3	A D	0.4 41.4	A E
15	STATE ROUTE 29 (CALISTOGA ROAD) & CALLAYOMI STREET <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.2 18.6	A C	0.3 27.7	A D
			PM	0.4 24.6	A C	0.8 > 50.0	A F

SOURCE: Abrams Associates, 2019

NOTE: Delay results are presented in terms of seconds per vehicle.

TABLE 8
CUMULATIVE PLUS FUTURE PHASES INTERSECTION LEVEL OF SERVICE – PAGE 2 OF 2

	INTERSECTION	CONTROL	PEAK HOUR	CUMULATIVE		CUMULATIVE + FUTURE PHASES	
				Delay	LOS	Delay	LOS
16	STATE ROUTE 29 (CALISTOGA ROAD) & LAKE STREET <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.3 17.7	A C	0.3 21.5	A C
			PM	0.2 22.8	A C	0.2 33.3	A D
17	STATE ROUTE 29 (CALISTOGA ROAD) & CENTRAL PARK ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.3 16.0	A C	0.4 19.6	A C
			PM	0.4 27.1	A D	0.9 > 50.0	A F
18	STATE ROUTE 175 & SANTA CLARA ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	0.5 11.6	A B	0.5 13.2	A B
			PM	1.2 13.1	A B	1.2 16.2	A C
19	POPE VALLEY ROAD & HOWELL MOUNTAIN ROAD <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	1.8 9.7	A A	2.0 10.3	A B
			PM	4.0 10.0	A B	4.1 11.3	A B
20	STATE ROUTE 29 & TUBBS LANE <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	3.0 17.4	A C	4.4 23.8	A C
			PM	> 50.0 > 50.0	F F	> 50.0 > 50.0	F F
21	STATE ROUTE 128 & TUBBS LANE <i>OVERALL DELAY</i> <i>SIDE STREET DELAY</i>	Side Street Stop	AM	48.8 > 50.0	E F	> 50.0 > 50.0	F F
			PM	> 50.0 > 50.0	F F	> 50.0 > 50.0	F F

29 at Spruce Grove Road South), Intersection #4 (State Route 29 at Hidden Valley Road), Intersection #5 (State Route 29 at Hartmann Road), Intersection #7 (State Route 29 at Butts Canyon Road), Intersection #20 (State Route 29 at Tubbs Lane) and Intersection #21 (State Route 128 at Tubbs Lane) which would all exceed their established thresholds. The addition of project traffic Intersections #3, #4, #5, and #7 would be considered *significant impacts*.

Mitigations to improve the operations at these intersections are discussed in Section 5. With the planned future phases the project would increase the side street approaches by more than 10 percent at Intersections #20 and #21 in Napa County which is considered a *significant impact*.

4.9 Transit Impacts

The project would not result in degradation of the level of service (or a significant increase in delay) on any roadway segments currently being utilized by bus transit in the area and, as such, no significant impacts to bus transit are expected. The proposed project not be expected to significantly impact the operating capacity any existing Lake Transit bus routes. The proposed project could potentially help support existing bus services with additional transit ridership and would not conflict with any transit plans or goals of the County or Lake Transit. Although the proposed project does have the potential to increase patronage on bus lines in the area, no significant effects on transit capacity are anticipated given that the additional ridership would be added primarily in the non-peak directions. As a result, the project would not be expected to result in any significant impacts to bus transit service in the area.

4.10 Pedestrians, Bicycles and Non-Motorized Vehicular Travel

The County does not have level of service standards for pedestrian or bicycle facilities. Nevertheless, use of existing facilities by the users of the project would not be expected to overcrowd those facilities or decrease their performance or safety. The project will add some pedestrians and bicyclists in the area but the volumes added would not be expected to significantly impact any existing facilities. In relation to the existing conditions, the proposed project would not cause substantial changes to the pedestrian or bicycle traffic in the area and would not significantly impact or require changes to the design of any existing bicycle or pedestrian facilities. However, consistent with the County and County General Plans, the project could be asked to contribute to additional pedestrian and bicycle improvement measures in the vicinity of the project.

4.11 Site Access and Circulation

No site circulation or access issues have been identified that would cause a traffic safety problem or any unusual traffic congestion or delay. Detailed LOS calculations for each of the proposed entrances under all plus project scenarios are included in the appendix. The existing intersections that would provide access to the project are forecast to continue to have acceptable operations with the existing side street stop controls. There are two options for a proposed new main primary entrance intersection: The Primary Access Road Option 1 entrance would be located approximately 2 miles south of the existing Langtry Winery Entrance. The Primary Access Road Option 2 would be located at McCain Canyon, approximately 2.6 miles south of the existing Langtry Winery Entrance.

Both options are forecast to have acceptable operations with side-street stop control. However, please note it is recommended that separate eastbound left turn pockets be provided all three resort entrances to ensure safe traffic operations. A review of the locations and designs for the proposed new main entrance intersection (under both access options) indicated the intersection would operate safely as designed with the proposed widening for the right and left-turn auxiliary lanes and the associated shoulder improvements. Both locations would meet the established sight distance standards, in part due to the proposed grading and vegetation removal adjacent to the roadway which would be associated with the planned widening for the intersection turn lanes. As an additional improvement measure for the entrance intersection under Primary Access Road Option 2 it is recommended that intersection warning signs be placed on both of the Butts Canyon Road approaches. As per the California Manual of Uniform Traffic Control Devices (CAMUTCD) the sign code for a T-intersection warning sign is W2-2. To further ensure motorists have advance warning of the new intersection, the intersection warning signs could be supplemented with the optional flashing yellow beacons, as specified in the CAMUTCD.

4.12 Parking

Parking shortages are not considered to be a significant impact under CEQA and any analysis of parking is provided for planning and informational purposes only. The proposed project would provide an adequate supply of off-street parking based on the County's requirements. The project is currently proposing to meet the County's parking requirements and subject to final County approval of the proposed parking plan there would be no significant parking impacts expected to the surrounding properties.

4.13 Vehicle Miles Traveled

One performance measure that can be used to quantify the travel from a project is vehicle miles traveled (VMT). VMT is a particularly useful metric for evaluating the impacts of growth on greenhouse gas (GHG) emissions because it can be used to estimate fuel consumption by motor vehicles. Increases in VMT cause proportional increases in greenhouse gas emissions and air pollution. This section presents the extent of the VMT-related impacts caused by the Project. The County does not currently have adopted CEQA thresholds for VMT analysis; therefore, this information is provided for informational purposes only.

One limitation of VMT measurements is they cannot be easily observed or measured and therefore must be estimated. Methods do not exist that can reliably measure the trip distances of all vehicles on a given day. VMT is typically an output from area wide travel demand models and is calculated based on the number of vehicles multiplied by the distance traveled by each vehicle. As such, the VMT estimate is dependent on the level of detail in the travel demand model. The volume of traffic and distance traveled depends on land use types, density, and location as well as the supporting transportation system, including availability of various travel modes. A travel demand model attempts to represent this relationship when forecasting vehicle trips and VMT. This analysis uses the Metropolitan Transportation Commission (MTC) Travel Model to estimate VMT per capita for the project. Neighborhoods within various jurisdictions are expressed geographically in transportation analysis zones, or TAZs. TAZs are used in transportation planning models for transportation analysis and other planning purposes.

Based on the MTC Travel Model, the Bay Area regional average daily VMT per capita is estimated to be 15.0 in the year 2020 and 13.8 in the year 2040. Because the homes built by the project would be similar to other residential developments in the area, project residents are estimated to have similar travel behavior as other residents in the TAZ closest to the project; thus, the VMT per capita estimated by the MTC Model for the TAZ closest to the project site would represent the approximate VMT per capita that would be generated by the project.

Table 9 summarizes the 2020 and 2040 VMT for TAZ 1312, the TAZ which is closest where to the project is located, and provides a comparison to regional and county wide averages. It is expected that, as shown for the TAZ, the project would have a higher VMT per capita than the Lake County or Bay Area region averages under both 2020 and 2040 conditions because,

TABLE 9
DAILY VEHICLE MILES TRAVELED PER CAPITA

<i>Area</i>	<i>2020</i>	<i>2040</i>
TAZ 1312 (Project)	37.5	34.6
Lake County	31.1	30.1
Bay Area	15.0	13.8

SOURCE: MTC Model results at analytics.mtc.ca.gov/foswiki>Main\PlanBayAreaVmtPerCapita; accessed September, 2019.

as stated above, the homes built by the project would be similar to existing developments in the area. The VMT would also be higher because of the nature of the project site. For example, the project site is lacking in commercial and retail services for residents within walking distance and the project site is not located close to bus stops served by public transit. The VMT generated by the Project could be substantially reduced by implementation of the required Transportation Demand Management (TDM) program.

4.14 Transportation Demand Management Program

In September 2010, the California Air Resources Board (ARB or Board) set passenger vehicle greenhouse gas (GHG) emission reduction targets for 2020 and 2035 for each of the 18 Metropolitan Planning Organization (MPO) regions in California under the Sustainable Communities and Climate Protection Act of 2008 (SB 375). Lake County supports these goals by implementing policies that require new projects achieve a reduction in the number of peak hour drive-alone commute vehicle trips. The project transportation demand management (TDM) program requested by the County is intended to reduce the total vehicle miles traveled (VMT) by motorists in the project area. Please note that reductions in VMT are generally considered to translate directly into reduced GHG's.

Proposed TDM Strategies - The following is a summary of strategies that are recommended to be incorporated into the project:

Private Shuttle Service – There are currently no plans for Lake Transit to run buses along Butts Canyon Road near the project site and the nearest bus stops are about six miles away in Middletown. While it is possible Lake Transit might consider adding a stop on Butts Canyon Road in the future to serve project employees, it is our understanding that there is no funding available for it at this time. Alternatively, the project could potentially provide a frequent direct

weekday shuttle service specifically for employees during the peak morning and evening commute periods. This could operate between the project site and off-site work force housing with a stop at the Lake Transit bus transfer point in Middletown. Please note shuttles would need to be fully accessible to passengers using wheelchairs. It is recommended the applicant also explore providing a real-time smart-phone app that tracks arrivals to make shuttle use more reliable and convenient. Bus service for patrons of the project has been assumed as part of this analysis. The current assumption is that regular bus service to and from San Francisco and Sacramento will accommodate approximately 40% of resort patrons.

Carpool and Ride-Matching Assistance Program – The management shall offer personalized ride-matching assistance to pair employees interested in forming commute carpools. As an enhancement, management may consider using specific services such as ZimRide, TwoGo by SAP, Enterprise RideShare, or 511.org RideShare.

Preferential Parking for Carpoolers – The management shall offer preferential carpool parking for eligible commuters. To be eligible for carpool parking, the carpool shall consist of three or more people. The management shall monitor and provide adequate carpool spaces to meet or exceed potential demand.

Dedicated Parking Spaces for Car Share Services – Setting aside parking spaces to be dedicated for use by car share services to serve employees. This could reduce parking demand and GHG emissions associated with the project by providing more flexibility for employees who otherwise utilize alternate modes. The availability of car share services within a project can potentially reduce the demand for employees to own their own cars. A review of over 25 studies from Europe and the U.S. where car sharing services are available, found that in North America, on average, 20% of respondents gave up a privately owned vehicle and 40% avoided purchasing one, which results in an average of five privately owned vehicles replaced per every car sharing vehicle.² However, it should be noted that this data is for residential projects and the effects, while still significant, would most likely be less for a commercial project.

On Site Sales of Transit Passes – The building management shall offer direct on-site sales of transit passes purchased and sold at a bulk group rate.

TDM Coordinator – Management shall designate a “TDM coordinator” to coordinate, monitor and publicize TDM activities. The effectiveness of providing a TDM Coordinator on automobile ownership is not known at this time. It is assumed the applicant may instruct the management company to designate their on-site manager as the TDM coordinator.

² *Car Sharing: Where and How it Succeeds*, TCRP Report 108, Transportation Cooperative Research Program, Washington D.C., 2005.

Transportation and Commute Information Kiosks - An information board or kiosk will be located in a common gathering area (e.g., lobby, employee entrance, break, or lunch room). The kiosk will contain transportation information, such as Emergency Ride Home (ERH), transit schedules, bike maps, and 511 ride-matching. Information will be updated periodically by the designated Transportation Coordinator (TC).

Tenant Performance and Lease Language – TDM Requirements - For all tenants, the applicant will draft lease language or side agreements that require the identification of a designated contact responsible for compliance and implementation of the TDM program.

Tenant/Employer Commute Program Training - As needed and applicable, the applicant or property management will provide individual tenants of the project with initial TDM (and commute) program training, commute program start-up assistance. The overarching goals of this support function are to reduce commute trips for employees and assist with employee marketing and outreach.

Employee Transportation Brochure - At the time of occupancy, all employees will be provided with an Employee Transportation Brochure regarding the Commute Program. This brochure will include (but not be limited to) information about shuttle service, carpool parking, transit opportunities, ride-matching services, bicycle routes, and emergency rides home.

5) MITIGATION

The following is a list of project impacts and proposed mitigation measures to address the transportation impacts of the project. Based on a detailed analysis of traffic operations with and without each of the proposed mitigations, implementation of the following mitigation measures would reduce the project impacts to a *less-than-significant* level. Detailed LOS calculations and a summary table verifying the mitigations would reduce the impacts to a less than significant level are included in the appendix to this report. The impacts at Intersections #20 and #21 in Napa County involve mitigations that cannot be guaranteed as the improvements would be outside the jurisdiction of Lake County. Therefore, the impacts at these two intersections (which occur under future phases only) would be considered *significant and unavoidable*.

Impact #1 Impacts to intersection operations - The project would contribute to LOS operations exceeding the established standards at the following six intersections:

State Route 29 at Spruce Grove Road South (Intersection #3)

State Route 29 at Hidden Valley Road (Intersection #4)

State Route 29 at Hartmann Road (Intersection #5)

State Route 29 at Butts Canyon Road (Intersection #7)

State Route 29 at Tubbs Lane (Intersection #20) – Napa County

State Route 128 at Tubbs Lane (Intersection #21) – Napa County

The addition of traffic from the proposed project would contribute to these six intersections exceeding the established LOS standards. However, without implementation of the recommended mitigations below, the development of the proposed project would result in a potentially significant impact to the LOS and queuing at the above listed intersections. With the exception of Intersections #20 and #21 the following mitigation measures would reduce the impacts at these intersections to a less-than-significant level in all of the plus project scenarios.

Mitigation Measures

Prior to construction the project would mitigate the above-identified impacts by paying a proportionate share of the construction costs of the following improvement, subject to County approval. The intersection mitigations required for the project to meet the established LOS standards are:

MM 1 (a) State Route 29 at Spruce Grove Road South – Installation of a three-way traffic signal with crosswalks.
(Scenario 6 - Cumulative Plus Phase 1)

- MM 1 (b) State Route 29 at Hidden Valley Road – Installation of a four-way traffic signal with crosswalks.
(Scenario 6 - Cumulative Plus Phase 1)
- MM 1 (c) State Route 29 at Hartmann Road – Expansion of the existing roundabout or installation of a three-way traffic signal.
(Scenario 6 - Cumulative Plus Phase 1)
- MM 1 (d) State Route 29 at Butts Canyon Road – Installation of a three-way traffic signal with crosswalks.
(Scenario 2 - Existing Plus Phase 1)
- MM 1 (e) State Route 29 at Tubbs Lane – Installation of a three-way traffic signal with crosswalks.
(Scenario 7 - Cumulative Plus Future Phases)
- MM 1 (f) State Route 128 at Tubbs Lane – Installation of a three-way traffic signal with crosswalks.
(Scenario 7 - Cumulative Plus Future Phases)

Impact #2 Impacts related to conflicts with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or potential decreases to the performance or safety of such facilities.

The project would not result in degradation of the level of service (or a significant increase in delay) on any roadway segments currently being utilized by bus transit in the area and would not increase ridership beyond existing capacity. As such, no significant impacts to bus transit are expected. In addition, the project would not significantly impact or change the design of any existing transportation facility or create any new safety problems in the area. Therefore, based on the County's significance criteria the project's impacts on alternative transportation would be considered less than significant and no mitigations would be required.

Mitigation Measure(s)

None required.

Impact #3 Demolition and construction activities associated with the proposed project would result in an increase in traffic to and from the site and could lead to unsafe conditions near the project site.

The increase in traffic as a result of demolition and construction activities associated with the proposed project has been quantified assuming a worst-case single phase construction period of 36 months.

Heavy Equipment

Approximately twenty pieces of heavy equipment are estimated to be transported on and off the site each month throughout the demolition and construction of the proposed project. Heavy equipment transport to and from the site could cause traffic impacts in the vicinity of the project site during construction. However, each load would be required to obtain all necessary permits, which would include conditions. Prior to issuance of grading and building permits, the project applicant would be required to submit a Traffic Control Plan.

The requirements within the Traffic Control Plan include, but are not limited to, the following: truck drivers would be notified of and required to use the most direct routes , as determined by the County Engineering Department; all site ingress and egress would occur only at the main driveways to the project site and construction activities may require installation of temporary (or ultimate) traffic signals as determined by the County Engineer; specifically designated travel routes for large vehicles would be monitored and controlled by flaggers for large construction vehicle ingress and egress; warning signs indicating frequent truck entry and exit would be posted on Butts Canyon Road; and any debris and mud on nearby streets caused by trucks would be monitored daily and may require instituting a street cleaning program. In addition, the ten loads of heavy equipment being hauled to and from the site each month would be short-term and temporary.

Employees

The weekday work is expected to begin around 7:00 AM and end around 4:00 PM. The construction worker arrival peak would occur between 6:30 AM and 7:30 AM, and the departure peak would occur between 4:00 PM and 5:00 PM. These peak hours are slightly before the countywide commute peaks. It should be noted that the number of trips generated during construction would not only be temporary, but would also be substantially less than the proposed project at buildout. Based on past construction of similar projects, construction workers could require parking for up to 250 vehicles during the peak construction period. Additionally, deliveries, visits, and other activities may generate peak non-worker parking demand of 20 to 25 trucks and automobiles per day. Therefore, up to 275 vehicle parking spaces may be required during the peak construction period for the construction employees. Furthermore, the Traffic Control Plan requires construction employee parking be provided on the project site to eliminate conflicts with nearby residential areas. Because the construction of the project can be staggered so that employee parking demand is met by using on-site parking, the impacts of construction-related employee traffic and parking are considered less-than-significant.

Construction Material Import/Export

The project would also require removal of existing debris as well as the importation of construction material, including raw materials for the building pads, the buildings, the parking area, and landscaping. During the maximum peak construction period, it is estimated material import and export could generate approximately 150 truck trips per day. Furthermore, under the provisions of the Traffic Control Plan, if importation and exportation of material becomes a traffic nuisance, then the County Engineer may limit the hours the activities can take place.

Traffic Control Plan

The Traffic Control Plan would indicate how parking for construction workers would be provided during construction and ensure a safe flow of traffic in the project area during construction. This analysis assumed construction of the entire project in one phase to identify the potential worst-case traffic effects. If the project is built in phases over time, the effects of each phase will be the same or less. Each phase will be subject to a Traffic Control Plan and oversight by the County Engineer. The last phase may require added worker parking measures, depending on the circumstances, as there will not be any remaining vacant land for parking.

Therefore, the demolition and construction activities associated with the proposed project or its individual phases would not lead to noticeable congestion in the vicinity of the site or the perception of decreased traffic safety resulting in a ***less-than-significant*** impact.

Mitigation Measure(s)

None required.

Impact #4 Impacts related to site access and circulation.

The proposed project would have its main entrance Butts Canyon Road. Two secondary access points will also be provided. The secondary entrance would be located to the west of the main entrance. As discussed above, the proposed mitigation for the project's potential safety impacts at the main access intersection and the secondary entrances is the installation of separate left turn pockets. Based on a review of the proposed site plan it was determined that the site circulation should function well and would not cause any safety or operational problems. The project site design has been required to conform to County design standards and is not expected to create any significant impacts to pedestrians, bicyclists or traffic operations. Therefore, impacts related to site access and circulation to the proposed project would be ***less-than-significant*** with implementation of the following mitigation measure.

Mitigation Measure

MM 1 (a) Butts Canyon Road at the Three Project Entrances – Installation of 250-foot-long left turn pockets at all three project entrances.

Impact #5 Impacts regarding emergency vehicle access on and surrounding the proposed project site.

Sufficient emergency access is determined by factors such as number of access points, roadway width, and proximity to fire stations. The land use plan for the proposed project would include three entrances on Butts Canyon Road. All lane widths within the project would meet the minimum width that can accommodate an emergency vehicle; therefore, the width of the internal roadways would be adequate. In addition, with the proposed mitigations the addition of traffic from project traffic would not result in any significant changes to emergency vehicle response times in the area. Therefore, development of the project is expected to have ***less-than-significant*** impacts regarding emergency vehicle access.

Mitigation Measure(s)

None required.



Transportation Impact Analysis Technical Appendix
Maha Resort at Guenoc Valley
Lake County

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APPENDIX TIA

TRAFFIC IMPACT ANALYSIS

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- 5.) Figure A2 – Cumulative Plus Future Phases Traffic Volumes
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TABLE A1
CUMULATIVE PLUS PHASE 1 MITIGATED LEVEL OF SERVICE CONDITIONS

INTERSECTION		CONTROL	PEAK HOUR	CUMULATIVE PLUS PHASE 1	
				Delay	LOS
3	STATE ROUTE 29 & SPRUCE GROVE ROAD (SOUTH)	Signalized	AM	7.3	A
			PM	8.4	A
4	STATE ROUTE 29 & HIDDEN VALLEY ROAD	Signalized	AM	14.9	B
			PM	24.9	C
5	STATE ROUTE 29 & HARTMANN ROAD	Signalized	AM	15.0	B
			PM	16.1	B
7	STATE ROUTE 29 & BUTTS CANYON ROAD	Signalized	AM	8.6	A
			PM	34.2	C
20	STATE ROUTE 29 & TUBBS LANE	Signalized	AM	9.1	A
			PM	25.0	C
21	STATE ROUTE 128 & TUBBS LANE	Signalized	AM	9.8	B
			PM	18.2	B

SOURCE: Abrams Associates, 2019

NOTES: Intersection LOS is based on delay which is presented in terms of seconds per vehicle.

TABLE A2
CUMULATIVE PLUS PHASE 2 MITIGATED LEVEL OF SERVICE CONDITIONS

INTERSECTION		CONTROL	PEAK HOUR	CUMULATIVE PLUS PHASE 2	
				Delay	LOS
3	STATE ROUTE 29 & SPRUCE GROVE ROAD (SOUTH)	Signalized	AM	8.3	A
			PM	14.3	B
4	STATE ROUTE 29 & HIDDEN VALLEY ROAD	Signalized	AM	16.4	B
			PM	40.4	D
5	STATE ROUTE 29 & HARTMANN ROAD	Signalized	AM	19.2	B
			PM	24.4	C
7	STATE ROUTE 29 & BUTTS CANYON ROAD	Signalized	AM	14.6	B
			PM	78.6	E
20	STATE ROUTE 29 & TUBBS LANE	Signalized	AM	11.1	B
			PM	47.1	D
21	STATE ROUTE 128 & TUBBS LANE	Signalized	AM	11.0	B
			PM	30.2	C

SOURCE: Abrams Associates, 2019

NOTES: Intersection LOS is based on delay which is presented in terms of seconds per vehicle.



FIGURE A1 | ACCIDENT DATA FOR BUTTS CANYON ROAD (2014-2019) – PAGE 1 of 3
TRANSPORTATION IMPACT ANALYSIS
Maha Resort at Guenoc Valley
Lake County



Abrams Associates
TRAFFIC ENGINEERING, INC.



FIGURE A1 | ACCIDENT DATA FOR BUTTS CANYON ROAD (2014-2019) – PAGE 2 of 3
TRANSPORTATION IMPACT ANALYSIS
Maha Resort at Guenoc Valley
Lake County



Abrams Associates
TRAFFIC ENGINEERING, INC.

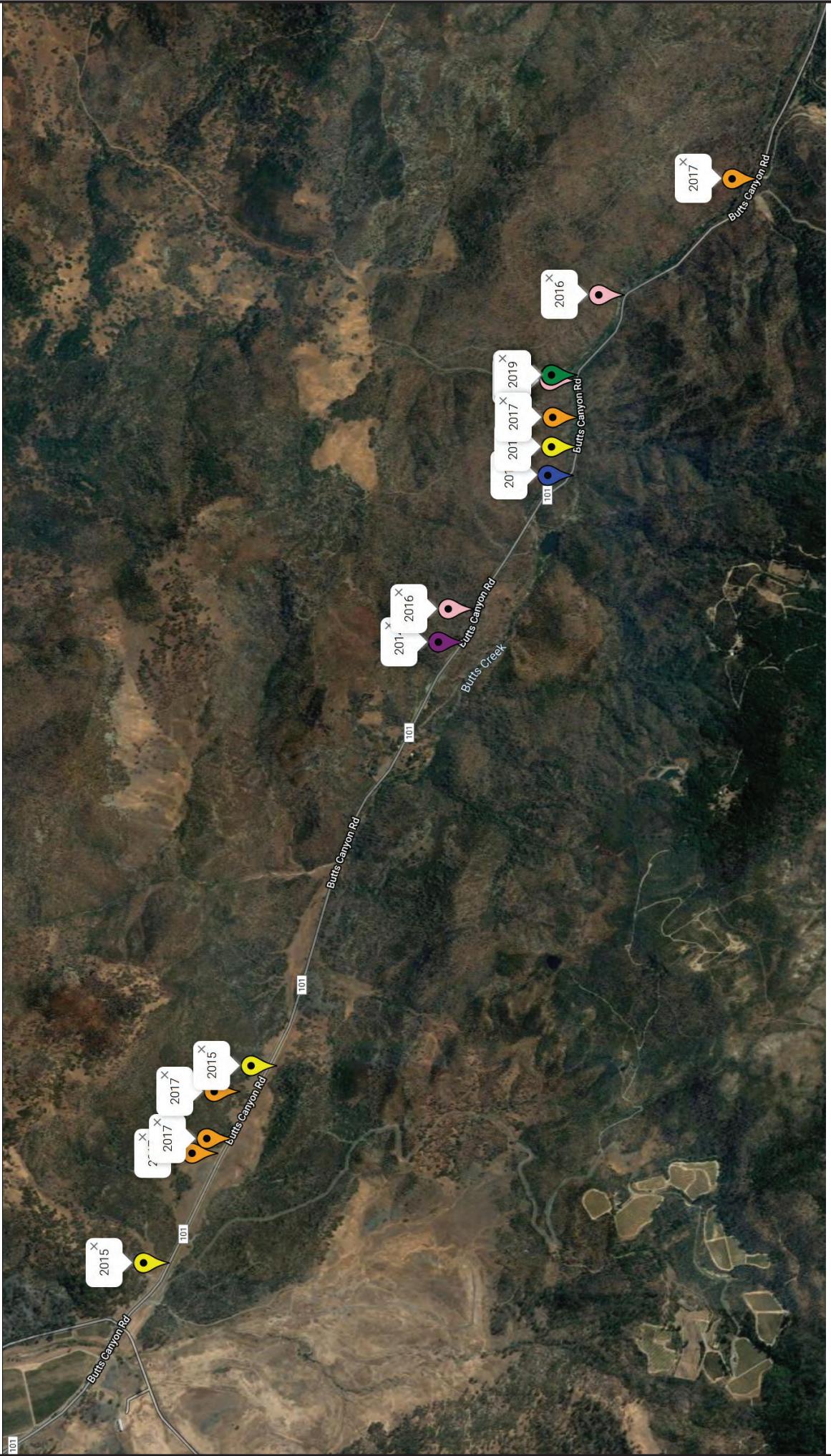


FIGURE A1 | ACCIDENT DATA FOR BUTTS CANYON ROAD (2014-2019) – PAGE 3 of 3
TRANSPORTATION IMPACT ANALYSIS
Maha Resort at Guenoc Valley
Lake County

Butts Canyon Road Accident Summary

2019-2014

CASE ID	COLLISION DATE	COLLISION TIME	PRIMARY RD	SECONDARY RD	DISTANCE	DIRECTION	INTERSECTION	WEATHER ¹	TYPE OF COLLISION	COLLISION SEVERITY	NUMBER KILLED	NUMBER INJURED	PCF VIOLATION CATEGORY	MOTOR VEHICLE INVOLVED WITH	ALCOHOL INVOLVED
2019															
90920438	20190126	1530 BUTTS CANYON RD	GUENOC RD		14256 E	N	Clear	Overturned	Injury (Complaint of Pain)	0	1	Improper Turning	Non-Collision	0	
90920576	20190126	1531 BUTTS CANYON RD	GUENOC RD		14256 E	N	Clear	Overturned	Injury (Complaint of Pain)	0	1	Improper Turning	Non-Collision	Y	
90980477	20190426	2500 BUTTS CANYON RD	SR-29		3168 E	N	Clear	Hit Object	Property Damage Only	0	0	Improper Turning	Fixed Object	0	
90984418	20190427	1042 BUTTS CANYON RD	NAPA COUNTY LINE		2640 N	N	Clear	Overturned	Property Damage Only	0	0	Improper Turning	Non-Collision	0	
90989183	20190506	100 BUTTS CANYON RD	SR-29		2112 E	N	Clear	Other	Property Damage Only	0	0	Unsafe Speed	Animal	0	
90994211	20190511	1130 BUTTS CANYON ROA	OAT HILL ROAD		80 W	N	Clear	Hit Object	Injury (Other Visible)	0	1	Improper Turning	Fixed Object	0	
2018															
90784855	20180803	556 BUTTS CANYON RD.	NAPA CO. LN.		2640 W	N	Clear	Hit Object	Injury (Complaint of Pain)	0	1	Improper Turning	Fixed Object	0	
90848041	20181007	2500 BUTTS CANYON RD	OAT HILL ROAD		3168 E	N	Clear	Hit Object	Property Damage Only	0	0	Improper Turning	Fixed Object	0	
90860257	20181105	1630 BUTTS CANYON RD.	SNELL VALLEY RD.		10032 W	N	Clear	Hit Object	Injury (Severe)	0	1	Improper Turning	Fixed Object	0	

Butts Canyon Road Accident Summary

2019-2014

CASE ID	COLLISION DATE	COLLISION TIME	PRIMARY RD	SECONDARY RD	DISTANCE	DIRECTION	INTERSECTION	WEATHER ¹	TYPE OF COLLISION	COLLISION SEVERITY	NUMBER KILLED	NUMBER INJURED	PCF VIOLATION CATEGORY	MOTOR VEHICLE INVOLVED WITH	ALCOHOL INVOLVED
2017															
90370358	20170111	558 BUTTS CANYON RD.	OAT HILL RD.		2640	W	N	Cloudy	Hit Object	Property Damage Only	0	0	Improper Turning	Fixed Object	0
90395825	20170213	1010 BUTTS CANYON ROA	OAT HILL ROAD		21120	E	N	Clear	Hit Object	Injury (Complaint of Pain)	0	1	Unsafe Speed	Fixed Object	0
90447553	20170423	35 BUTTS CANYON RD	OAT HILL ROAD		60	W	N	Clear	Hit Object	Property Damage Only	0	0	Improper Turning	Fixed Object	0
90457032	20170508	1515 BUTTS CANYON ROA	OAT HILL ROAD		11616	E	N	Clear	Hit Object	Property Damage Only	0	0	Improper Turning	Fixed Object	0
90462708	20170519	2330 BUTTS CANYON RD	SNELL VALLEY RD		5280	N	N	Clear	Hit Object	Property Damage Only	0	0	Improper Turning	Fixed Object	0
													Driving or Bicycling		
90486684	20170617	1735 BUTTS CANYON ROA	SR-29		6336	E	N	Clear	Hit Object	Injury (Severe)	0	1	Under the Influence of Alcohol or Drug	Fixed Object	Y
90499737	20170708	1515 BUTTS CANYON ROA	OAT HILL ROAD		19536	E	N	Clear	Overturned	Property Damage Only	0	0	Improper Turning	Non-Collision Driving or Bicycling	0
90513667	20170615	2056 BUTTS CANYON RD	SR-29		8448	E	N	Clear	Hit Object	Fatal	1	0	Under the Influence of Alcohol or Drug	Fixed Object	Y
													Driving or Bicycling		
90517663	20170722	1921 BUTTS CANYON RD	BLACK OAK DR		4459	E	N	Clear	Hit Object	Property Damage Only	0	0	Under the Influence of Alcohol or Drug	Fixed Object	Y
90536897	20170823	1555 BUTTS CANYON RD	GUENOC RD		2640	E	N	Clear	Hit Object	Property Damage Only	0	0	Improper Turning	Fixed Object	0
90541984	20170901	2200 BUTTS CANYON ROA	OAT HILL ROAD		100	W	N	Clear	Hit Object	Property Damage Only	0	0	Improper Turning	Fixed Object	0
90548100	20170907	758 BUTTS CANYON RD	LAKE / NAPA COUNT		2112	W	N	Cloudy	Overturned	Injury (Severe)	0	1	Improper Turning	Non-Collision	0
90553319	20170916	1250 BUTTS CANYON RD	OAT HILL ROAD		3696	W	N	Clear	Hit Object	Fatal	1	0	Improper Turning	Fixed Object	0
													Driving or Bicycling		
90632174	20171229	1308 BUTTS CANYON ROA	OAT HILL ROAD		14784	E	N	Clear	Overturned	Property Damage Only	0	0	Under the Influence of Alcohol or Drug	Non-Collision	Y
2016															
90144782	20160318	1300 BUTTS CANYON RD	SNELL VALLEY ROAD		8448	W	N	Clear	Overturned	Injury (Severe)	0	1	Unsafe Speed	Non-Collision	0
													Driving or Bicycling		
90207412	20160612	2357 BUTTS CANYON RD	GUENOC RD		10560	E	N	Clear	Overturned	Property Damage Only	0	0	Under the Influence of Alcohol or Drug	Non-Collision	Y
90217867	20160629	1053 BUTTS CANYON RD	OAT HILL ROAD		27984	E	N	Clear	Overturned	Injury (Other Visible)	0	1	Improper Turning	Non-Collision	0
90218528	20160704	1938 BUTTS CANYON RD	OAT HILL RD		528	S	N	Clear	Hit Object	Property Damage Only	0	0	Improper Turning	Fixed Object	Y

Butts Canyon Road Accident Summary

2019-2014

CASE ID	COLLISION DATE	COLLISION TIME	PRIMARY RD	SECONDARY RD	DISTANCE	DIRECTION	INTERSECTION	WEATHER ¹	TYPE OF COLLISION	COLLISION SEVERITY	NUMBER KILLED	NUMBER INJURED	PCF VIOLATION CATEGORY	MOTOR VEHICLE INVOLVED WITH	ALCOHOL INVOLVED
2015															
6959205	20150614	1033 BUTTS CANYON RD	OAK HILL RD	2112 W	N	Clear	Rear End	Injury (Severe)	0	1	Unsafe Speed	Other Motor Vehicle	0		
6962838	20150607	613 BUTTS CANYON RD	LOCONOMI RD	5280 E	N	Clear	Overturned	Property Damage Only	0	0	Improper Turning	Non-Collision	0		
6982200	20150704	900 BUTTS CANYON RD	NAPA COUNTY LINE	5280 N	N	Clear	Overturned	Property Damage Only	0	0	Improper Turning	Non-Collision	0		
90015363	20150827	600 BUTTS CANYON RD	OAT HILL ROAD	2640 E	N	Clear	Hit Object	Property Damage Only	0	0	Improper Turning	Fixed Object	0		
90035870	20150927	1800 BUTTS CANYON ROA	GUENOC ROAD	7392 E	N	Clear	Hit Object	Property Damage Only	0	0	Under the Influence of Alcohol or Drug	Fixed Object	Y		
90090746	20151223	1345 BUTTS CANYON ROA	OAT HILL ROAD	2640 E	N	Clear	Hit Object	Property Damage Only	0	0	Improper Turning	Fixed Object	0		
2014															
6430351	20140318	1520 BUTTS CANYON RD	OAT HILL RD	3168 E	N	Clear	Overturned	Injury (Complaint of Pain)	0	1	Unsafe Speed	Non-Collision	0		
6461779	20140415	1535 BUTTS CANYON RD	GUENOC WINERY RD	8448 E	N	Clear	Hit Object	Property Damage Only	0	0	Improper Turning	Fixed Object	0		
6562404	20140630	1655 BUTTS CANYON RD	LOCONOMI RD	528 W	N	Clear	Hit Object	Property Damage Only	0	0	Unsafe Speed	Fixed Object	0		
6599867	20140802	1800 BUTTS CANYON RD	BLACK OAK HILL DR	1056 E	N	Clear	Rear End	Injury (Complaint of Pain)	0	2	Unsafe Speed	Other Motor Vehicle	Y		

Table A-3
MAHA RESORT AT GUENOC VALLEY
Trip Generation Calculations for Future Phases

Land Use	ITE Code	Size	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Retail Trip Rates	820		37.75	0.58	0.36	0.94	1.83	1.98	3.81
Retail Trip Generation		16,000 sq. ft.	604	9	6	15	29	32	61
Reduction for Internal Trips (50%)			302	5	3	8	14	16	30
Net New Off-Site Retail Trips			302	5	3	8	15	16	31
Restaurant Trip Rates	931		2.60	0.08	0.07	0.15	0.19	0.10	0.29
Restaurant Trip Generation		50 seats	130	4	4	8	10	5	15
Reduction for Internal Trips (50%)			65	2	2	4	4	3	7
Net New Off-Site Restaurant Trips			65	2	2	4	6	2	8
Resort Hotel Trip Rates	330		5.71	0.23	0.09	0.32	0.18	0.23	0.41
Resort Hotel Trip Generation		565 units ¹	3,226	130	51	181	102	130	232
Reduction for Arrivals by Shuttle (45%) ²			1,452	58	23	81	46	58	104
Reduction for Forecast Occupancy Rates (19%) ³			337	14	5	19	11	13	24
Net New Off-Site Hotel and Villa Trips			1,437	58	23	81	45	59	104
Winery Trip Rates	970		45.96	1.45	0.62	2.07	3.66	3.65	7.31
Winery Trip Generation		5,000 sq. ft.	230	7	3	10	18	18	37
Reduction for Internal Trips (50%)			115	3	2	5	9	9	18
Net New Off-Site Winery Trips			115	4	1	5	9	9	18
Agricultural Trip Rates	110		4.96	0.62	0.08	0.70	0.08	0.55	0.63
Agricultural Trip Generation		25,000 sq. ft.	124	15	3	18	2	14	16
Reduction for Internal and Shuttle Trips (66%)			82	10	2	12	1	9	10
Net New Off-Site Agricultural Trips			42	5	1	6	1	5	6
Golf Course Trip Rates	430		30.38	1.39	0.37	1.76	1.54	1.37	2.91
Golf Course Trip Generation		18 holes	547	25	7	32	28	25	53
Reduction for Internal Trips (66%)			361	17	4	21	19	16	35
Net New Off-Site Golf Course Trips			186	9	2	11	9	9	18
Single Family Home Rates			8.42	0.18	0.53	0.71	0.60	0.36	0.96
Single Family Home Trips		1,000 units	8,420	180	530	710	600	360	960
Reduction for Internal Trips (30%)			2,526	55	159	213	180	108	288
Net New Single Family Trips			5,894	125	371	496	420	252	672
<i>Subtotals for the Second Phase</i>			8,041	208	402	610	505	352	857
ON-SITE WORK FORCE HOUSING									
ITE Low-Rise Apartment Trip Rates (per unit)	220		7.32	0.11	0.35	0.46	0.35	0.21	0.56
Work Force Housing Trip Generation		200 units ⁴	732	11	35	46	35	21	56
Reduction for Internal Trips (66%)			483	7	23	30	23	14	37
Net New Off-Site Work Force Housing Trips			249	4	12	16	12	7	19
SUBTOTALS FOR THE SECOND PHASE			8,290	212	414	626	517	359	876
SUBTOTALS FOR THE FIRST PHASE			6,493	110	110	220	306	225	531
TOTAL TRIPS FROM BOTH PHASES			14,783	322	524	846	823	584	1,407

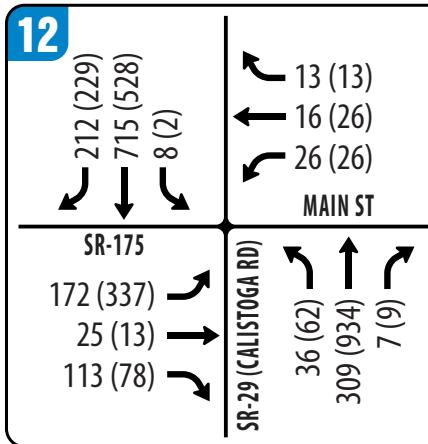
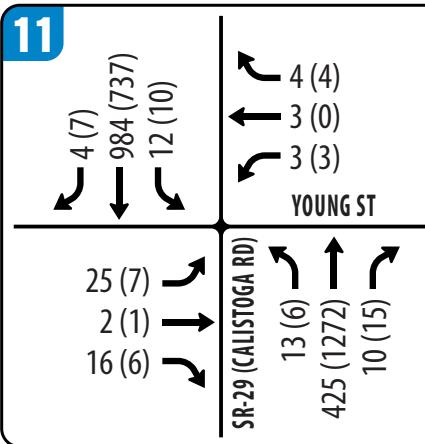
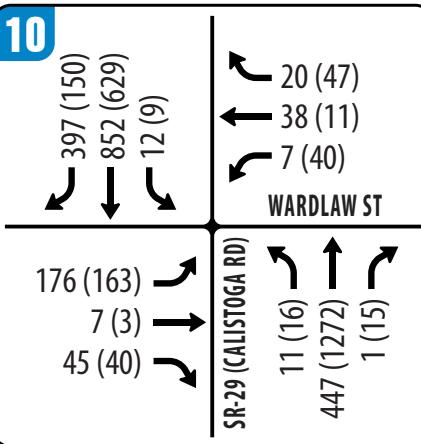
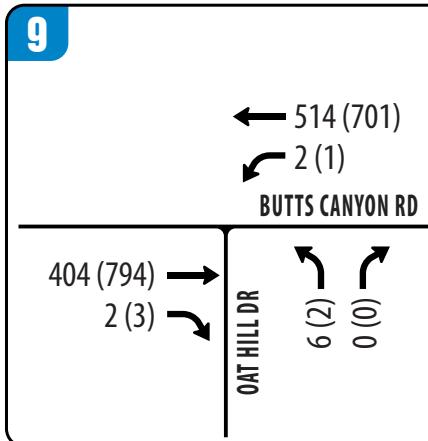
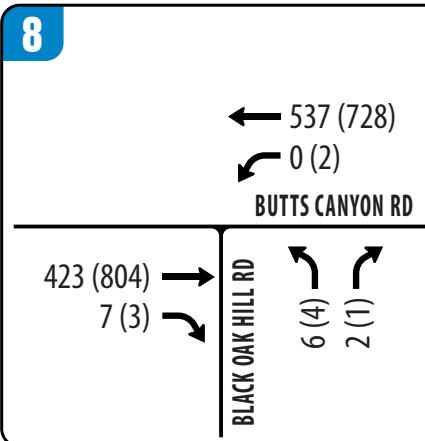
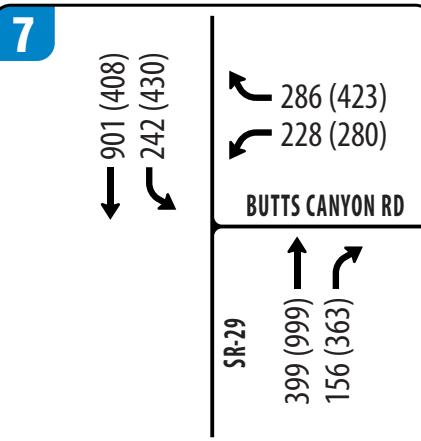
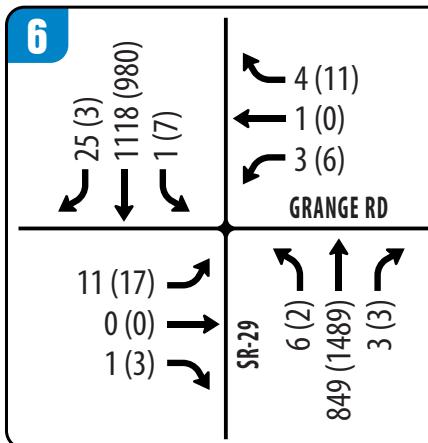
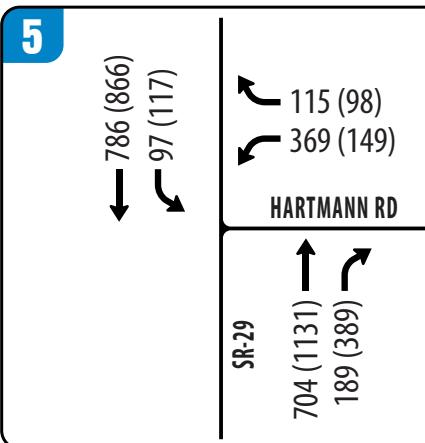
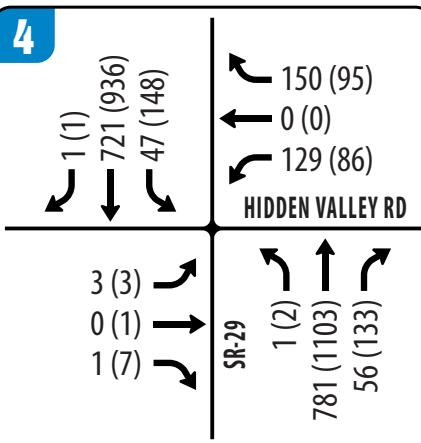
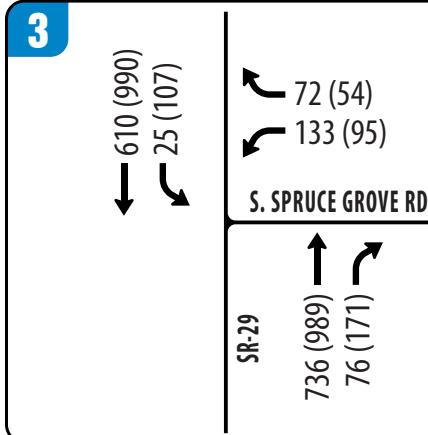
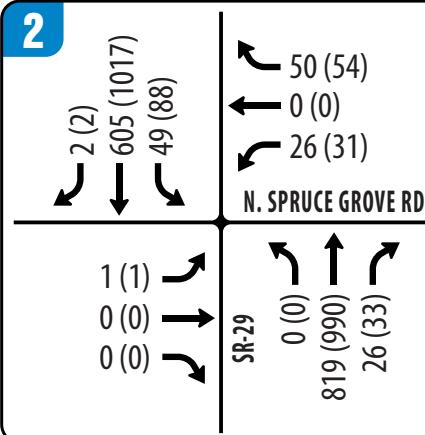
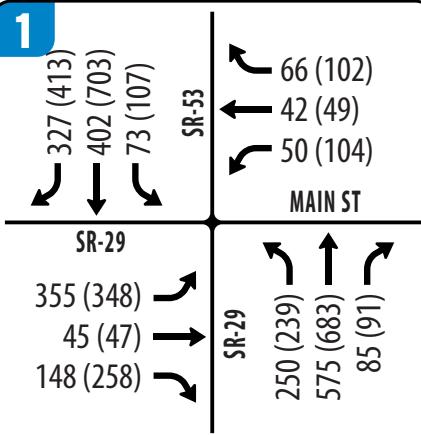


FIGURE A2 | CUMULATIVE PLUS FUTURE PHASES AM(PM) PEAK HOUR TRAFFIC VOLUMES – PAGE 1 OF 2
TRANSPORTATION IMPACT ANALYSIS

Maha Resort at Guenoc Valley
Lake County

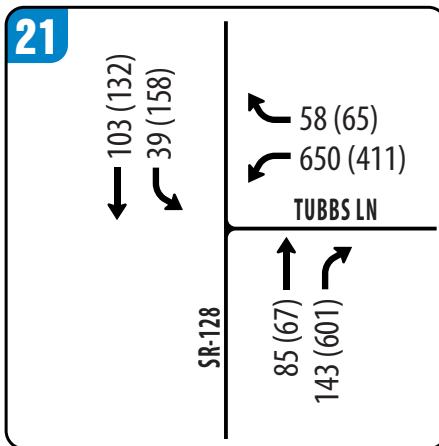
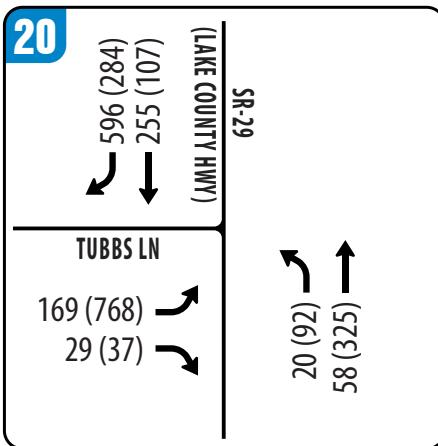
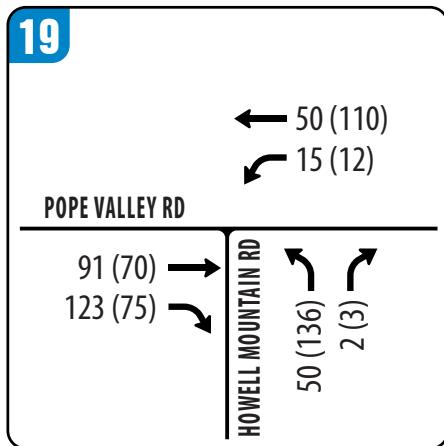
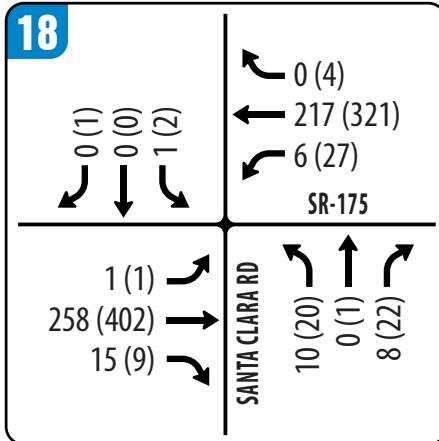
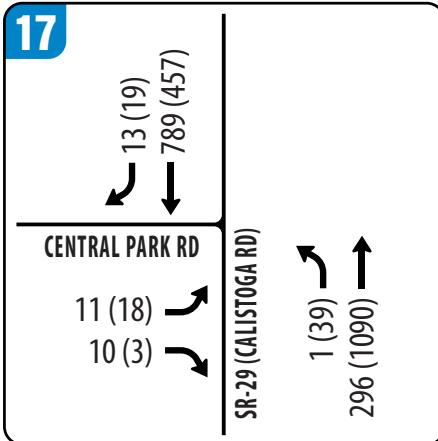
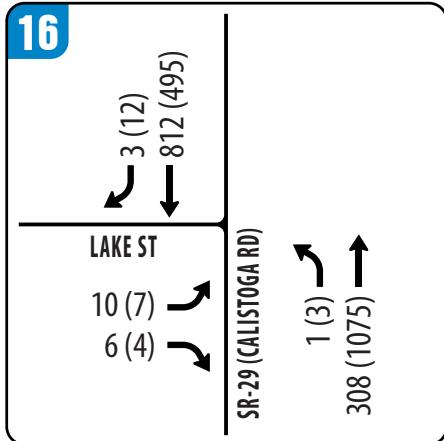
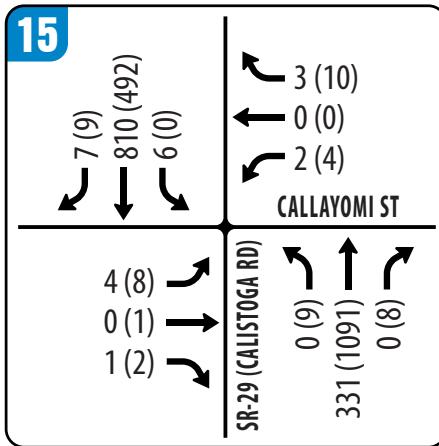
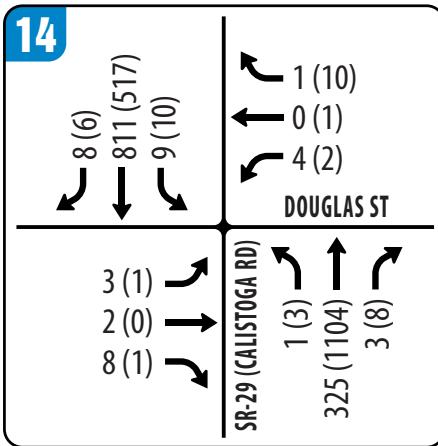
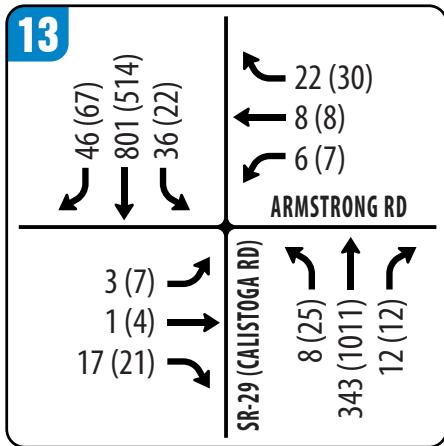


FIGURE A2 | CUMULATIVE PLUS FUTURE PHASES AM(PM) PEAK HOUR TRAFFIC VOLUMES – PAGE 2 OF 2
TRANSPORTATION IMPACT ANALYSIS

Maha Resort at Guenoc Valley
Lake County

HCM 6th Signalized Intersection Summary
1: SR-29 & Main Street & SR-53

Existing AM
11/27/2019

Movement	EBL	EBT	EBC	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑		↑	↑	↑	↑↑	↑↑		↑	↑↑	↑
Traffic Volume (veh/h)	308	39	73	26	37	57	99	240	38	63	230	283
Future Volume (veh/h)	308	39	73	26	37	57	99	240	38	63	230	283
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	335	42	79	28	40	62	108	261	41	68	250	308
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	535	131	246	58	192	262	144	909	141	112	984	439
Arrive On Green	0.15	0.23	0.23	0.03	0.10	0.10	0.08	0.29	0.29	0.06	0.28	0.28
Sat Flow, veh/h	3456	581	1093	1781	1870	1585	1781	3083	478	1781	3554	1585
Grp Volume(v), veh/h	335	0	121	28	40	62	108	149	153	68	250	308
Grp Sat Flow(s), veh/h/ln	1728	0	1674	1781	1870	1585	1781	1777	1784	1781	1777	1585
Q Serve(g_s), s	4.2	0.0	2.8	0.7	0.9	1.6	2.8	3.0	3.1	1.7	2.6	8.2
Cycle Q Clear(g_c), s	4.2	0.0	2.8	0.7	0.9	1.6	2.8	3.0	3.1	1.7	2.6	8.2
Prop In Lane	1.00			1.00			1.00	1.00		0.27	1.00	1.00
Lane Grp Cap(c), veh/h	535	0	377	58	192	262	144	524	526	112	984	439
V/C Ratio(X)	0.63	0.00	0.32	0.48	0.21	0.24	0.75	0.28	0.29	0.61	0.25	0.70
Avail Cap(c_a), veh/h	1810	0	1234	362	780	760	781	1652	1659	552	2849	1271
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.5	0.0	15.1	22.2	19.2	16.9	21.0	12.7	12.7	21.4	13.2	15.2
Incr Delay (d2), s/veh	1.2	0.0	0.5	6.1	0.5	0.5	7.7	0.3	0.3	5.3	0.1	2.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.6	0.0	1.0	0.4	0.4	0.5	1.4	1.1	1.1	0.8	0.9	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.7	0.0	15.6	28.3	19.8	17.4	28.7	13.0	13.0	26.6	13.3	17.2
LnGrp LOS	B	A	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h	456				130			410			626	
Approach Delay, s/veh	18.6				20.5			17.1			16.7	
Approach LOS	B				C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+R _c), s	7.4	18.3	6.0	15.0	8.3	17.5	11.7	9.3				
Change Period (Y+R _c), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	14.5	43.5	9.5	34.5	20.5	37.5	24.5	19.5				
Max Q Clear Time (g_c+l1), s	3.7	5.1	2.7	4.8	4.8	10.2	6.2	3.6				
Green Ext Time (p_c), s	0.1	1.9	0.0	0.7	0.2	2.8	1.1	0.3				
Intersection Summary												
HCM 6th Ctrl Delay				17.6								
HCM 6th LOS				B								

HCM 6th TWSC
2: SR-29 & Spruce Grove Road (North)

Existing AM
11/27/2019

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	0	15	0	44	0	298	5	43	334	2
Future Vol, veh/h	1	0	0	15	0	44	0	298	5	43	334	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	375	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	16	0	48	0	324	5	47	363	2
Major/Minor	Minor2	Minor1		Major1		Major2						
Conflicting Flow All	809	787	364	785	786	327	365	0	0	329	0	0
Stage 1	458	458	-	327	327	-	-	-	-	-	-	-
Stage 2	351	329	-	458	459	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	299	324	681	310	324	714	1194	-	-	1231	-	-
Stage 1	583	567	-	686	648	-	-	-	-	-	-	-
Stage 2	666	646	-	583	566	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	271	312	681	301	312	714	1194	-	-	1231	-	-
Mov Cap-2 Maneuver	271	312	-	301	312	-	-	-	-	-	-	-
Stage 1	583	545	-	686	648	-	-	-	-	-	-	-
Stage 2	621	646	-	561	544	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	18.3		12.2		0		0.9					
HCM LOS	C		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR			
Capacity (veh/h)	1194	-	-	271	301	714	1231	-	-			
HCM Lane V/C Ratio	-	-	-	0.004	0.054	0.067	0.038	-	-			
HCM Control Delay (s)	0	-	-	18.3	17.6	10.4	8	-	-			
HCM Lane LOS	A	-	-	C	C	B	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0.2	0.1	-	-			

Intersection

Int Delay, s/veh 3.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
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Lane Configurations						
Traffic Vol, veh/h	108	62	208	47	21	330
Future Vol, veh/h	108	62	208	47	21	330
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	117	67	226	51	23	359

Major/Minor	Minor1	Major1	Major2
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Conflicting Flow All	657	252	0	0	277	0
Stage 1	252	-	-	-	-	-
Stage 2	405	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	430	787	-	-	1286	-
Stage 1	790	-	-	-	-	-
Stage 2	673	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	422	787	-	-	1286	-
Mov Cap-2 Maneuver	422	-	-	-	-	-
Stage 1	790	-	-	-	-	-
Stage 2	661	-	-	-	-	-

Approach	WB	NB	SB
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HCM Control Delay, s	16.1	0	0.5
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HCM LOS	C
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Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	508	1286	-
HCM Lane V/C Ratio	-	-	0.364	0.018	-
HCM Control Delay (s)	-	-	16.1	7.8	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.6	0.1	-

Intersection

Int Delay, s/veh 1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	1	45	0	41	1	317	9	11	448	1
Future Vol, veh/h	3	0	1	45	0	41	1	317	9	11	448	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	50	-	-	50	275	-	275	375	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	1	49	0	45	1	345	10	12	487	1

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	886	868	487	859	859	345	488	0	0	355	0	0
Stage 1	511	511	-	347	347	-	-	-	-	-	-	-
Stage 2	375	357	-	512	512	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	265	290	581	277	294	698	1075	-	-	1204	-	-
Stage 1	545	537	-	669	635	-	-	-	-	-	-	-
Stage 2	646	628	-	545	536	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	246	287	581	274	291	698	1075	-	-	1204	-	-
Mov Cap-2 Maneuver	246	287	-	274	291	-	-	-	-	-	-	-
Stage 1	544	532	-	668	634	-	-	-	-	-	-	-
Stage 2	604	627	-	539	531	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB				
HCM Control Delay, s	17.7	16			0			0.2				
HCM LOS	C	C										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	1075	-	-	246	581	274	698	1204	-	-		
HCM Lane V/C Ratio	0.001	-	-	0.013	0.002	0.179	0.064	0.01	-	-		
HCM Control Delay (s)	8.4	-	-	19.8	11.2	21	10.5	8	-	-		
HCM Lane LOS	A	-	-	C	B	C	B	A	-	-		
HCM 95th %tile Q(veh)	0	-	-	0	0	0.6	0.2	0	-	-		

Intersection			
Intersection Delay, s/veh	9.2		
Intersection LOS	A		
Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	457	407	567
Demand Flow Rate, veh/h	466	416	579
Vehicles Circulating, veh/h	234	93	355
Vehicles Exiting, veh/h	275	841	345
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	8.0	6.0	12.5
Approach LOS	A	A	B
Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	466	416	579
Cap Entry Lane, veh/h	1087	1255	961
Entry HV Adj Factor	0.981	0.979	0.980
Flow Entry, veh/h	457	407	567
Cap Entry, veh/h	1066	1229	942
V/C Ratio	0.429	0.331	0.603
Control Delay, s/veh	8.0	6.0	12.5
LOS	A	A	B
95th %tile Queue, veh	2	1	4

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	0	1	3	1	4	5	337	3	1	726	21
Future Vol, veh/h	10	0	1	3	1	4	5	337	3	1	726	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	50	-	-	-	125	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	1	3	1	4	5	366	3	1	789	23

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1183	1182	801	1181	1192	368	812	0	0	369	0	0
Stage 1	803	803	-	378	378	-	-	-	-	-	-	-
Stage 2	380	379	-	803	814	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	166	190	384	167	187	677	814	-	-	1190	-	-
Stage 1	377	396	-	644	615	-	-	-	-	-	-	-
Stage 2	642	615	-	377	391	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	163	189	384	166	186	677	814	-	-	1190	-	-
Mov Cap-2 Maneuver	163	189	-	166	186	-	-	-	-	-	-	-
Stage 1	375	396	-	640	611	-	-	-	-	-	-	-
Stage 2	633	611	-	376	391	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	27.4	18.6			0.1			0		
HCM LOS	D	C								
<hr/>										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR	
Capacity (veh/h)	814	-	-	163	384	273	1190	-	-	
HCM Lane V/C Ratio	0.007	-	-	0.067	0.003	0.032	0.001	-	-	
HCM Control Delay (s)	9.5	-	-	28.7	14.4	18.6	8	-	-	
HCM Lane LOS	A	-	-	D	B	C	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0.1	0	-	-	

Intersection

Int Delay, s/veh 1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖ ↗ ↘ ↖ ↙ ↘					
Traffic Vol, veh/h	14	25	302	25	61	647
Future Vol, veh/h	14	25	302	25	61	647
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	75	-	-	325	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	27	328	27	66	703

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1177	342	0	0	355
Stage 1	342	-	-	-	-
Stage 2	835	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	211	701	-	-	1204
Stage 1	719	-	-	-	-
Stage 2	426	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	199	701	-	-	1204
Mov Cap-2 Maneuver	199	-	-	-	-
Stage 1	719	-	-	-	-
Stage 2	403	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.4	0	0.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	199	701	1204	-
HCM Lane V/C Ratio	-	-	0.076	0.039	0.055	-
HCM Control Delay (s)	-	-	24.6	10.3	8.2	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	0.2	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↔	↔		
Traffic Vol, veh/h	94	6	0	53	5	2
Future Vol, veh/h	94	6	0	53	5	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	102	7	0	58	5	2
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	109	0	164	106
Stage 1	-	-	-	-	106	-
Stage 2	-	-	-	-	58	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1481	-	827	948
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	965	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1481	-	827	948
Mov Cap-2 Maneuver	-	-	-	-	827	-
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	965	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0	9.2			
HCM LOS			A			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	858	-	-	1481	-	
HCM Lane V/C Ratio	0.009	-	-	-	-	
HCM Control Delay (s)	9.2	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↔	↔		
Traffic Vol, veh/h	78	2	2	33	5	0
Future Vol, veh/h	78	2	2	33	5	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	85	2	2	36	5	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	87	0	126	86
Stage 1	-	-	-	-	86	-
Stage 2	-	-	-	-	40	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1509	-	869	973
Stage 1	-	-	-	-	937	-
Stage 2	-	-	-	-	982	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1509	-	868	973
Mov Cap-2 Maneuver	-	-	-	-	868	-
Stage 1	-	-	-	-	937	-
Stage 2	-	-	-	-	981	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0.4	9.2			
HCM LOS			A			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	868	-	-	1509	-	
HCM Lane V/C Ratio	0.006	-	-	0.001	-	
HCM Control Delay (s)	9.2	-	-	7.4	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

HCM 6th Signalized Intersection Summary
10: Calistoga Road (SR-29)/SR-29 & Wardlaw Street

Existing AM
11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	6	39	6	33	17	10	247	1	11	453	311
Future Volume (veh/h)	137	6	39	6	33	17	10	247	1	11	453	311
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00			1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	149	7	42	7	36	18	11	268	1	12	492	338
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	343	19	58	110	214	96	330	1124	4	766	623	428
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.60	0.60	0.60	0.60	0.60	0.60
Sat Flow, veh/h	1055	104	312	84	1157	520	661	1862	7	1110	1033	710
Grp Volume(v), veh/h	198	0	0	61	0	0	11	0	269	12	0	830
Grp Sat Flow(s), veh/h/ln	1470	0	0	1761	0	0	661	0	1869	1110	0	1743
Q Serve(g_s), s	4.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	2.8	0.2	0.0	15.3
Cycle Q Clear(g_c), s	5.3	0.0	0.0	1.2	0.0	0.0	15.8	0.0	2.8	3.0	0.0	15.3
Prop In Lane	0.75		0.21	0.11			0.30	1.00		0.00	1.00	0.41
Lane Grp Cap(c), veh/h	420	0	0	419	0	0	330	0	1128	766	0	1052
V/C Ratio(X)	0.47	0.00	0.00	0.15	0.00	0.00	0.03	0.00	0.24	0.02	0.00	0.79
Avail Cap(c_a), veh/h	913	0	0	1017	0	0	839	0	2568	1621	0	2394
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.1	0.0	0.0	14.6	0.0	0.0	12.4	0.0	3.9	4.6	0.0	6.4
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.0	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.6	0.0	0.0	0.4	0.0	0.0	0.1	0.0	0.6	0.0	0.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.0	0.0	0.0	14.8	0.0	0.0	12.4	0.0	4.0	4.6	0.0	7.7
LnGrp LOS	B	A	A	B	A	A	B	A	A	A	A	A
Approach Vol, veh/h	198				61			280			842	
Approach Delay, s/veh	17.0				14.8			4.3			7.7	
Approach LOS	B				B			A			A	
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+R _c), s	30.1		12.3		30.1		12.3					
Change Period (Y+R _c), s	4.5		4.5		4.5		4.5					
Max Green Setting (Gmax), s	58.3		22.7		58.3		22.7					
Max Q Clear Time (g _{c+l1}), s	17.8		7.3		17.3		3.2					
Green Ext Time (p _c), s	1.8		1.0		8.3		0.2					
Intersection Summary												
HCM 6th Ctrl Delay			8.7									
HCM 6th LOS			A									

Intersection

Int Delay, s/veh 1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	2	14	3	3	4	12	227	9	11	568	4
Future Vol, veh/h	21	2	14	3	3	4	12	227	9	11	568	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	2	15	3	3	4	13	247	10	12	617	4

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	925	926	619	930	923	252	621	0	0	257	0	0
Stage 1	643	643	-	278	278	-	-	-	-	-	-	-
Stage 2	282	283	-	652	645	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	250	269	489	248	270	787	960	-	-	1308	-	-
Stage 1	462	468	-	728	680	-	-	-	-	-	-	-
Stage 2	725	677	-	457	467	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	241	261	489	233	262	787	960	-	-	1308	-	-
Mov Cap-2 Maneuver	241	261	-	233	262	-	-	-	-	-	-	-
Stage 1	455	461	-	716	669	-	-	-	-	-	-	-
Stage 2	706	666	-	435	460	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB				
HCM Control Delay, s	18.8	15.9			0.4			0.1				
HCM LOS	C	C										
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Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	960	-	-	300	340	1308	-	-				
HCM Lane V/C Ratio	0.014	-	-	0.134	0.032	0.009	-	-				
HCM Control Delay (s)	8.8	0	-	18.8	15.9	7.8	0	-				
HCM Lane LOS	A	A	-	C	C	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.5	0.1	0	-	-				

HCM 6th Signalized Intersection Summary
12: Calistoga Road (SR-29) & Highway 175/Main Street

Existing AM

11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	21	98	22	14	12	31	186	6	7	459	60
Future Volume (veh/h)	89	21	98	22	14	12	31	186	6	7	459	60
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	97	23	107	24	15	13	34	202	7	8	499	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	298	61	161	296	164	92	191	739	23	130	753	97
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.47	0.47	0.47	0.47	0.47	0.47
Sat Flow, veh/h	540	279	730	511	744	418	103	1583	50	7	1613	208
Grp Volume(v), veh/h	227	0	0	52	0	0	243	0	0	572	0	0
Grp Sat Flow(s), veh/h/ln	1548	0	0	1673	0	0	1736	0	0	1829	0	0
Q Serve(g_s), s	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.8	0.0	0.0	0.7	0.0	0.0	2.3	0.0	0.0	7.0	0.0	0.0
Prop In Lane	0.43			0.47	0.46		0.25	0.14		0.03	0.01	0.11
Lane Grp Cap(c), veh/h	520	0	0	552	0	0	953	0	0	980	0	0
V/C Ratio(X)	0.44	0.00	0.00	0.09	0.00	0.00	0.26	0.00	0.00	0.58	0.00	0.00
Avail Cap(c_a), veh/h	1633	0	0	1636	0	0	3171	0	0	3513	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.2	0.0	0.0	9.0	0.0	0.0	4.7	0.0	0.0	5.9	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.0	0.0	0.0	0.2	0.0	0.0	0.4	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	10.7	0.0	0.0	9.1	0.0	0.0	4.8	0.0	0.0	6.5	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h	227				52			243			572	
Approach Delay, s/veh	10.7				9.1			4.8			6.5	
Approach LOS	B				A			A			A	
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+R _c), s	17.9			10.8			17.9			10.8		
Change Period (Y+R _c), s	4.5			4.5			4.5			4.5		
Max Green Setting (Gmax), s	53.5			27.5			53.5			27.5		
Max Q Clear Time (g_c+l1), s	4.3			5.8			9.0			2.7		
Green Ext Time (p_c), s	1.7			1.3			4.5			0.2		
Intersection Summary												
HCM 6th Ctrl Delay				7.1								
HCM 6th LOS				A								

Intersection

Int Delay, s/veh 1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	15	5	7	19	7	215	11	31	534	40
Future Vol, veh/h	3	1	15	5	7	19	7	215	11	31	534	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	16	5	8	21	8	234	12	34	580	43

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	941	932	602	934	947	240	623	0	0	246	0	0
Stage 1	670	670	-	256	256	-	-	-	-	-	-	-
Stage 2	271	262	-	678	691	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	243	266	500	246	261	799	958	-	-	1320	-	-
Stage 1	446	455	-	749	696	-	-	-	-	-	-	-
Stage 2	735	691	-	442	446	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	222	253	500	228	248	799	958	-	-	1320	-	-
Mov Cap-2 Maneuver	222	253	-	228	248	-	-	-	-	-	-	-
Stage 1	442	437	-	742	689	-	-	-	-	-	-	-
Stage 2	701	684	-	409	428	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	14.5	14.3			0.3			0.4		
HCM LOS	B	B								
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Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	958	-	-	400	419	1320	-	-		
HCM Lane V/C Ratio	0.008	-	-	0.052	0.08	0.026	-	-		
HCM Control Delay (s)	8.8	0	-	14.5	14.3	7.8	0	-		
HCM Lane LOS	A	A	-	B	B	A	A	-		
HCM 95th %tile Q(veh)	0	-	-	0.2	0.3	0.1	-	-		

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	2	7	4	0	1	1	200	3	8	543	7
Future Vol, veh/h	3	2	7	4	0	1	1	200	3	8	543	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	2	8	4	0	1	1	217	3	9	590	8

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	833	834	594	838	837	219	598	0	0	220	0	0
Stage 1	612	612	-	221	221	-	-	-	-	-	-	-
Stage 2	221	222	-	617	616	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	288	304	505	286	303	821	979	-	-	1349	-	-
Stage 1	480	484	-	781	720	-	-	-	-	-	-	-
Stage 2	781	720	-	477	482	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	285	301	505	278	300	821	979	-	-	1349	-	-
Mov Cap-2 Maneuver	285	301	-	278	300	-	-	-	-	-	-	-
Stage 1	480	479	-	780	719	-	-	-	-	-	-	-
Stage 2	779	719	-	463	477	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	14.6	16.4			0			0.1		
HCM LOS	B	C								
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Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	979	-	-	387	320	1349	-	-		
HCM Lane V/C Ratio	0.001	-	-	0.034	0.017	0.006	-	-		
HCM Control Delay (s)	8.7	0	-	14.6	16.4	7.7	0	-		
HCM Lane LOS	A	A	-	B	C	A	A	-		
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-		

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	1	2	0	3	0	208	0	5	545	2
Future Vol, veh/h	1	0	1	2	0	3	0	208	0	5	545	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	1	2	0	3	0	226	0	5	592	2

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	831	829	593	830	830	226	594	0	0	226	0	0
Stage 1	603	603	-	226	226	-	-	-	-	-	-	-
Stage 2	228	226	-	604	604	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	289	306	506	289	306	813	982	-	-	1342	-	-
Stage 1	486	488	-	777	717	-	-	-	-	-	-	-
Stage 2	775	717	-	485	488	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	286	304	506	287	304	813	982	-	-	1342	-	-
Mov Cap-2 Maneuver	286	304	-	287	304	-	-	-	-	-	-	-
Stage 1	486	485	-	777	717	-	-	-	-	-	-	-
Stage 2	772	717	-	481	485	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	14.9	12.8			0			0.1		
HCM LOS	B	B								
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Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	982	-	-	365	469	1342	-	-		
HCM Lane V/C Ratio	-	-	-	0.006	0.012	0.004	-	-		
HCM Control Delay (s)	0	-	-	14.9	12.8	7.7	0	-		
HCM Lane LOS	A	-	-	B	B	A	A	-		
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-		

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		A	B		
Traffic Vol, veh/h	9	5	1	187	547	3
Future Vol, veh/h	9	5	1	187	547	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	5	1	203	595	3

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	802	597	598	0	-	0
Stage 1	597	-	-	-	-	-
Stage 2	205	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	353	503	979	-	-	-
Stage 1	550	-	-	-	-	-
Stage 2	829	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	353	503	979	-	-	-
Mov Cap-2 Maneuver	353	-	-	-	-	-
Stage 1	549	-	-	-	-	-
Stage 2	829	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	979	-	395	-	-
HCM Lane V/C Ratio	0.001	-	0.039	-	-
HCM Control Delay (s)	8.7	0	14.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↑	↑	↑	↑	↑	
Traffic Vol, veh/h	6	9	1	181	533	6
Future Vol, veh/h	6	9	1	181	533	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	275	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	10	1	197	579	7

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	782	583	586	0	-	0
Stage 1	583	-	-	-	-	-
Stage 2	199	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	363	512	989	-	-	-
Stage 1	558	-	-	-	-	-
Stage 2	835	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	363	512	989	-	-	-
Mov Cap-2 Maneuver	363	-	-	-	-	-
Stage 1	557	-	-	-	-	-
Stage 2	835	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	989	-	363	512	-	-
HCM Lane V/C Ratio	0.001	-	0.018	0.019	-	-
HCM Control Delay (s)	8.6	-	15.1	12.2	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.1	-	-

Intersection

Int Delay, s/veh 0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	166	13	2	68	0	9	0	5	1	0	0
Future Vol, veh/h	1	166	13	2	68	0	9	0	5	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	180	14	2	74	0	10	0	5	1	0	0

Major/Minor	Major1	Major2		Minor1		Minor2	
Conflicting Flow All	74	0	0	194	0	0	267
Stage 1	-	-	-	-	-	189	189
Stage 2	-	-	-	-	-	78	78
Critical Hdwy	4.12	-	-	4.12	-	7.12	6.52
Critical Hdwy Stg 1	-	-	-	-	-	6.12	5.52
Critical Hdwy Stg 2	-	-	-	-	-	6.12	5.52
Follow-up Hdwy	2.218	-	-	2.218	-	3.518	4.018
Pot Cap-1 Maneuver	1526	-	-	1379	-	686	639
Stage 1	-	-	-	-	-	813	744
Stage 2	-	-	-	-	-	931	830
Platoon blocked, %	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1526	-	-	1379	-	685	637
Mov Cap-2 Maneuver	-	-	-	-	-	685	637
Stage 1	-	-	-	-	-	812	743
Stage 2	-	-	-	-	-	929	828

Approach	EB	WB		NB		SB	
HCM Control Delay, s	0	0.2		10		10.3	
HCM LOS				B		B	
<hr/>							
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR SBLn1
Capacity (veh/h)	737	1526	-	-	1379	-	677
HCM Lane V/C Ratio	0.021	0.001	-	-	0.002	-	0.002
HCM Control Delay (s)	10	7.4	0	-	7.6	0	10.3
HCM Lane LOS	B	A	A	-	A	A	-
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	0

Intersection						
Int Delay, s/veh	1.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	44	68	13	26	21	2
Future Vol, veh/h	44	68	13	26	21	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	74	14	28	23	2
Major/Minor						
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	122	0	141	85
Stage 1	-	-	-	-	85	-
Stage 2	-	-	-	-	56	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1465	-	852	974
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	967	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1465	-	843	974
Mov Cap-2 Maneuver	-	-	-	-	843	-
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	957	-
Approach						
Approach	EB	WB	NB			
HCM Control Delay, s	0	2.5	9.3			
HCM LOS			A			
Minor Lane/Major Mvmt						
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	853	-	-	1465	-	
HCM Lane V/C Ratio	0.029	-	-	0.01	-	
HCM Control Delay (s)	9.3	-	-	7.5	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

Intersection

Int Delay, s/veh 2.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		A	B		
Traffic Vol, veh/h	96	25	17	29	180	415
Future Vol, veh/h	96	25	17	29	180	415
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	104	27	18	32	196	451

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	490	422	647	0	-
Stage 1	422	-	-	-	-
Stage 2	68	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	537	632	939	-	-
Stage 1	662	-	-	-	-
Stage 2	955	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	526	632	939	-	-
Mov Cap-2 Maneuver	526	-	-	-	-
Stage 1	649	-	-	-	-
Stage 2	955	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.7	3.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	939	-	545	-	-
HCM Lane V/C Ratio	0.02	-	0.241	-	-
HCM Control Delay (s)	8.9	0	13.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.9	-	-

Intersection						
Int Delay, s/veh	17.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	B	T	R	U	↑
Traffic Vol, veh/h	478	35	74	82	26	89
Future Vol, veh/h	478	35	74	82	26	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	520	38	80	89	28	97
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	278	125	0	0	169	0
Stage 1	125	-	-	-	-	-
Stage 2	153	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	712	926	-	-	1409	-
Stage 1	901	-	-	-	-	-
Stage 2	875	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	698	926	-	-	1409	-
Mov Cap-2 Maneuver	698	-	-	-	-	-
Stage 1	901	-	-	-	-	-
Stage 2	858	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	26	0		1.7		
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	710	1409	-	
HCM Lane V/C Ratio	-	-	0.785	0.02	-	
HCM Control Delay (s)	-	-	26	7.6	-	
HCM Lane LOS	-	-	D	A	-	
HCM 95th %tile Q(veh)	-	-	7.8	0.1	-	

HCM 6th Signalized Intersection Summary
1: SR-29 & Main Street & SR-53

Existing PM
11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑		↑	↑	↑	↑↑	↑↑		↑	↑↑	↑
Traffic Volume (veh/h)	302	41	68	42	43	88	106	372	48	93	271	358
Future Volume (veh/h)	302	41	68	42	43	88	106	372	48	93	271	358
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	328	45	74	46	47	96	115	404	52	101	295	389
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	505	126	207	83	184	274	153	1065	136	133	1155	515
Arrive On Green	0.15	0.20	0.20	0.05	0.10	0.10	0.09	0.34	0.34	0.07	0.32	0.32
Sat Flow, veh/h	3456	636	1046	1781	1870	1585	1781	3169	405	1781	3554	1585
Grp Volume(v), veh/h	328	0	119	46	47	96	115	225	231	101	295	389
Grp Sat Flow(s), veh/h/ln	1728	0	1682	1781	1870	1585	1781	1777	1797	1781	1777	1585
Q Serve(g_s), s	4.7	0.0	3.2	1.3	1.2	2.8	3.3	5.0	5.1	2.9	3.2	11.5
Cycle Q Clear(g_c), s	4.7	0.0	3.2	1.3	1.2	2.8	3.3	5.0	5.1	2.9	3.2	11.5
Prop In Lane	1.00			1.00			1.00	1.00		0.23	1.00	1.00
Lane Grp Cap(c), veh/h	505	0	333	83	184	274	153	597	604	133	1155	515
V/C Ratio(X)	0.65	0.00	0.36	0.55	0.26	0.35	0.75	0.38	0.38	0.76	0.26	0.76
Avail Cap(c_a), veh/h	1490	0	983	393	699	711	666	1481	1498	563	2758	1230
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.0	0.0	18.1	24.3	21.8	19.0	23.3	13.2	13.2	23.7	13.0	15.8
Incr Delay (d2), s/veh	1.4	0.0	0.6	5.7	0.7	0.8	7.3	0.4	0.4	8.6	0.1	2.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.8	0.0	1.2	0.6	0.5	1.0	1.6	1.8	1.8	1.4	1.1	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.4	0.0	18.7	30.0	22.5	19.8	30.6	13.6	13.6	32.3	13.1	18.0
LnGrp LOS	C	A	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		447				189			571		785	
Approach Delay, s/veh		21.4				22.9			17.0		18.0	
Approach LOS		C				C			B		B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+R _c), s	8.4	22.0	6.9	14.8	9.0	21.5	12.1	9.6				
Change Period (Y+R _c), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	16.5	43.5	11.5	30.5	19.5	40.5	22.5	19.5				
Max Q Clear Time (g_c+l1), s	4.9	7.1	3.3	5.2	5.3	13.5	6.7	4.8				
Green Ext Time (p_c), s	0.2	3.0	0.0	0.6	0.2	3.5	1.0	0.4				
Intersection Summary												
HCM 6th Ctrl Delay			19.0									
HCM 6th LOS			B									

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖			↖	↗	↗	↖	↖		↖	↗	
Traffic Vol, veh/h	1	0	0	4	0	47	0	505	15	77	339	2
Future Vol, veh/h	1	0	0	4	0	47	0	505	15	77	339	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	375	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	4	0	51	0	549	16	84	368	2
Major/Minor												
Minor2		Minor1			Major1			Major2				
Conflicting Flow All	1120	1102	369	1094	1095	557	370	0	0	565	0	0
Stage 1	537	537	-	557	557	-	-	-	-	-	-	-
Stage 2	583	565	-	537	538	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	184	212	677	191	214	530	1189	-	-	1007	-	-
Stage 1	528	523	-	515	512	-	-	-	-	-	-	-
Stage 2	498	508	-	528	522	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	156	194	677	179	196	530	1189	-	-	1007	-	-
Mov Cap-2 Maneuver	156	194	-	179	196	-	-	-	-	-	-	-
Stage 1	528	480	-	515	512	-	-	-	-	-	-	-
Stage 2	450	508	-	484	479	-	-	-	-	-	-	-
Approach												
EB			WB			NB			SB			
HCM Control Delay, s	28.2		13.5			0			1.6			
HCM LOS	D		B									
Minor Lane/Major Mvmt		NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	1189		-	-	156	179	530	1007	-	-		
HCM Lane V/C Ratio	-		-	-	0.007	0.024	0.096	0.083	-	-		
HCM Control Delay (s)	0		-	-	28.2	25.6	12.5	8.9	-	-		
HCM Lane LOS	A		-	-	D	D	B	A	-	-		
HCM 95th %tile Q(veh)	0		-	-	0	0.1	0.3	0.3	-	-		

Intersection

Int Delay, s/veh 3.4

Movement WBL WBR NBT NBR SBL SBT

Lane Configurations						
Traffic Vol, veh/h	58	47	489	132	93	292
Future Vol, veh/h	58	47	489	132	93	292
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	63	51	532	143	101	317

Major/Minor Minor1 Major1 Major2

Conflicting Flow All	1123	604	0	0	675	0
Stage 1	604	-	-	-	-	-
Stage 2	519	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	227	498	-	-	916	-
Stage 1	546	-	-	-	-	-
Stage 2	597	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	202	498	-	-	916	-
Mov Cap-2 Maneuver	202	-	-	-	-	-
Stage 1	546	-	-	-	-	-
Stage 2	531	-	-	-	-	-

Approach WB NB SB

HCM Control Delay, s 27.1 0 2.3

HCM LOS D

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	275	916	-
HCM Lane V/C Ratio	-	-	0.415	0.11	-
HCM Control Delay (s)	-	-	27.1	9.4	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	1.9	0.4	-

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	6	7	0	25	2	630	33	30	319	1
Future Vol, veh/h	3	1	6	7	0	25	2	630	33	30	319	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	50	275	-	275	375	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	7	8	0	27	2	685	36	33	347	1
Major/Minor												
Minor2		Minor1			Major1			Major2				
Conflicting Flow All	1134	1138	347	1107	1103	685	348	0	0	721	0	0
Stage 1	413	413	-	689	689	-	-	-	-	-	-	-
Stage 2	721	725	-	418	414	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	180	201	696	188	211	448	1211	-	-	881	-	-
Stage 1	616	594	-	436	446	-	-	-	-	-	-	-
Stage 2	419	430	-	612	593	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	164	193	696	180	203	448	1211	-	-	881	-	-
Mov Cap-2 Maneuver	164	193	-	180	203	-	-	-	-	-	-	-
Stage 1	615	572	-	435	445	-	-	-	-	-	-	-
Stage 2	393	429	-	582	571	-	-	-	-	-	-	-
Approach												
EB			WB			NB			SB			
HCM Control Delay, s	16.8		16.3			0			0.8			
HCM LOS	C		C									
Minor Lane/Major Mvmt		NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR	
Capacity (veh/h)	1211		-	-	170	696	180	448	881	-	-	
HCM Lane V/C Ratio	0.002		-	-	0.026	0.009	0.042	0.061	0.037	-	-	
HCM Control Delay (s)	8		-	-	26.7	10.2	25.9	13.6	9.2	-	-	
HCM Lane LOS	A		-	-	D	B	D	B	A	-	-	
HCM 95th %tile Q(veh)	0		-	-	0.1	0	0.1	0.2	0.1	-	-	

Intersection			
Intersection Delay, s/veh	14.7		
Intersection LOS	B		
Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	232	989	319
Demand Flow Rate, veh/h	237	1008	325
Vehicles Circulating, veh/h	634	113	143
Vehicles Exiting, veh/h	487	355	728
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	9.2	18.9	5.6
Approach LOS	A	C	A
Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	237	1008	325
Cap Entry Lane, veh/h	723	1230	1193
Entry HV Adj Factor	0.979	0.981	0.981
Flow Entry, veh/h	232	989	319
Cap Entry, veh/h	708	1206	1170
V/C Ratio	0.328	0.820	0.273
Control Delay, s/veh	9.2	18.9	5.6
LOS	A	C	A
95th %tile Queue, veh	1	10	1

Intersection

Int Delay, s/veh 0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	0	3	5	0	10	2	882	3	6	290	3
Future Vol, veh/h	15	0	3	5	0	10	2	882	3	6	290	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	50	-	-	-	125	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	0	3	5	0	11	2	959	3	7	315	3

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1301	1297	317	1297	1297	961	318	0	0	962	0	0
Stage 1	331	331	-	965	965	-	-	-	-	-	-	-
Stage 2	970	966	-	332	332	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	138	162	724	139	162	311	1242	-	-	715	-	-
Stage 1	682	645	-	306	333	-	-	-	-	-	-	-
Stage 2	304	333	-	681	644	-	-	-	-	-	-	-
Platoon blocked, %							-	-	-	-	-	-
Mov Cap-1 Maneuver	132	160	724	137	160	311	1242	-	-	715	-	-
Mov Cap-2 Maneuver	132	160	-	137	160	-	-	-	-	-	-	-
Stage 1	681	639	-	305	332	-	-	-	-	-	-	-
Stage 2	293	332	-	671	638	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	31.8	22.8			0			0.2		
HCM LOS	D	C								
<hr/>										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR	
Capacity (veh/h)	1242	-	-	132	724	218	715	-	-	
HCM Lane V/C Ratio	0.002	-	-	0.124	0.005	0.075	0.009	-	-	
HCM Control Delay (s)	7.9	-	-	36.1	10	22.8	10.1	-	-	
HCM Lane LOS	A	-	-	E	B	C	B	-	-	
HCM 95th %tile Q(veh)	0	-	-	0.4	0	0.2	0	-	-	

Intersection

Int Delay, s/veh 2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑ ↗	↗ ↘	↗	↖	↑	↑
Traffic Vol, veh/h	40	114	797	27	17	265
Future Vol, veh/h	40	114	797	27	17	265
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	75	-	-	325	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	124	866	29	18	288

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1205	881	0	0	895
Stage 1	881	-	-	-	-
Stage 2	324	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	203	346	-	-	758
Stage 1	405	-	-	-	-
Stage 2	733	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	198	346	-	-	758
Mov Cap-2 Maneuver	198	-	-	-	-
Stage 1	405	-	-	-	-
Stage 2	715	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.9	0	0.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	198	346	758	-
HCM Lane V/C Ratio	-	-	0.22	0.358	0.024	-
HCM Control Delay (s)	-	-	28.2	21.1	9.9	-
HCM Lane LOS	-	-	D	C	A	-
HCM 95th %tile Q(veh)	-	-	0.8	1.6	0.1	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↔	↔		
Traffic Vol, veh/h	47	3	2	153	4	1
Future Vol, veh/h	47	3	2	153	4	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	3	2	166	4	1
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	54	0	223	53
Stage 1	-	-	-	-	53	-
Stage 2	-	-	-	-	170	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1551	-	765	1014
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	860	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1551	-	764	1014
Mov Cap-2 Maneuver	-	-	-	-	764	-
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	859	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0.1	9.5			
HCM LOS			A			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	804	-	-	1551	-	
HCM Lane V/C Ratio	0.007	-	-	0.001	-	
HCM Control Delay (s)	9.5	-	-	7.3	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Intersection

Int Delay, s/veh 0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↔	↔		
Traffic Vol, veh/h	38	3	1	130	2	0
Future Vol, veh/h	38	3	1	130	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	3	1	141	2	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	44	0	186 43
Stage 1	-	-	-	-	43 -
Stage 2	-	-	-	-	143 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1564	-	803 1027
Stage 1	-	-	-	-	979 -
Stage 2	-	-	-	-	884 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1564	-	802 1027
Mov Cap-2 Maneuver	-	-	-	-	802 -
Stage 1	-	-	-	-	979 -
Stage 2	-	-	-	-	883 -

Approach	EB	WB	NB	
HCM Control Delay, s	0	0.1	9.5	
HCM LOS			A	

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	802	-	-	1564	-
HCM Lane V/C Ratio	0.003	-	-	0.001	-
HCM Control Delay (s)	9.5	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM 6th Signalized Intersection Summary
10: Calistoga Road (SR-29)/SR-29 & Wardlaw Street

Existing PM
11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	3	35	35	10	41	14	710	13	8	280	99
Future Volume (veh/h)	95	3	35	35	10	41	14	710	13	8	280	99
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	103	3	38	38	11	45	15	772	14	9	304	108
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	343	8	59	228	50	115	665	1070	19	411	770	274
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.58	0.58	0.58	0.58	0.58	0.58
Sat Flow, veh/h	1084	53	407	521	350	800	974	1831	33	689	1318	468
Grp Volume(v), veh/h	144	0	0	94	0	0	15	0	786	9	0	412
Grp Sat Flow(s), veh/h/ln	1544	0	0	1672	0	0	974	0	1864	689	0	1786
Q Serve(g_s), s	1.1	0.0	0.0	0.0	0.0	0.0	0.3	0.0	10.0	0.3	0.0	4.1
Cycle Q Clear(g_c), s	2.7	0.0	0.0	1.6	0.0	0.0	4.4	0.0	10.0	10.3	0.0	4.1
Prop In Lane	0.72		0.26	0.40		0.48	1.00		0.02	1.00		0.26
Lane Grp Cap(c), veh/h	409	0	0	393	0	0	665	0	1089	411	0	1043
V/C Ratio(X)	0.35	0.00	0.00	0.24	0.00	0.00	0.02	0.00	0.72	0.02	0.00	0.39
Avail Cap(c_a), veh/h	1079	0	0	1113	0	0	1876	0	3407	1267	0	3264
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.2	0.0	0.0	12.8	0.0	0.0	4.9	0.0	4.9	8.7	0.0	3.7
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.8	0.0	0.0	0.5	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.7	0.0	0.0	13.1	0.0	0.0	4.9	0.0	5.9	8.7	0.0	4.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h	144			94			801			421		
Approach Delay, s/veh	13.7			13.1			5.8			4.1		
Approach LOS	B			B			A			A		
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+R _c), s	23.8		9.3		23.8		9.3					
Change Period (Y+R _c), s	4.5		4.5		4.5		4.5					
Max Green Setting (Gmax), s	60.5		20.5		60.5		20.5					
Max Q Clear Time (g_c+l1), s	12.0		4.7		12.3		3.6					
Green Ext Time (p_c), s	7.3		0.6		3.1		0.4					
Intersection Summary												
HCM 6th Ctrl Delay			6.6									
HCM 6th LOS			A									

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	+	+	+	+	+	+	+	+	+	+	+	+
Traffic Vol, veh/h	6	1	5	3	0	4	5	710	13	9	374	6
Future Vol, veh/h	6	1	5	3	0	4	5	710	13	9	374	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	1	5	3	0	4	5	772	14	10	407	7
Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1222	1227	411	1223	1223	779	414	0	0	786	0	0
Stage 1	431	431	-	789	789	-	-	-	-	-	-	-
Stage 2	791	796	-	434	434	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	156	178	641	156	179	396	1145	-	-	833	-	-
Stage 1	603	583	-	384	402	-	-	-	-	-	-	-
Stage 2	383	399	-	600	581	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	151	174	641	151	175	396	1145	-	-	833	-	-
Mov Cap-2 Maneuver	151	174	-	151	175	-	-	-	-	-	-	-
Stage 1	598	574	-	381	399	-	-	-	-	-	-	-
Stage 2	376	396	-	584	572	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	22			20.9			0.1			0.2		
HCM LOS	C			C								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1145	-	-	225	234	833	-	-				
HCM Lane V/C Ratio	0.005	-	-	0.058	0.033	0.012	-	-				
HCM Control Delay (s)	8.2	0	-	22	20.9	9.4	0	-				
HCM Lane LOS	A	A	-	C	C	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-	-				

HCM 6th Signalized Intersection Summary
12: Calistoga Road (SR-29) & Highway 175/Main Street

Existing PM
11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	12	68	22	22	12	53	585	8	2	305	85
Future Volume (veh/h)	124	12	68	22	22	12	53	585	8	2	305	85
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	135	13	74	24	24	13	58	636	9	2	332	92
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	340	39	105	235	195	77	155	894	12	105	745	206
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.53	0.53	0.53	0.53	0.53	0.53
Sat Flow, veh/h	818	183	501	425	928	367	80	1689	23	1	1409	388
Grp Volume(v), veh/h	222	0	0	61	0	0	703	0	0	426	0	0
Grp Sat Flow(s), veh/h/ln	1502	0	0	1720	0	0	1791	0	0	1798	0	0
Q Serve(g_s), s	3.7	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.7	0.0	0.0	1.0	0.0	0.0	10.1	0.0	0.0	5.0	0.0	0.0
Prop In Lane	0.61			0.33	0.39		0.21	0.08		0.01	0.00	0.22
Lane Grp Cap(c), veh/h	484	0	0	507	0	0	1061	0	0	1056	0	0
V/C Ratio(X)	0.46	0.00	0.00	0.12	0.00	0.00	0.66	0.00	0.00	0.40	0.00	0.00
Avail Cap(c_a), veh/h	1167	0	0	1234	0	0	3022	0	0	3083	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.5	0.0	0.0	11.2	0.0	0.0	6.2	0.0	0.0	5.0	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.1	0.0	0.0	0.7	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.3	0.0	0.0	0.3	0.0	0.0	2.0	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.2	0.0	0.0	11.3	0.0	0.0	6.9	0.0	0.0	5.3	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h	222				61			703			426	
Approach Delay, s/veh	13.2				11.3			6.9			5.3	
Approach LOS	B				B			A			A	
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+R _c), s	22.8			11.8			22.8			11.8		
Change Period (Y+R _c), s	4.5			4.5			4.5			4.5		
Max Green Setting (Gmax), s	57.5			23.5			57.5			23.5		
Max Q Clear Time (g _{c+l1}), s	12.1			6.7			7.0			3.0		
Green Ext Time (p _c), s	6.2			1.2			3.1			0.2		
Intersection Summary												
HCM 6th Ctrl Delay				7.6								
HCM 6th LOS				A								

Intersection

Int Delay, s/veh 1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	4	18	6	7	26	21	652	11	19	293	58
Future Vol, veh/h	6	4	18	6	7	26	21	652	11	19	293	58
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	4	20	7	8	28	23	709	12	21	318	63

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1171	1159	350	1165	1184	715	381	0	0	721	0	0
Stage 1	392	392	-	761	761	-	-	-	-	-	-	-
Stage 2	779	767	-	404	423	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	170	196	693	171	189	431	1177	-	-	881	-	-
Stage 1	633	606	-	398	414	-	-	-	-	-	-	-
Stage 2	389	411	-	623	588	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	146	184	693	155	177	431	1177	-	-	881	-	-
Mov Cap-2 Maneuver	146	184	-	155	177	-	-	-	-	-	-	-
Stage 1	612	587	-	385	400	-	-	-	-	-	-	-
Stage 2	345	397	-	582	570	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	17.6	20.1			0.2			0.5		
HCM LOS	C	C								
<hr/>										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	1177	-	-	315	281	881	-	-		
HCM Lane V/C Ratio	0.019	-	-	0.097	0.151	0.023	-	-		
HCM Control Delay (s)	8.1	0	-	17.6	20.1	9.2	0	-		
HCM Lane LOS	A	A	-	C	C	A	A	-		
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.5	0.1	-	-		

Intersection															
Int Delay, s/veh	0.3														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			
Lane Configurations	+	+	+	+	+	+	+	+	+	+	+	+			
Traffic Vol, veh/h	1	0	1	2	1	9	3	733	7	9	295	5			
Future Vol, veh/h	1	0	1	2	1	9	3	733	7	9	295	5			
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0			
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free			
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None			
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-			
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-			
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-			
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92			
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2			
Mvmt Flow	1	0	1	2	1	10	3	797	8	10	321	5			
Major/Minor	Minor2	Minor1			Major1			Major2							
Conflicting Flow All	1157	1155	324	1151	1153	801	326	0	0	805	0	0			
Stage 1	344	344	-	807	807	-	-	-	-	-	-	-			
Stage 2	813	811	-	344	346	-	-	-	-	-	-	-			
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-			
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-			
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-			
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-			
Pot Cap-1 Maneuver	173	197	717	175	197	384	1234	-	-	819	-	-			
Stage 1	671	637	-	375	394	-	-	-	-	-	-	-			
Stage 2	372	393	-	671	635	-	-	-	-	-	-	-			
Platoon blocked, %								-	-	-	-	-			
Mov Cap-1 Maneuver	165	193	717	172	193	384	1234	-	-	819	-	-			
Mov Cap-2 Maneuver	165	193	-	172	193	-	-	-	-	-	-	-			
Stage 1	668	627	-	374	392	-	-	-	-	-	-	-			
Stage 2	360	391	-	660	625	-	-	-	-	-	-	-			
Approach	EB			WB			NB			SB					
HCM Control Delay, s	18.5			17.6			0			0.3					
HCM LOS	C			C			A			A					
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR							
Capacity (veh/h)	1234	-	-	268	298	819	-	-							
HCM Lane V/C Ratio	0.003	-	-	0.008	0.044	0.012	-	-							
HCM Control Delay (s)	7.9	0	-	18.5	17.6	9.4	0	-							
HCM Lane LOS	A	A	-	C	C	A	A	-							
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-							

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	+	+	+	+	+	+	+	+	+	+	+	+
Traffic Vol, veh/h	0	1	2	4	0	9	8	728	7	0	279	3
Future Vol, veh/h	0	1	2	4	0	9	8	728	7	0	279	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	2	4	0	10	9	791	8	0	303	3
Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1123	1122	305	1119	1119	795	306	0	0	799	0	0
Stage 1	305	305	-	813	813	-	-	-	-	-	-	-
Stage 2	818	817	-	306	306	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	183	206	735	184	207	388	1255	-	-	824	-	-
Stage 1	705	662	-	372	392	-	-	-	-	-	-	-
Stage 2	370	390	-	704	662	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	177	203	735	181	204	388	1255	-	-	824	-	-
Mov Cap-2 Maneuver	177	203	-	181	204	-	-	-	-	-	-	-
Stage 1	696	662	-	367	387	-	-	-	-	-	-	-
Stage 2	356	385	-	701	662	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	14.3			18.2			0.1			0		
HCM LOS	B			C								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1255	-	-	392	287	824	-	-				
HCM Lane V/C Ratio	0.007	-	-	0.008	0.049	-	-	-				
HCM Control Delay (s)	7.9	0	-	14.3	18.2	0	-	-				
HCM Lane LOS	A	A	-	B	C	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-				

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		A	B		
Traffic Vol, veh/h	6	4	3	714	281	11
Future Vol, veh/h	6	4	3	714	281	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	4	3	776	305	12

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1093	311	317	0	-	0
Stage 1	311	-	-	-	-	-
Stage 2	782	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	237	729	1243	-	-	-
Stage 1	743	-	-	-	-	-
Stage 2	451	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	236	729	1243	-	-	-
Mov Cap-2 Maneuver	236	-	-	-	-	-
Stage 1	740	-	-	-	-	-
Stage 2	451	-	-	-	-	-

Approach	EB	NB	SB			
HCM Control Delay, s	16.5	0	0			
HCM LOS	C					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1243	-	324	-	-	
HCM Lane V/C Ratio	0.003	-	0.034	-	-	
HCM Control Delay (s)	7.9	0	16.5	-	-	
HCM Lane LOS	A	A	C	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↖	↖	↑	↗	
Traffic Vol, veh/h	7	3	34	736	254	11
Future Vol, veh/h	7	3	34	736	254	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	275	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	3	37	800	276	12

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1156	282	288	0	-	0
Stage 1	282	-	-	-	-	-
Stage 2	874	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	217	757	1274	-	-	-
Stage 1	766	-	-	-	-	-
Stage 2	408	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	211	757	1274	-	-	-
Mov Cap-2 Maneuver	211	-	-	-	-	-
Stage 1	744	-	-	-	-	-
Stage 2	408	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.8	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1274	-	211	757	-	-
HCM Lane V/C Ratio	0.029	-	0.036	0.004	-	-
HCM Control Delay (s)	7.9	-	22.7	9.8	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0	-	-

Intersection

Int Delay, s/veh 1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	138	8	19	170	4	17	1	14	2	0	1
Future Vol, veh/h	1	138	8	19	170	4	17	1	14	2	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	150	9	21	185	4	18	1	15	2	0	1

Major/Minor	Major1	Major2			Minor1			Minor2				
Conflicting Flow All	189	0	0	159	0	0	387	388	155	394	390	187
Stage 1	-	-	-	-	-	-	157	157	-	229	229	-
Stage 2	-	-	-	-	-	-	230	231	-	165	161	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1385	-	-	1420	-	-	572	547	891	566	545	855
Stage 1	-	-	-	-	-	-	845	768	-	774	715	-
Stage 2	-	-	-	-	-	-	773	713	-	837	765	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1385	-	-	1420	-	-	563	537	891	548	535	855
Mov Cap-2 Maneuver	-	-	-	-	-	-	563	537	-	548	535	-
Stage 1	-	-	-	-	-	-	844	767	-	773	703	-
Stage 2	-	-	-	-	-	-	759	701	-	821	764	-

Approach	EB	WB			NB			SB					
HCM Control Delay, s	0.1	0.7			10.7			10.8					
HCM LOS					B			B					
<hr/>													
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBLn1				
Capacity (veh/h)	670	1385	-	-	1420	-	-	-	623				
HCM Lane V/C Ratio	0.052	0.001	-	-	0.015	-	-	-	0.005				
HCM Control Delay (s)	10.7	7.6	0	-	7.6	0	-	-	10.8				
HCM Lane LOS	B	A	A	-	A	A	-	-	B				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	-	0				

Intersection

Int Delay, s/veh 3.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↔	↔		
Traffic Vol, veh/h	28	26	11	46	61	3
Future Vol, veh/h	28	26	11	46	61	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	28	12	50	66	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	58	0	118 44
Stage 1	-	-	-	-	44 -
Stage 2	-	-	-	-	74 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1546	-	878 1026
Stage 1	-	-	-	-	978 -
Stage 2	-	-	-	-	949 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1546	-	871 1026
Mov Cap-2 Maneuver	-	-	-	-	871 -
Stage 1	-	-	-	-	978 -
Stage 2	-	-	-	-	941 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	877	-	-	1546	-
HCM Lane V/C Ratio	0.079	-	-	0.008	-
HCM Control Delay (s)	9.5	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection

Int Delay, s/veh 92.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	524	32	80	225	54	150
Future Vol, veh/h	524	32	80	225	54	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	570	35	87	245	59	163

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	560	141	222	0	-	0
Stage 1	141	-	-	-	-	-
Stage 2	419	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 489	907	1347	-	-	-
Stage 1	886	-	-	-	-	-
Stage 2	664	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 452	907	1347	-	-	-
Mov Cap-2 Maneuver	~ 452	-	-	-	-	-
Stage 1	820	-	-	-	-	-
Stage 2	664	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	175.4	2.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1347	-	465	-	-
HCM Lane V/C Ratio	0.065	-	1.3	-	-
HCM Control Delay (s)	7.9	0	175.4	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.2	-	26.1	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	15.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	B	T	R	U	↑
Traffic Vol, veh/h	276	42	58	403	114	115
Future Vol, veh/h	276	42	58	403	114	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	300	46	63	438	124	125
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	655	282	0	0	501	0
Stage 1	282	-	-	-	-	-
Stage 2	373	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	431	757	-	-	1063	-
Stage 1	766	-	-	-	-	-
Stage 2	696	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	381	757	-	-	1063	-
Mov Cap-2 Maneuver	381	-	-	-	-	-
Stage 1	766	-	-	-	-	-
Stage 2	615	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	46.9	0		4.4		
HCM LOS	E					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	408	1063	-	
HCM Lane V/C Ratio	-	-	0.847	0.117	-	
HCM Control Delay (s)	-	-	46.9	8.8	-	
HCM Lane LOS	-	-	E	A	-	
HCM 95th %tile Q(veh)	-	-	8.1	0.4	-	

HCM 6th Signalized Intersection Summary
1: SR-29 & Main Street & SR-53

Existing +Project AM
11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑↓		↑	↑	↑↑	↑↑	↑↑		↑	↑↑	↑↑
Traffic Volume (veh/h)	308	39	86	31	37	57	112	268	42	63	258	283
Future Volume (veh/h)	308	39	86	31	37	57	112	268	42	63	258	283
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	335	42	93	34	40	62	122	291	46	68	280	308
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	531	112	249	68	190	259	163	947	148	111	989	441
Arrive On Green	0.15	0.22	0.22	0.04	0.10	0.10	0.09	0.31	0.31	0.06	0.28	0.28
Sat Flow, veh/h	3456	518	1146	1781	1870	1585	1781	3079	481	1781	3554	1585
Grp Volume(v), veh/h	335	0	135	34	40	62	122	166	171	68	280	308
Grp Sat Flow(s), veh/h/ln	1728	0	1664	1781	1870	1585	1781	1777	1784	1781	1777	1585
Q Serve(g_s), s	4.4	0.0	3.3	0.9	0.9	1.6	3.2	3.4	3.5	1.8	3.0	8.3
Cycle Q Clear(g_c), s	4.4	0.0	3.3	0.9	0.9	1.6	3.2	3.4	3.5	1.8	3.0	8.3
Prop In Lane	1.00			1.00			1.00	1.00		0.27	1.00	1.00
Lane Grp Cap(c), veh/h	531	0	361	68	190	259	163	547	549	111	989	441
V/C Ratio(X)	0.63	0.00	0.37	0.50	0.21	0.24	0.75	0.30	0.31	0.61	0.28	0.70
Avail Cap(c_a), veh/h	1765	0	1197	353	760	743	799	1649	1655	501	2704	1206
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.0	0.0	16.0	22.6	19.8	17.5	21.3	12.7	12.7	21.9	13.6	15.5
Incr Delay (d2), s/veh	1.2	0.0	0.6	5.7	0.5	0.5	6.7	0.3	0.3	5.4	0.2	2.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.6	0.0	1.2	0.5	0.4	0.6	1.5	1.2	1.2	0.8	1.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	20.3	0.0	16.6	28.3	20.3	17.9	28.0	13.0	13.0	27.4	13.7	17.5
LnGrp LOS	C	A	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		470				136			459		656	
Approach Delay, s/veh		19.2				21.2			17.0		16.9	
Approach LOS		B				C			B		B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+R _c), s	7.5	19.3	6.3	14.9	8.9	17.8	11.9	9.4				
Change Period (Y+R _c), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	13.5	44.5	9.5	34.5	21.5	36.5	24.5	19.5				
Max Q Clear Time (g_c+l1), s	3.8	5.5	2.9	5.3	5.2	10.3	6.4	3.6				
Green Ext Time (p_c), s	0.1	2.1	0.0	0.8	0.3	3.0	1.1	0.3				
Intersection Summary												
HCM 6th Ctrl Delay			17.9									
HCM 6th LOS			B									

Intersection

Int Delay, s/veh 1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	0	17	0	44	0	343	7	43	380	2
Future Vol, veh/h	1	0	0	17	0	44	0	343	7	43	380	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	50	-	-	-	375	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	18	0	48	0	373	8	47	413	2

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	909	889	414	885	886	377	415	0	0	381	0	0
Stage 1	508	508	-	377	377	-	-	-	-	-	-	-
Stage 2	401	381	-	508	509	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	256	282	638	266	284	670	1144	-	-	1177	-	-
Stage 1	547	539	-	644	616	-	-	-	-	-	-	-
Stage 2	626	613	-	547	538	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	230	271	638	258	273	670	1144	-	-	1177	-	-
Mov Cap-2 Maneuver	230	271	-	258	273	-	-	-	-	-	-	-
Stage 1	547	517	-	644	616	-	-	-	-	-	-	-
Stage 2	581	613	-	525	516	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	20.7	13.4			0			0.8		
HCM LOS	C	B								
<hr/>										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR	
Capacity (veh/h)	1144	-	-	230	258	670	1177	-	-	
HCM Lane V/C Ratio	-	-	-	0.005	0.072	0.071	0.04	-	-	
HCM Control Delay (s)	0	-	-	20.7	20	10.8	8.2	-	-	
HCM Lane LOS	A	-	-	C	C	B	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0.2	0.1	-	-	

Intersection

Int Delay, s/veh 3.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
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Lane Configurations						
Traffic Vol, veh/h	110	62	255	49	21	378
Future Vol, veh/h	110	62	255	49	21	378
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	120	67	277	53	23	411

Major/Minor	Minor1	Major1	Major2
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Conflicting Flow All	761	304	0	0	330	0
Stage 1	304	-	-	-	-	-
Stage 2	457	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	373	736	-	-	1229	-
Stage 1	748	-	-	-	-	-
Stage 2	638	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	366	736	-	-	1229	-
Mov Cap-2 Maneuver	366	-	-	-	-	-
Stage 1	748	-	-	-	-	-
Stage 2	626	-	-	-	-	-

Approach	WB	NB	SB
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HCM Control Delay, s	18.7	0	0.4
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HCM LOS	C
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Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	447	1229	-
HCM Lane V/C Ratio	-	-	0.418	0.019	-
HCM Control Delay (s)	-	-	18.7	8	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	2	0.1	-

Intersection

Int Delay, s/veh 1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	1	48	0	41	1	366	12	11	498	1
Future Vol, veh/h	3	0	1	48	0	41	1	366	12	11	498	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	50	-	-	50	275	-	275	375	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	1	52	0	45	1	398	13	12	541	1

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	994	978	541	966	966	398	542	0	0	411	0	0
Stage 1	565	565	-	400	400	-	-	-	-	-	-	-
Stage 2	429	413	-	566	566	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	224	250	541	234	255	652	1027	-	-	1148	-	-
Stage 1	510	508	-	626	602	-	-	-	-	-	-	-
Stage 2	604	594	-	509	507	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	207	247	541	231	252	652	1027	-	-	1148	-	-
Mov Cap-2 Maneuver	207	247	-	231	252	-	-	-	-	-	-	-
Stage 1	509	503	-	625	601	-	-	-	-	-	-	-
Stage 2	562	593	-	503	502	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	20	18.6			0			0.2		
HCM LOS	C	C								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1027	-	-	207	541	231	652	1148	-	-
HCM Lane V/C Ratio	0.001	-	-	0.016	0.002	0.226	0.068	0.01	-	-
HCM Control Delay (s)	8.5	-	-	22.7	11.7	25.1	10.9	8.2	-	-
HCM Lane LOS	A	-	-	C	B	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0.8	0.2	0	-	-

Intersection			
Intersection Delay, s/veh	10.4		
Intersection LOS	B		
Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	457	464	625
Demand Flow Rate, veh/h	466	474	638
Vehicles Circulating, veh/h	292	93	355
Vehicles Exiting, veh/h	275	900	403
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	8.8	6.6	14.4
Approach LOS	A	A	B
Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	466	474	638
Cap Entry Lane, veh/h	1024	1255	961
Entry HV Adj Factor	0.981	0.979	0.980
Flow Entry, veh/h	457	464	625
Cap Entry, veh/h	1005	1229	942
V/C Ratio	0.455	0.378	0.664
Control Delay, s/veh	8.8	6.6	14.4
LOS	A	A	B
95th %tile Queue, veh	2	2	5

Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	0	1	3	1	4	5	389	3	1	779	21
Future Vol, veh/h	10	0	1	3	1	4	5	389	3	1	779	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	50	-	-	-	125	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	1	3	1	4	5	423	3	1	847	23

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1298	1297	859	1296	1307	425	870	0	0	426	0	0
Stage 1	861	861	-	435	435	-	-	-	-	-	-	-
Stage 2	437	436	-	861	872	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	139	162	356	139	160	629	775	-	-	1133	-	-
Stage 1	350	372	-	600	580	-	-	-	-	-	-	-
Stage 2	598	580	-	350	368	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	136	161	356	138	159	629	775	-	-	1133	-	-
Mov Cap-2 Maneuver	136	161	-	138	159	-	-	-	-	-	-	-
Stage 1	348	372	-	596	577	-	-	-	-	-	-	-
Stage 2	589	577	-	349	368	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB				
HCM Control Delay, s	32.1	21			0.1			0				
HCM LOS	D	C										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	775	-	-	136	356	233	1133	-	-			
HCM Lane V/C Ratio	0.007	-	-	0.08	0.003	0.037	0.001	-	-			
HCM Control Delay (s)	9.7	-	-	33.8	15.1	21	8.2	-	-			
HCM Lane LOS	A	-	-	D	C	C	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	0.3	0	0.1	0	-	-			

Intersection

Int Delay, s/veh 3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↑	↖	↑	
Traffic Vol, veh/h	60	77	302	70	114	647
Future Vol, veh/h	60	77	302	70	114	647
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	75	-	-	325	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	84	328	76	124	703

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1317	366	0	0	404
Stage 1	366	-	-	-	-
Stage 2	951	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	174	679	-	-	1155
Stage 1	702	-	-	-	-
Stage 2	375	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	155	679	-	-	1155
Mov Cap-2 Maneuver	155	-	-	-	-
Stage 1	702	-	-	-	-
Stage 2	335	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.5	0	1.3
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	155	679	1155	-
HCM Lane V/C Ratio	-	-	0.421	0.123	0.107	-
HCM Control Delay (s)	-	-	44.1	11	8.5	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	1.9	0.4	0.4	-

Intersection

Int Delay, s/veh 0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↔	↔		
Traffic Vol, veh/h	192	6	0	151	5	2
Future Vol, veh/h	192	6	0	151	5	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	209	7	0	164	5	2

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	216	0	377 213
Stage 1	-	-	-	-	213 -
Stage 2	-	-	-	-	164 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1354	-	625 827
Stage 1	-	-	-	-	823 -
Stage 2	-	-	-	-	865 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1354	-	625 827
Mov Cap-2 Maneuver	-	-	-	-	625 -
Stage 1	-	-	-	-	823 -
Stage 2	-	-	-	-	865 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.4
HCM LOS		B	

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	672	-	-	1354	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	10.4	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection

Int Delay, s/veh 0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↔	↔		
Traffic Vol, veh/h	176	2	2	131	5	0
Future Vol, veh/h	176	2	2	131	5	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	191	2	2	142	5	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	193	0	338 192
Stage 1	-	-	-	-	192 -
Stage 2	-	-	-	-	146 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1380	-	658 850
Stage 1	-	-	-	-	841 -
Stage 2	-	-	-	-	881 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1380	-	657 850
Mov Cap-2 Maneuver	-	-	-	-	657 -
Stage 1	-	-	-	-	841 -
Stage 2	-	-	-	-	879 -

Approach	EB	WB	NB	
HCM Control Delay, s	0	0.1	10.5	
HCM LOS			B	

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	657	-	-	1380	-
HCM Lane V/C Ratio	0.008	-	-	0.002	-
HCM Control Delay (s)	10.5	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM 6th Signalized Intersection Summary
10: Calistoga Road (SR-29)/SR-29 & Wardlaw Street

Existing +Project AM

11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	6	39	6	33	17	10	288	1	11	494	316
Future Volume (veh/h)	141	6	39	6	33	17	10	288	1	11	494	316
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	153	7	42	7	36	18	11	313	1	12	537	343
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	332	18	56	101	213	96	306	1160	4	737	664	424
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.62	0.62	0.62	0.62	0.62	0.62
Sat Flow, veh/h	1068	96	306	81	1161	520	631	1863	6	1066	1067	681
Grp Volume(v), veh/h	202	0	0	61	0	0	11	0	314	12	0	880
Grp Sat Flow(s), veh/h/ln	1469	0	0	1763	0	0	631	0	1869	1066	0	1748
Q Serve(g_s), s	4.6	0.0	0.0	0.0	0.0	0.0	0.6	0.0	3.5	0.2	0.0	17.8
Cycle Q Clear(g_c), s	5.9	0.0	0.0	1.3	0.0	0.0	18.4	0.0	3.5	3.8	0.0	17.8
Prop In Lane	0.76			0.21	0.11		0.30	1.00		0.00	1.00	0.39
Lane Grp Cap(c), veh/h	406	0	0	410	0	0	306	0	1164	737	0	1088
V/C Ratio(X)	0.50	0.00	0.00	0.15	0.00	0.00	0.04	0.00	0.27	0.02	0.00	0.81
Avail Cap(c_a), veh/h	799	0	0	886	0	0	721	0	2394	1439	0	2239
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.8	0.0	0.0	16.0	0.0	0.0	13.7	0.0	4.0	4.8	0.0	6.7
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.0	1.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.9	0.0	0.0	0.5	0.0	0.0	0.1	0.0	0.8	0.0	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.7	0.0	0.0	16.2	0.0	0.0	13.7	0.0	4.1	4.8	0.0	8.2
LnGrp LOS	B	A	A	B	A	A	B	A	A	A	A	A
Approach Vol, veh/h	202				61			325			892	
Approach Delay, s/veh	18.7				16.2			4.4			8.1	
Approach LOS	B				B			A			A	
Timer - Assigned Phs	2			4			6		8			
Phs Duration (G+Y+R _c), s	33.4			13.0			33.4		13.0			
Change Period (Y+R _c), s	4.5			4.5			4.5		4.5			
Max Green Setting (Gmax), s	59.5			21.5			59.5		21.5			
Max Q Clear Time (g_c+l1), s	20.4			7.9			19.8		3.3			
Green Ext Time (p_c), s	2.2			0.9			9.1		0.2			
Intersection Summary												
HCM 6th Ctrl Delay				9.1								
HCM 6th LOS				A								

Intersection

Int Delay, s/veh 1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	2	14	3	3	4	12	268	9	11	609	4
Future Vol, veh/h	21	2	14	3	3	4	12	268	9	11	609	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	2	15	3	3	4	13	291	10	12	662	4

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1014	1015	664	1019	1012	296	666	0	0	301	0	0
Stage 1	688	688	-	322	322	-	-	-	-	-	-	-
Stage 2	326	327	-	697	690	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	217	238	461	215	239	743	923	-	-	1260	-	-
Stage 1	436	447	-	690	651	-	-	-	-	-	-	-
Stage 2	687	648	-	431	446	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	208	230	461	201	231	743	923	-	-	1260	-	-
Mov Cap-2 Maneuver	208	230	-	201	231	-	-	-	-	-	-	-
Stage 1	429	440	-	678	640	-	-	-	-	-	-	-
Stage 2	668	637	-	408	439	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	21.1	17.5			0.4			0.1		
HCM LOS	C	C								
<hr/>										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	923	-	-	264	300	1260	-	-		
HCM Lane V/C Ratio	0.014	-	-	0.152	0.036	0.009	-	-		
HCM Control Delay (s)	9	0	-	21.1	17.5	7.9	0	-		
HCM Lane LOS	A	A	-	C	C	A	A	-		
HCM 95th %tile Q(veh)	0	-	-	0.5	0.1	0	-	-		

HCM 6th Signalized Intersection Summary
12: Calistoga Road (SR-29) & Highway 175/Main Street

Existing +Project AM

11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	21	98	22	14	12	31	210	6	7	483	77
Future Volume (veh/h)	106	21	98	22	14	12	31	210	6	7	483	77
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	115	23	107	24	15	13	34	228	7	8	525	84
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	306	62	157	292	168	98	173	775	22	118	758	120
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	600	266	672	542	719	420	94	1603	45	7	1567	248
Grp Volume(v), veh/h	245	0	0	52	0	0	269	0	0	617	0	0
Grp Sat Flow(s), veh/h/ln	1538	0	0	1680	0	0	1742	0	0	1822	0	0
Q Serve(g_s), s	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.5	0.0	0.0	0.7	0.0	0.0	2.8	0.0	0.0	8.4	0.0	0.0
Prop In Lane	0.47			0.44	0.46		0.25	0.13		0.03	0.01	0.14
Lane Grp Cap(c), veh/h	525	0	0	558	0	0	970	0	0	995	0	0
V/C Ratio(X)	0.47	0.00	0.00	0.09	0.00	0.00	0.28	0.00	0.00	0.62	0.00	0.00
Avail Cap(c_a), veh/h	1523	0	0	1536	0	0	2840	0	0	3113	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.0	0.0	0.0	9.6	0.0	0.0	5.0	0.0	0.0	6.4	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.2	0.0	0.0	0.2	0.0	0.0	0.6	0.0	0.0	1.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.7	0.0	0.0	9.7	0.0	0.0	5.1	0.0	0.0	7.0	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h	245				52			269			617	
Approach Delay, s/veh	11.7				9.7			5.1			7.0	
Approach LOS	B				A			A			A	
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+R _c), s	19.9			11.9			19.9			11.9		
Change Period (Y+R _c), s	4.5			4.5			4.5			4.5		
Max Green Setting (Gmax), s	52.5			28.5			52.5			28.5		
Max Q Clear Time (g_c+l1), s	4.8			6.5			10.4			2.7		
Green Ext Time (p_c), s	1.9			1.5			5.0			0.2		
Intersection Summary												
HCM 6th Ctrl Delay				7.7								
HCM 6th LOS				A								

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	15	5	7	19	7	239	11	31	558	40
Future Vol, veh/h	3	1	15	5	7	19	7	239	11	31	558	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	16	5	8	21	8	260	12	34	607	43

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	994	985	629	987	1000	266	650	0	0	272	0	0
Stage 1	697	697	-	282	282	-	-	-	-	-	-	-
Stage 2	297	288	-	705	718	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	224	248	482	226	243	773	936	-	-	1291	-	-
Stage 1	431	443	-	725	678	-	-	-	-	-	-	-
Stage 2	712	674	-	427	433	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	204	235	482	209	230	773	936	-	-	1291	-	-
Mov Cap-2 Maneuver	204	235	-	209	230	-	-	-	-	-	-	-
Stage 1	427	424	-	718	671	-	-	-	-	-	-	-
Stage 2	678	667	-	394	415	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	15	15			0.2			0.4		
HCM LOS	C	C								
<hr/>										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	936	-	-	379	393	1291	-	-		
HCM Lane V/C Ratio	0.008	-	-	0.054	0.086	0.026	-	-		
HCM Control Delay (s)	8.9	0	-	15	15	7.9	0	-		
HCM Lane LOS	A	A	-	C	C	A	A	-		
HCM 95th %tile Q(veh)	0	-	-	0.2	0.3	0.1	-	-		

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	2	7	4	0	1	1	224	3	8	567	7
Future Vol, veh/h	3	2	7	4	0	1	1	224	3	8	567	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	2	8	4	0	1	1	243	3	9	616	8

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	885	886	620	890	889	245	624	0	0	246	0	0
Stage 1	638	638	-	247	247	-	-	-	-	-	-	-
Stage 2	247	248	-	643	642	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	266	284	488	264	282	794	957	-	-	1320	-	-
Stage 1	465	471	-	757	702	-	-	-	-	-	-	-
Stage 2	757	701	-	462	469	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	263	281	488	256	279	794	957	-	-	1320	-	-
Mov Cap-2 Maneuver	263	281	-	256	279	-	-	-	-	-	-	-
Stage 1	465	466	-	756	701	-	-	-	-	-	-	-
Stage 2	755	700	-	448	464	-	-	-	-	-	-	-

Approach	EB	WB			NB		SB	
HCM Control Delay, s	15.2	17.4			0		0.1	
HCM LOS	C	C						
<hr/>								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	957	-	-	365	296	1320	-	-
HCM Lane V/C Ratio	0.001	-	-	0.036	0.018	0.007	-	-
HCM Control Delay (s)	8.8	0	-	15.2	17.4	7.7	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	1	2	0	3	0	231	0	5	568	3
Future Vol, veh/h	2	0	1	2	0	3	0	231	0	5	568	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	1	2	0	3	0	251	0	5	617	3

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	882	880	619	880	881	251	620	0	0	251	0	0
Stage 1	629	629	-	251	251	-	-	-	-	-	-	-
Stage 2	253	251	-	629	630	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	267	286	489	268	285	788	960	-	-	1314	-	-
Stage 1	470	475	-	753	699	-	-	-	-	-	-	-
Stage 2	751	699	-	470	475	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	265	284	489	266	283	788	960	-	-	1314	-	-
Mov Cap-2 Maneuver	265	284	-	266	283	-	-	-	-	-	-	-
Stage 1	470	472	-	753	699	-	-	-	-	-	-	-
Stage 2	748	699	-	466	472	-	-	-	-	-	-	-

Approach	EB	WB			NB		SB	
HCM Control Delay, s	16.6	13.3			0		0.1	
HCM LOS	C	B						
<hr/>								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	960	-	-	313	441	1314	-	-
HCM Lane V/C Ratio	-	-	-	0.01	0.012	0.004	-	-
HCM Control Delay (s)	0	-	-	16.6	13.3	7.8	0	-
HCM Lane LOS	A	-	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		A	B		
Traffic Vol, veh/h	9	5	1	210	570	3
Future Vol, veh/h	9	5	1	210	570	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	5	1	228	620	3

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	852	622	623	0	-	0
Stage 1	622	-	-	-	-	-
Stage 2	230	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	330	487	958	-	-	-
Stage 1	535	-	-	-	-	-
Stage 2	808	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	330	487	958	-	-	-
Mov Cap-2 Maneuver	330	-	-	-	-	-
Stage 1	534	-	-	-	-	-
Stage 2	808	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.1	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	958	-	373	-	-
HCM Lane V/C Ratio	0.001	-	0.041	-	-
HCM Control Delay (s)	8.8	0	15.1	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↖	↖	↑	↗	
Traffic Vol, veh/h	7	9	1	203	555	7
Future Vol, veh/h	7	9	1	203	555	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	275	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	10	1	221	603	8

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	830	607	611	0	-	0
Stage 1	607	-	-	-	-	-
Stage 2	223	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	340	496	968	-	-	-
Stage 1	544	-	-	-	-	-
Stage 2	814	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	340	496	968	-	-	-
Mov Cap-2 Maneuver	340	-	-	-	-	-
Stage 1	543	-	-	-	-	-
Stage 2	814	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	968	-	340	496	-	-
HCM Lane V/C Ratio	0.001	-	0.022	0.02	-	-
HCM Control Delay (s)	8.7	-	15.8	12.4	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.1	-	-

Intersection

Int Delay, s/veh 0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	182	13	3	84	0	9	0	6	1	0	0
Future Vol, veh/h	1	182	13	3	84	0	9	0	6	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	198	14	3	91	0	10	0	7	1	0	0

Major/Minor	Major1	Major2		Minor1		Minor2						
Conflicting Flow All	91	0	0	212	0	0	304	304	205	308	311	91
Stage 1	-	-	-	-	-	-	207	207	-	97	97	-
Stage 2	-	-	-	-	-	-	97	97	-	211	214	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1504	-	-	1358	-	-	648	609	836	644	604	967
Stage 1	-	-	-	-	-	-	795	731	-	910	815	-
Stage 2	-	-	-	-	-	-	910	815	-	791	725	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1504	-	-	1358	-	-	647	607	836	638	602	967
Mov Cap-2 Maneuver	-	-	-	-	-	-	647	607	-	638	602	-
Stage 1	-	-	-	-	-	-	794	730	-	909	813	-
Stage 2	-	-	-	-	-	-	908	813	-	784	724	-

Approach	EB	WB		NB		SB		
HCM Control Delay, s	0	0.3		10.2		10.7		
HCM LOS				B		B		
<hr/>								
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	711	1504	-	-	1358	-	-	638
HCM Lane V/C Ratio	0.023	0.001	-	-	0.002	-	-	0.002
HCM Control Delay (s)	10.2	7.4	0	-	7.7	0	-	10.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection

Int Delay, s/veh 1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
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Lane Configurations						
Traffic Vol, veh/h	50	74	13	32	27	2
Future Vol, veh/h	50	74	13	32	27	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	80	14	35	29	2

Major/Minor	Major1	Major2	Minor1
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Conflicting Flow All	0	0	134	0	157	94
Stage 1	-	-	-	-	94	-
Stage 2	-	-	-	-	63	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1451	-	834	963
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	960	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1451	-	826	963
Mov Cap-2 Maneuver	-	-	-	-	826	-
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	950	-

Approach	EB	WB	NB
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HCM Control Delay, s	0	2.2	9.5
HCM LOS		A	

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	834	-	-	1451	-
HCM Lane V/C Ratio	0.038	-	-	0.01	-
HCM Control Delay (s)	9.5	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection

Int Delay, s/veh 2.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	111	25	17	35	186	430
Future Vol, veh/h	111	25	17	35	186	430
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	121	27	18	38	202	467

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	510	436	669	0	-	0
Stage 1	436	-	-	-	-	-
Stage 2	74	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	523	620	921	-	-	-
Stage 1	652	-	-	-	-	-
Stage 2	949	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	513	620	921	-	-	-
Mov Cap-2 Maneuver	513	-	-	-	-	-
Stage 1	639	-	-	-	-	-
Stage 2	949	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	14.4	2.9	0
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HCM LOS	B
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Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	921	-	530	-	-
HCM Lane V/C Ratio	0.02	-	0.279	-	-
HCM Control Delay (s)	9	0	14.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.1	-	-

Intersection

Int Delay, s/veh 19.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	B	T	T	U	U
Traffic Vol, veh/h	491	37	74	95	28	89
Future Vol, veh/h	491	37	74	95	28	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	534	40	80	103	30	97

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	289	132	0	0	183
Stage 1	132	-	-	-	-
Stage 2	157	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	702	917	-	-	1392
Stage 1	894	-	-	-	-
Stage 2	871	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	687	917	-	-	1392
Mov Cap-2 Maneuver	687	-	-	-	-
Stage 1	894	-	-	-	-
Stage 2	852	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	29.3	0	1.8
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	699	1392	-
HCM Lane V/C Ratio	-	-	0.821	0.022	-
HCM Control Delay (s)	-	-	29.3	7.6	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	8.8	0.1	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	166	123	1	1	10
Future Vol, veh/h	10	166	123	1	1	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	180	134	1	1	11
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	135	0	-	0	337	135
Stage 1	-	-	-	-	135	-
Stage 2	-	-	-	-	202	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1449	-	-	-	658	914
Stage 1	-	-	-	-	891	-
Stage 2	-	-	-	-	832	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1449	-	-	-	653	914
Mov Cap-2 Maneuver	-	-	-	-	653	-
Stage 1	-	-	-	-	884	-
Stage 2	-	-	-	-	832	-
Approach	EB	WB	SB			
HCM Control Delay, s	0.4	0	9.1			
HCM LOS			A			
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1449	-	-	-	882	
HCM Lane V/C Ratio	0.008	-	-	-	0.014	
HCM Control Delay (s)	7.5	0	-	-	9.1	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Intersection

Int Delay, s/veh 1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	142	5	1	99	2	5	0	1	2	0	20
Future Vol, veh/h	20	142	5	1	99	2	5	0	1	2	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	154	5	1	108	2	5	0	1	2	0	22

Major/Minor	Major1	Major2		Minor1		Minor2						
Conflicting Flow All	110	0	0	159	0	0	323	313	157	312	314	109
Stage 1	-	-	-	-	-	-	201	201	-	111	111	-
Stage 2	-	-	-	-	-	-	122	112	-	201	203	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1480	-	-	1420	-	-	630	602	889	641	601	945
Stage 1	-	-	-	-	-	-	801	735	-	894	804	-
Stage 2	-	-	-	-	-	-	882	803	-	801	733	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1480	-	-	1420	-	-	607	592	889	632	591	945
Mov Cap-2 Maneuver	-	-	-	-	-	-	607	592	-	632	591	-
Stage 1	-	-	-	-	-	-	788	723	-	880	803	-
Stage 2	-	-	-	-	-	-	861	802	-	787	721	-

Approach	EB	WB		NB		SB		
HCM Control Delay, s	0.9	0.1		10.7		9.1		
HCM LOS				B		A		
<hr/>								
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	641	1480	-	-	1420	-	-	904
HCM Lane V/C Ratio	0.01	0.015	-	-	0.001	-	-	0.026
HCM Control Delay (s)	10.7	7.5	0	-	7.5	0	-	9.1
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Intersection

Int Delay, s/veh 4.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	63	82	39	8	8	63
Future Vol, veh/h	63	82	39	8	8	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	89	42	9	9	68

Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	51	0	-	0	272	47
Stage 1	-	-	-	-	47	-
Stage 2	-	-	-	-	225	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1555	-	-	-	717	1022
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	812	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1555	-	-	-	684	1022
Mov Cap-2 Maneuver	-	-	-	-	684	-
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	812	-

Approach	EB	WB	SB
HCM Control Delay, s	3.2	0	9
HCM LOS		A	

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1555	-	-	-	968
HCM Lane V/C Ratio	0.044	-	-	-	0.08
HCM Control Delay (s)	7.4	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

HCM 6th Signalized Intersection Summary
1: SR-29 & Main Street & SR-53

Existing +Project PM
11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑		↑	↑	↑	↑↑	↑↑		↑	↑↑	↑
Traffic Volume (veh/h)	302	41	105	54	43	88	133	428	57	93	348	358
Future Volume (veh/h)	302	41	105	54	43	88	133	428	57	93	348	358
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	328	45	114	59	47	96	145	465	62	101	378	389
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	494	87	220	96	180	271	192	1140	151	133	1167	521
Arrive On Green	0.14	0.19	0.19	0.05	0.10	0.10	0.11	0.36	0.36	0.07	0.33	0.33
Sat Flow, veh/h	3456	469	1188	1781	1870	1585	1781	3153	418	1781	3554	1585
Grp Volume(v), veh/h	328	0	159	59	47	96	145	261	266	101	378	389
Grp Sat Flow(s), veh/h/ln	1728	0	1657	1781	1870	1585	1781	1777	1795	1781	1777	1585
Q Serve(g_s), s	5.0	0.0	4.8	1.8	1.3	3.0	4.4	6.1	6.2	3.1	4.4	12.1
Cycle Q Clear(g_c), s	5.0	0.0	4.8	1.8	1.3	3.0	4.4	6.1	6.2	3.1	4.4	12.1
Prop In Lane	1.00		0.72	1.00		1.00	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	494	0	307	96	180	271	192	643	649	133	1167	521
V/C Ratio(X)	0.66	0.00	0.52	0.62	0.26	0.35	0.76	0.41	0.41	0.76	0.32	0.75
Avail Cap(c_a), veh/h	1339	0	881	369	657	675	690	1425	1440	530	2530	1129
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.5	0.0	20.4	25.7	23.2	20.3	24.0	13.3	13.3	25.2	14.0	16.6
Incr Delay (d2), s/veh	1.5	0.0	1.3	6.3	0.8	0.8	5.9	0.4	0.4	8.6	0.2	2.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.0	0.0	1.8	0.9	0.6	1.1	2.0	2.2	2.2	1.5	1.6	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.1	0.0	21.7	31.9	24.0	21.1	30.0	13.7	13.7	33.8	14.2	18.7
LnGrp LOS	C	A	C	C	C	C	C	B	B	C	B	B
Approach Vol, veh/h		487			202			672			868	
Approach Delay, s/veh		23.3			24.9			17.2			18.5	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+R _c), s	8.6	24.6	7.5	14.8	10.5	22.7	12.4	9.8				
Change Period (Y+R _c), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	16.5	44.5	11.5	29.5	21.5	39.5	21.5	19.5				
Max Q Clear Time (g_c+l1), s	5.1	8.2	3.8	6.8	6.4	14.1	7.0	5.0				
Green Ext Time (p_c), s	0.2	3.5	0.1	0.9	0.3	4.1	1.0	0.4				
Intersection Summary												
HCM 6th Ctrl Delay			19.7									
HCM 6th LOS			B									

Intersection

Int Delay, s/veh 1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	0	10	0	47	0	597	19	77	465	2
Future Vol, veh/h	1	0	0	10	0	47	0	597	19	77	465	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	50	-	-	-	375	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	11	0	51	0	649	21	84	505	2

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1359	1344	506	1334	1335	660	507	0	0	670	0	0
Stage 1	674	674	-	660	660	-	-	-	-	-	-	-
Stage 2	685	670	-	674	675	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	126	152	566	131	154	463	1058	-	-	920	-	-
Stage 1	444	454	-	452	460	-	-	-	-	-	-	-
Stage 2	438	455	-	444	453	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	104	138	566	122	140	463	1058	-	-	920	-	-
Mov Cap-2 Maneuver	104	138	-	122	140	-	-	-	-	-	-	-
Stage 1	444	413	-	452	460	-	-	-	-	-	-	-
Stage 2	390	455	-	403	412	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	40	17.9			0			1.3		
HCM LOS	E	C								
<hr/>										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR	
Capacity (veh/h)	1058	-	-	104	122	463	920	-	-	
HCM Lane V/C Ratio	-	-	-	0.01	0.089	0.11	0.091	-	-	
HCM Control Delay (s)	0	-	-	40	37.4	13.7	9.3	-	-	
HCM Lane LOS	A	-	-	E	E	B	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0.4	0.3	-	-	

Intersection

Int Delay, s/veh 4.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	B	T	T	U	U
Traffic Vol, veh/h	64	47	585	137	93	424
Future Vol, veh/h	64	47	585	137	93	424
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	70	51	636	149	101	461

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1374	711	0	0	785
Stage 1	711	-	-	-	-
Stage 2	663	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	160	433	-	-	834
Stage 1	487	-	-	-	-
Stage 2	512	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	141	433	-	-	834
Mov Cap-2 Maneuver	141	-	-	-	-
Stage 1	487	-	-	-	-
Stage 2	450	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	48.5	0	1.8
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	197	834	-
HCM Lane V/C Ratio	-	-	0.612	0.121	-
HCM Control Delay (s)	-	-	48.5	9.9	-
HCM Lane LOS	-	-	E	A	-
HCM 95th %tile Q(veh)	-	-	3.5	0.4	-

Intersection

Int Delay, s/veh 1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↑ ↘	↑ ↘	↑ ↘	↖ ↗	↖ ↗	↖ ↗
Traffic Vol, veh/h	3	1	6	16	0	25	2	731	40	30	457	1
Future Vol, veh/h	3	1	6	16	0	25	2	731	40	30	457	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	50	-	-	50	275	-	275	375	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	7	17	0	27	2	795	43	33	497	1

Major/Minor	Minor2	Minor1			Major1			Major2			
Conflicting Flow All	1397	1405	497	1367	1363	795	498	0	0	838	0
Stage 1	563	563	-	799	799	-	-	-	-	-	-
Stage 2	834	842	-	568	564	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-
Pot Cap-1 Maneuver	118	139	573	124	148	388	1066	-	-	796	-
Stage 1	511	509	-	379	398	-	-	-	-	-	-
Stage 2	362	380	-	508	508	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-
Mov Cap-1 Maneuver	106	133	573	118	142	388	1066	-	-	796	-
Mov Cap-2 Maneuver	106	133	-	118	142	-	-	-	-	-	-
Stage 1	510	488	-	378	397	-	-	-	-	-	-
Stage 2	336	379	-	480	487	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.2	25	0	0.6
HCM LOS	C	D		
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Minor Lane/Major Mvmt	NBL	NBT	NBR	E BLn1 E BLn2 W BLn1 W BLn2
Capacity (veh/h)	1066	-	-	112 573 118 388
HCM Lane V/C Ratio	0.002	-	-	0.039 0.011 0.147 0.07 0.041
HCM Control Delay (s)	8.4	-	-	38.4 11.4 40.7 15 9.7
HCM Lane LOS	A	-	-	E B E C A
HCM 95th %tile Q(veh)	0	-	-	0.1 0 0.5 0.2 0.1

Intersection			
Intersection Delay, s/veh	20.8		
Intersection LOS	C		
Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	232	1106	478
Demand Flow Rate, veh/h	237	1128	487
Vehicles Circulating, veh/h	754	113	143
Vehicles Exiting, veh/h	487	517	848
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	10.9	28.7	7.2
Approach LOS	B	D	A
Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	237	1128	487
Cap Entry Lane, veh/h	640	1230	1193
Entry HV Adj Factor	0.979	0.981	0.981
Flow Entry, veh/h	232	1106	478
Cap Entry, veh/h	626	1206	1170
V/C Ratio	0.371	0.917	0.408
Control Delay, s/veh	10.9	28.7	7.2
LOS	B	D	A
95th %tile Queue, veh	2	15	2

Intersection

Int Delay, s/veh 0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	0	3	5	0	10	2	990	3	6	437	3
Future Vol, veh/h	15	0	3	5	0	10	2	990	3	6	437	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	50	-	-	-	125	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	0	3	5	0	11	2	1076	3	7	475	3

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1578	1574	477	1574	1574	1078	478	0	0	1079	0	0
Stage 1	491	491	-	1082	1082	-	-	-	-	-	-	-
Stage 2	1087	1083	-	492	492	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	89	110	588	89	110	266	1084	-	-	646	-	-
Stage 1	559	548	-	263	294	-	-	-	-	-	-	-
Stage 2	262	293	-	558	548	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	85	109	588	88	109	266	1084	-	-	646	-	-
Mov Cap-2 Maneuver	85	109	-	88	109	-	-	-	-	-	-	-
Stage 1	558	542	-	262	293	-	-	-	-	-	-	-
Stage 2	251	292	-	549	542	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB			
HCM Control Delay, s	49.5	30.2			0			0.1			
HCM LOS	E	D									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	1084	-	-	85	588	159	646	-	-		
HCM Lane V/C Ratio	0.002	-	-	0.192	0.006	0.103	0.01	-	-		
HCM Control Delay (s)	8.3	-	-	57.1	11.2	30.2	10.6	-	-		
HCM Lane LOS	A	-	-	F	B	D	B	-	-		
HCM 95th %tile Q(veh)	0	-	-	0.7	0	0.3	0	-	-		

Intersection

Int Delay, s/veh 39

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖ ↗ ↘ ↖ ↙ ↘					
Traffic Vol, veh/h	132	222	797	152	164	265
Future Vol, veh/h	132	222	797	152	164	265
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	75	-	-	325	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	143	241	866	165	178	288

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1593	949	0	0	1031
Stage 1	949	-	-	-	-
Stage 2	644	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	~ 118	316	-	-	674
Stage 1	376	-	-	-	-
Stage 2	523	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	~ 87	316	-	-	674
Mov Cap-2 Maneuver	~ 87	-	-	-	-
Stage 1	376	-	-	-	-
Stage 2	385	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	185.2	0	4.7
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	87	316	674	-
HCM Lane V/C Ratio	-	-	1.649	0.764	0.264	-
HCM Control Delay (s)	-	\$ 420.6	45.3	12.3	-	-
HCM Lane LOS	-	-	F	E	B	-
HCM 95th %tile Q(veh)	-	-	11.7	5.9	1.1	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	319	3	2	353	4	1
Future Vol, veh/h	319	3	2	353	4	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	347	3	2	384	4	1

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	350	0	737
Stage 1	-	-	-	-	349
Stage 2	-	-	-	-	388
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1209	-	386
Stage 1	-	-	-	-	714
Stage 2	-	-	-	-	686
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1209	-	385
Mov Cap-2 Maneuver	-	-	-	-	385
Stage 1	-	-	-	-	714
Stage 2	-	-	-	-	685

Approach	EB	WB	NB	
HCM Control Delay, s	0	0	13.6	
HCM LOS			B	

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	423	-	-	1209	-	
HCM Lane V/C Ratio	0.013	-	-	0.002	-	
HCM Control Delay (s)	13.6	-	-	8	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Intersection

Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	310	3	1	330	2	0
Future Vol, veh/h	310	3	1	330	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	337	3	1	359	2	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	340	0	700
Stage 1	-	-	-	-	339
Stage 2	-	-	-	-	361
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1219	-	405
Stage 1	-	-	-	-	722
Stage 2	-	-	-	-	705
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1219	-	405
Mov Cap-2 Maneuver	-	-	-	-	405
Stage 1	-	-	-	-	722
Stage 2	-	-	-	-	704

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.9
HCM LOS		B	

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	405	-	-	1219	-
HCM Lane V/C Ratio	0.005	-	-	0.001	-
HCM Control Delay (s)	13.9	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM 6th Signalized Intersection Summary
10: Calistoga Road (SR-29)/SR-29 & Wardlaw Street

Existing +Project PM

11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	3	35	35	10	41	14	823	13	8	363	108
Future Volume (veh/h)	107	3	35	35	10	41	14	823	13	8	363	108
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00			1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	116	3	38	38	11	45	15	895	14	9	395	117
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	316	10	55	197	57	119	606	1158	18	348	874	259
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.63	0.63	0.63	0.63	0.63	0.63
Sat Flow, veh/h	1096	68	372	490	386	805	888	1836	29	614	1386	411
Grp Volume(v), veh/h	157	0	0	94	0	0	15	0	909	9	0	512
Grp Sat Flow(s), veh/h/ln	1536	0	0	1681	0	0	888	0	1865	614	0	1796
Q Serve(g_s), s	1.8	0.0	0.0	0.0	0.0	0.0	0.4	0.0	14.3	0.4	0.0	6.0
Cycle Q Clear(g_c), s	3.7	0.0	0.0	2.0	0.0	0.0	6.4	0.0	14.3	14.7	0.0	6.0
Prop In Lane	0.74		0.24	0.40			0.48	1.00		0.02	1.00	0.23
Lane Grp Cap(c), veh/h	381	0	0	373	0	0	606	0	1177	348	0	1133
V/C Ratio(X)	0.41	0.00	0.00	0.25	0.00	0.00	0.02	0.00	0.77	0.03	0.00	0.45
Avail Cap(c_a), veh/h	866	0	0	896	0	0	1373	0	2788	879	0	2685
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.3	0.0	0.0	15.6	0.0	0.0	5.5	0.0	5.4	10.7	0.0	3.9
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.4	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.2	0.0	0.0	0.7	0.0	0.0	0.0	0.0	2.7	0.1	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.0	0.0	0.0	16.0	0.0	0.0	5.5	0.0	6.5	10.8	0.0	4.2
LnGrp LOS	B	A	A	B	A	A	A	A	A	B	A	A
Approach Vol, veh/h	157			94			924			521		
Approach Delay, s/veh	17.0			16.0			6.5			4.3		
Approach LOS	B			B			A			A		
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+R _c), s	30.2		10.5		30.2		10.5					
Change Period (Y+R _c), s	4.5		4.5		4.5		4.5					
Max Green Setting (Gmax), s	60.9		20.1		60.9		20.1					
Max Q Clear Time (g_c+l1), s	16.3		5.7		16.7		4.0					
Green Ext Time (p_c), s	9.4		0.7		4.0		0.4					
Intersection Summary												
HCM 6th Ctrl Delay			7.3									
HCM 6th LOS			A									

Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	1	5	3	0	4	5	823	13	9	457	6
Future Vol, veh/h	6	1	5	3	0	4	5	823	13	9	457	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	1	5	3	0	4	5	895	14	10	497	7

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1435	1440	501	1436	1436	902	504	0	0	909	0	0
Stage 1	521	521	-	912	912	-	-	-	-	-	-	-
Stage 2	914	919	-	524	524	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	111	133	570	111	133	336	1061	-	-	749	-	-
Stage 1	539	532	-	328	353	-	-	-	-	-	-	-
Stage 2	327	350	-	537	530	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	107	129	570	107	129	336	1061	-	-	749	-	-
Mov Cap-2 Maneuver	107	129	-	107	129	-	-	-	-	-	-	-
Stage 1	534	522	-	325	349	-	-	-	-	-	-	-
Stage 2	320	347	-	521	520	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	28.7	26.5			0.1			0.2		
HCM LOS	D	D								
<hr/>										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	1061	-	-	165	175	749	-	-		
HCM Lane V/C Ratio	0.005	-	-	0.079	0.043	0.013	-	-		
HCM Control Delay (s)	8.4	0	-	28.7	26.5	9.9	0	-		
HCM Lane LOS	A	A	-	D	D	A	A	-		
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	0	-	-		

HCM 6th Signalized Intersection Summary
12: Calistoga Road (SR-29) & Highway 175/Main Street

Existing +Project PM

11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	12	68	22	22	12	53	653	8	2	354	119
Future Volume (veh/h)	169	12	68	22	22	12	53	653	8	2	354	119
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	184	13	74	24	24	13	58	710	9	2	385	129
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	369	32	98	234	211	89	131	927	11	84	736	245
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.55	0.55	0.55	0.55	0.55	0.55
Sat Flow, veh/h	943	134	405	484	871	367	75	1689	21	1	1340	447
Grp Volume(v), veh/h	271	0	0	61	0	0	777	0	0	516	0	0
Grp Sat Flow(s), veh/h/ln	1481	0	0	1722	0	0	1784	0	0	1788	0	0
Q Serve(g_s), s	6.1	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.2	0.0	0.0	1.1	0.0	0.0	14.5	0.0	0.0	7.9	0.0	0.0
Prop In Lane	0.68			0.27	0.39		0.21	0.07		0.01	0.00	0.25
Lane Grp Cap(c), veh/h	499	0	0	534	0	0	1069	0	0	1066	0	0
V/C Ratio(X)	0.54	0.00	0.00	0.11	0.00	0.00	0.73	0.00	0.00	0.48	0.00	0.00
Avail Cap(c_a), veh/h	1001	0	0	1073	0	0	2339	0	0	2376	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.0	0.0	0.0	12.8	0.0	0.0	7.6	0.0	0.0	6.2	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.1	0.0	0.0	1.0	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.2	0.0	0.0	0.4	0.0	0.0	3.6	0.0	0.0	1.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.9	0.0	0.0	12.9	0.0	0.0	8.5	0.0	0.0	6.5	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h	271				61			777			516	
Approach Delay, s/veh	15.9				12.9			8.5			6.5	
Approach LOS	B				B			A			A	
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+R _c), s	28.2			15.0			28.2			15.0		
Change Period (Y+R _c), s	4.5			4.5			4.5			4.5		
Max Green Setting (Gmax), s	55.5			25.5			55.5			25.5		
Max Q Clear Time (g_c+l1), s	16.5			9.2			9.9			3.1		
Green Ext Time (p_c), s	7.2			1.4			4.0			0.2		
Intersection Summary												
HCM 6th Ctrl Delay				9.3								
HCM 6th LOS				A								

Intersection

Int Delay, s/veh 1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	4	18	6	7	26	21	720	11	19	342	58
Future Vol, veh/h	6	4	18	6	7	26	21	720	11	19	342	58
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	4	20	7	8	28	23	783	12	21	372	63

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1299	1287	404	1293	1312	789	435	0	0	795	0	0
Stage 1	446	446	-	835	835	-	-	-	-	-	-	-
Stage 2	853	841	-	458	477	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	138	164	647	140	159	391	1125	-	-	826	-	-
Stage 1	591	574	-	362	383	-	-	-	-	-	-	-
Stage 2	354	380	-	583	556	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	116	153	647	126	148	391	1125	-	-	826	-	-
Mov Cap-2 Maneuver	116	153	-	126	148	-	-	-	-	-	-	-
Stage 1	569	554	-	349	369	-	-	-	-	-	-	-
Stage 2	310	366	-	542	537	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	20.3	23			0.2			0.4		
HCM LOS	C	C								
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Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	1125	-	-	265	242	826	-	-		
HCM Lane V/C Ratio	0.02	-	-	0.115	0.175	0.025	-	-		
HCM Control Delay (s)	8.3	0	-	20.3	23	9.5	0	-		
HCM Lane LOS	A	A	-	C	C	A	A	-		
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.6	0.1	-	-		

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	1	2	1	9	3	801	7	9	344	5
Future Vol, veh/h	1	0	1	2	1	9	3	801	7	9	344	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	1	2	1	10	3	871	8	10	374	5

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1284	1282	377	1278	1280	875	379	0	0	879	0	0
Stage 1	397	397	-	881	881	-	-	-	-	-	-	-
Stage 2	887	885	-	397	399	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	142	165	670	143	166	349	1179	-	-	769	-	-
Stage 1	629	603	-	341	365	-	-	-	-	-	-	-
Stage 2	339	363	-	629	602	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	135	162	670	140	163	349	1179	-	-	769	-	-
Mov Cap-2 Maneuver	135	162	-	140	163	-	-	-	-	-	-	-
Stage 1	626	593	-	339	363	-	-	-	-	-	-	-
Stage 2	327	361	-	618	592	-	-	-	-	-	-	-

Approach	EB	WB			NB		SB	
HCM Control Delay, s	21.2	19.6			0		0.2	
HCM LOS	C	C						
<hr/>								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1179	-	-	225	260	769	-	-
HCM Lane V/C Ratio	0.003	-	-	0.01	0.05	0.013	-	-
HCM Control Delay (s)	8.1	0	-	21.2	19.6	9.7	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	2	4	0	9	8	793	7	0	326	5
Future Vol, veh/h	3	1	2	4	0	9	8	793	7	0	326	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	2	4	0	10	9	862	8	0	354	5

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1246	1245	357	1242	1243	866	359	0	0	870	0	0
Stage 1	357	357	-	884	884	-	-	-	-	-	-	-
Stage 2	889	888	-	358	359	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	151	174	687	152	174	353	1200	-	-	775	-	-
Stage 1	661	628	-	340	363	-	-	-	-	-	-	-
Stage 2	338	362	-	660	627	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	145	171	687	149	171	353	1200	-	-	775	-	-
Mov Cap-2 Maneuver	145	171	-	149	171	-	-	-	-	-	-	-
Stage 1	651	628	-	335	358	-	-	-	-	-	-	-
Stage 2	324	357	-	657	627	-	-	-	-	-	-	-

Approach	EB	WB			NB		SB	
HCM Control Delay, s	23.2	20.4			0.1		0	
HCM LOS	C	C						
<hr/>								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1200	-	-	204	248	775	-	-
HCM Lane V/C Ratio	0.007	-	-	0.032	0.057	-	-	-
HCM Control Delay (s)	8	0	-	23.2	20.4	0	-	-
HCM Lane LOS	A	A	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0	-	-

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		A	B		
Traffic Vol, veh/h	6	4	3	779	328	11
Future Vol, veh/h	6	4	3	779	328	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	4	3	847	357	12

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1216	363	369	0	-	0
Stage 1	363	-	-	-	-	-
Stage 2	853	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	200	682	1190	-	-	-
Stage 1	704	-	-	-	-	-
Stage 2	418	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	199	682	1190	-	-	-
Mov Cap-2 Maneuver	199	-	-	-	-	-
Stage 1	700	-	-	-	-	-
Stage 2	418	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.5	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1190	-	278	-	-
HCM Lane V/C Ratio	0.003	-	0.039	-	-
HCM Control Delay (s)	8	0	18.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↖	↖	↑	↗	
Traffic Vol, veh/h	11	3	34	797	299	13
Future Vol, veh/h	11	3	34	797	299	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	275	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	3	37	866	325	14

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1272	332	339	0	-	0
Stage 1	332	-	-	-	-	-
Stage 2	940	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	185	710	1220	-	-	-
Stage 1	727	-	-	-	-	-
Stage 2	380	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	179	710	1220	-	-	-
Mov Cap-2 Maneuver	179	-	-	-	-	-
Stage 1	705	-	-	-	-	-
Stage 2	380	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1220	-	179	710	-	-
HCM Lane V/C Ratio	0.03	-	0.067	0.005	-	-
HCM Control Delay (s)	8	-	26.5	10.1	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	0	-	-

Intersection

Int Delay, s/veh 1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	181	8	21	202	4	17	1	16	2	0	1
Future Vol, veh/h	1	181	8	21	202	4	17	1	16	2	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	197	9	23	220	4	18	1	17	2	0	1

Major/Minor	Major1	Major2			Minor1			Minor2				
Conflicting Flow All	224	0	0	206	0	0	473	474	202	481	476	222
Stage 1	-	-	-	-	-	-	204	204	-	268	268	-
Stage 2	-	-	-	-	-	-	269	270	-	213	208	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1345	-	-	1365	-	-	501	489	839	495	488	818
Stage 1	-	-	-	-	-	-	798	733	-	738	687	-
Stage 2	-	-	-	-	-	-	737	686	-	789	730	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1345	-	-	1365	-	-	492	479	839	477	478	818
Mov Cap-2 Maneuver	-	-	-	-	-	-	492	479	-	477	478	-
Stage 1	-	-	-	-	-	-	797	732	-	737	674	-
Stage 2	-	-	-	-	-	-	722	673	-	771	729	-

Approach	EB	WB			NB			SB					
HCM Control Delay, s	0	0.7			11.3			11.5					
HCM LOS					B			B					
<hr/>													
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3	SBLn4	SBLn5	SBLn6
Capacity (veh/h)	610	1345	-	-	1365	-	-	554	-	-	-	-	-
HCM Lane V/C Ratio	0.061	0.001	-	-	0.017	-	-	0.006	-	-	-	-	-
HCM Control Delay (s)	11.3	7.7	0	-	7.7	0	-	11.5	-	-	-	-	-
HCM Lane LOS	B	A	A	-	A	A	-	B	-	-	-	-	-
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0	-	-	-	-	-

Intersection

Int Delay, s/veh 3.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↔	↔		
Traffic Vol, veh/h	40	39	11	62	79	3
Future Vol, veh/h	40	39	11	62	79	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	42	12	67	86	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	85	0	155 64
Stage 1	-	-	-	-	64 -
Stage 2	-	-	-	-	91 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1512	-	836 1000
Stage 1	-	-	-	-	959 -
Stage 2	-	-	-	-	933 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1512	-	829 1000
Mov Cap-2 Maneuver	-	-	-	-	829 -
Stage 1	-	-	-	-	959 -
Stage 2	-	-	-	-	926 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	834	-	-	1512	-
HCM Lane V/C Ratio	0.107	-	-	0.008	-
HCM Control Delay (s)	9.8	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Intersection

Int Delay, s/veh 132.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	565	32	80	242	66	181
Future Vol, veh/h	565	32	80	242	66	181
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	614	35	87	263	72	197

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	608	171	269	0	-	0
Stage 1	171	-	-	-	-	-
Stage 2	437	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 459	873	1295	-	-	-
Stage 1	859	-	-	-	-	-
Stage 2	651	-	-	-	-	-
Platoon blocked, %		-	-	-	-	-
Mov Cap-1 Maneuver	~ 423	873	1295	-	-	-
Mov Cap-2 Maneuver	~ 423	-	-	-	-	-
Stage 1	791	-	-	-	-	-
Stage 2	651	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	257.3	2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1295	-	435	-	-
HCM Lane V/C Ratio	0.067	-	1.492	-	-
HCM Control Delay (s)	8	0	257.3	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.2	-	33.9	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 25.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
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Lane Configurations						
Traffic Vol, veh/h	302	47	58	437	121	115
Future Vol, veh/h	302	47	58	437	121	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	328	51	63	475	132	125

Major/Minor	Minor1	Major1	Major2
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Conflicting Flow All	690	301	0	0	538	0
Stage 1	301	-	-	-	-	-
Stage 2	389	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	411	739	-	-	1030	-
Stage 1	751	-	-	-	-	-
Stage 2	685	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	358	739	-	-	1030	-
Mov Cap-2 Maneuver	358	-	-	-	-	-
Stage 1	751	-	-	-	-	-
Stage 2	597	-	-	-	-	-

Approach	WB	NB	SB
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HCM Control Delay, s	75.5	0	4.6
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
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Capacity (veh/h)	-	-	385	1030	-
HCM Lane V/C Ratio	-	-	0.985	0.128	-
HCM Control Delay (s)	-	-	75.5	9	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	11.6	0.4	-

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	283	311	3	3	20
Future Vol, veh/h	27	283	311	3	3	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	308	338	3	3	22
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	341	0	-	0	706	340
Stage 1	-	-	-	-	340	-
Stage 2	-	-	-	-	366	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1218	-	-	-	402	702
Stage 1	-	-	-	-	721	-
Stage 2	-	-	-	-	702	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1218	-	-	-	390	702
Mov Cap-2 Maneuver	-	-	-	-	390	-
Stage 1	-	-	-	-	700	-
Stage 2	-	-	-	-	702	-
Approach	EB	WB	SB			
HCM Control Delay, s	0.7	0	10.9			
HCM LOS			B			
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1218	-	-	-	636	
HCM Lane V/C Ratio	0.024	-	-	-	0.039	
HCM Control Delay (s)	8	0	-	-	10.9	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	

Intersection

Int Delay, s/veh 1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	54	218	14	2	264	7	10	0	1	5	0	40
Future Vol, veh/h	54	218	14	2	264	7	10	0	1	5	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	59	237	15	2	287	8	11	0	1	5	0	43

Major/Minor	Major1	Major2		Minor1		Minor2						
Conflicting Flow All	295	0	0	252	0	0	680	662	245	658	665	291
Stage 1	-	-	-	-	-	-	363	363	-	295	295	-
Stage 2	-	-	-	-	-	-	317	299	-	363	370	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1266	-	-	1313	-	-	365	382	794	378	381	748
Stage 1	-	-	-	-	-	-	656	625	-	713	669	-
Stage 2	-	-	-	-	-	-	694	666	-	656	620	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1266	-	-	1313	-	-	329	361	794	361	360	748
Mov Cap-2 Maneuver	-	-	-	-	-	-	329	361	-	361	360	-
Stage 1	-	-	-	-	-	-	621	591	-	674	668	-
Stage 2	-	-	-	-	-	-	652	665	-	620	587	-

Approach	EB	WB		NB		SB		
HCM Control Delay, s	1.5	0.1		15.7		10.8		
HCM LOS				C		B		
<hr/>								
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	348	1266	-	-	1313	-	-	668
HCM Lane V/C Ratio	0.034	0.046	-	-	0.002	-	-	0.073
HCM Control Delay (s)	15.7	8	0	-	7.7	0	-	10.8
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.2

Intersection

Int Delay, s/veh 5.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	177	47	143	22	16	130
Future Vol, veh/h	177	47	143	22	16	130
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	192	51	155	24	17	141

Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	179	0	-	0	602	167
Stage 1	-	-	-	-	167	-
Stage 2	-	-	-	-	435	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1397	-	-	-	463	877
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	653	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1397	-	-	-	398	877
Mov Cap-2 Maneuver	-	-	-	-	398	-
Stage 1	-	-	-	-	741	-
Stage 2	-	-	-	-	653	-

Approach	EB	WB	SB
HCM Control Delay, s	6.3	0	10.8
HCM LOS		B	

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1397	-	-	-	775
HCM Lane V/C Ratio	0.138	-	-	-	0.205
HCM Control Delay (s)	8	0	-	-	10.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.5	-	-	-	0.8

HCM 6th Signalized Intersection Summary
1: SR-29 & Main Street & SR-53

Baseline AM
11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑		↑	↑	↑	↑↑	↑↑		↑	↑↑	↑
Traffic Volume (veh/h)	317	40	91	31	38	59	148	354	51	65	273	292
Future Volume (veh/h)	317	40	91	31	38	59	148	354	51	65	273	292
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	345	43	99	34	41	64	161	385	55	71	297	317
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	530	106	245	67	179	250	214	1056	150	111	993	443
Arrive On Green	0.15	0.21	0.21	0.04	0.10	0.10	0.12	0.34	0.34	0.06	0.28	0.28
Sat Flow, veh/h	3456	503	1159	1781	1870	1585	1781	3124	443	1781	3554	1585
Grp Volume(v), veh/h	345	0	142	34	41	64	161	218	222	71	297	317
Grp Sat Flow(s), veh/h/ln	1728	0	1662	1781	1870	1585	1781	1777	1791	1781	1777	1585
Q Serve(g_s), s	4.8	0.0	3.8	1.0	1.0	1.8	4.5	4.7	4.8	2.0	3.4	9.2
Cycle Q Clear(g_c), s	4.8	0.0	3.8	1.0	1.0	1.8	4.5	4.7	4.8	2.0	3.4	9.2
Prop In Lane	1.00			1.00			1.00	1.00		0.25	1.00	1.00
Lane Grp Cap(c), veh/h	530	0	352	67	179	250	214	600	605	111	993	443
V/C Ratio(X)	0.65	0.00	0.40	0.51	0.23	0.26	0.75	0.36	0.37	0.64	0.30	0.72
Avail Cap(c_a), veh/h	1584	0	1118	295	711	701	851	1577	1589	469	2391	1067
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.4	0.0	17.4	24.2	21.4	18.9	21.8	12.8	12.8	23.5	14.5	16.6
Incr Delay (d2), s/veh	1.4	0.0	0.7	5.9	0.6	0.5	5.2	0.4	0.4	6.1	0.2	2.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.9	0.0	1.4	0.5	0.5	0.6	2.0	1.7	1.7	1.0	1.2	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	21.8	0.0	18.2	30.1	22.1	19.5	27.0	13.2	13.2	29.6	14.7	18.8
LnGrp LOS	C	A	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h						139			601			685
Approach Delay, s/veh						22.8			16.9			18.1
Approach LOS						C			B			B
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+R _c), s	7.7	21.8	6.4	15.3	10.7	18.8	12.4	9.4				
Change Period (Y+R _c), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	13.5	45.5	8.5	34.5	24.5	34.5	23.5	19.5				
Max Q Clear Time (g_c+l1), s	4.0	6.8	3.0	5.8	6.5	11.2	6.8	3.8				
Green Ext Time (p_c), s	0.1	2.9	0.0	0.8	0.4	3.1	1.1	0.3				
Intersection Summary												
HCM 6th Ctrl Delay				18.7								
HCM 6th LOS				B								

Intersection

Int Delay, s/veh 1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	0	17	0	45	0	472	12	44	400	2
Future Vol, veh/h	1	0	0	17	0	45	0	472	12	44	400	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	50	-	-	-	375	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	18	0	49	0	513	13	48	435	2

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1076	1058	436	1052	1053	520	437	0	0	526	0	0
Stage 1	532	532	-	520	520	-	-	-	-	-	-	-
Stage 2	544	526	-	532	533	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	197	225	620	204	226	556	1123	-	-	1041	-	-
Stage 1	531	526	-	539	532	-	-	-	-	-	-	-
Stage 2	523	529	-	531	525	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	173	215	620	197	216	556	1123	-	-	1041	-	-
Mov Cap-2 Maneuver	173	215	-	197	216	-	-	-	-	-	-	-
Stage 1	531	502	-	539	532	-	-	-	-	-	-	-
Stage 2	477	529	-	507	501	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	25.9	15.7			0			0.9		
HCM LOS	D	C								
Minor Lane/Major Mvmt										
Capacity (veh/h)	1123	-	-	173	197	556	1041	-	-	
HCM Lane V/C Ratio	-	-	-	0.006	0.094	0.088	0.046	-	-	
HCM Control Delay (s)	0	-	-	25.9	25.2	12.1	8.6	-	-	
HCM Lane LOS	A	-	-	D	D	B	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0.3	0.1	-	-	

Intersection

Int Delay, s/veh 4.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	B	T	R	U	↑
Traffic Vol, veh/h	113	64	386	55	22	398
Future Vol, veh/h	113	64	386	55	22	398
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	123	70	420	60	24	433

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	931	450	0	0	480
Stage 1	450	-	-	-	-
Stage 2	481	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	296	609	-	-	1082
Stage 1	642	-	-	-	-
Stage 2	622	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	289	609	-	-	1082
Mov Cap-2 Maneuver	289	-	-	-	-
Stage 1	642	-	-	-	-
Stage 2	608	-	-	-	-

Approach WB NB SB

HCM Control Delay, s 26.3 0 0.4

HCM LOS D

Minor Lane/Major Mvmt	NBT	NBR	WB Ln1	SBL	SBT
Capacity (veh/h)	-	-	357	1082	-
HCM Lane V/C Ratio	-	-	0.539	0.022	-
HCM Control Delay (s)	-	-	26.3	8.4	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	3.1	0.1	-

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗
Traffic Vol, veh/h	3	0	1	60	0	61	1	487	20	18	515	1
Future Vol, veh/h	3	0	1	60	0	61	1	487	20	18	515	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	50	275	-	275	375	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	1	65	0	66	1	529	22	20	560	1
Major/Minor												
Minor2		Minor1			Major1			Major2				
Conflicting Flow All	1175	1153	560	1132	1132	529	561	0	0	551	0	0
Stage 1	600	600	-	531	531	-	-	-	-	-	-	-
Stage 2	575	553	-	601	601	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	168	197	528	180	203	550	1010	-	-	1019	-	-
Stage 1	488	490	-	532	526	-	-	-	-	-	-	-
Stage 2	503	514	-	487	489	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	145	193	528	177	199	550	1010	-	-	1019	-	-
Mov Cap-2 Maneuver	145	193	-	177	199	-	-	-	-	-	-	-
Stage 1	488	480	-	531	525	-	-	-	-	-	-	-
Stage 2	442	513	-	476	479	-	-	-	-	-	-	-
Approach												
EB			WB			NB			SB			
HCM Control Delay, s	25.8		24.4			0			0.3			
HCM LOS	D		C									
Minor Lane/Major Mvmt			NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1010		-	-	145	528	177	550	1019	-	-	-
HCM Lane V/C Ratio	0.001		-	-	0.022	0.002	0.368	0.121	0.019	-	-	-
HCM Control Delay (s)	8.6		-	-	30.4	11.8	36.7	12.4	8.6	-	-	-
HCM Lane LOS	A		-	-	D	B	E	B	A	-	-	-
HCM 95th %tile Q(veh)	0		-	-	0.1	0	1.6	0.4	0.1	-	-	-

Intersection			
Intersection Delay, s/veh	12.1		
Intersection LOS	B		
Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	471	606	658
Demand Flow Rate, veh/h	480	618	671
Vehicles Circulating, veh/h	430	97	366
Vehicles Exiting, veh/h	285	940	544
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	11.5	8.3	16.1
Approach LOS	B	A	C
Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	480	618	671
Cap Entry Lane, veh/h	890	1250	950
Entry HV Adj Factor	0.981	0.980	0.980
Flow Entry, veh/h	471	606	658
Cap Entry, veh/h	873	1225	931
V/C Ratio	0.539	0.494	0.706
Control Delay, s/veh	11.5	8.3	16.1
LOS	B	A	C
95th %tile Queue, veh	3	3	6

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	0	1	3	1	4	5	518	3	1	815	22
Future Vol, veh/h	10	0	1	3	1	4	5	518	3	1	815	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	-	125	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	1	3	1	4	5	563	3	1	886	24
Major/Minor												
Minor2		Minor1			Major1			Major2				
Conflicting Flow All	1477	1476	898	1476	1487	565	910	0	0	566	0	0
Stage 1	900	900	-	575	575	-	-	-	-	-	-	-
Stage 2	577	576	-	901	912	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	104	126	338	104	124	524	748	-	-	1006	-	-
Stage 1	333	357	-	503	503	-	-	-	-	-	-	-
Stage 2	502	502	-	333	353	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	102	125	338	103	123	524	748	-	-	1006	-	-
Mov Cap-2 Maneuver	102	125	-	103	123	-	-	-	-	-	-	-
Stage 1	331	357	-	499	499	-	-	-	-	-	-	-
Stage 2	493	498	-	332	353	-	-	-	-	-	-	-
Approach												
EB			WB			NB			SB			
HCM Control Delay, s	41.9		26.3			0.1			0			
HCM LOS	E		D									
Minor Lane/Major Mvmt		NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)		748	-	-	102	338	178	1006	-	-		
HCM Lane V/C Ratio		0.007	-	-	0.107	0.003	0.049	0.001	-	-		
HCM Control Delay (s)		9.8	-	-	44.5	15.7	26.3	8.6	-	-		
HCM Lane LOS		A	-	-	E	C	D	A	-	-		
HCM 95th %tile Q(veh)		0	-	-	0.3	0	0.2	0	-	-		

Intersection

Int Delay, s/veh 1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖ ↗ ↘ ↖ ↙ ↘					
Traffic Vol, veh/h	14	31	343	25	79	766
Future Vol, veh/h	14	31	343	25	79	766
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	75	-	-	325	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	34	373	27	86	833

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1392	387	0	0	400
Stage 1	387	-	-	-	-
Stage 2	1005	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	156	661	-	-	1159
Stage 1	686	-	-	-	-
Stage 2	354	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	144	661	-	-	1159
Mov Cap-2 Maneuver	144	-	-	-	-
Stage 1	686	-	-	-	-
Stage 2	328	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.6	0	0.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	144	661	1159	-
HCM Lane V/C Ratio	-	-	0.106	0.051	0.074	-
HCM Control Delay (s)	-	-	32.9	10.7	8.4	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.2	0.2	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↔	↔		
Traffic Vol, veh/h	115	6	0	61	5	2
Future Vol, veh/h	115	6	0	61	5	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	125	7	0	66	5	2
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	132	0	195	129
Stage 1	-	-	-	-	129	-
Stage 2	-	-	-	-	66	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1453	-	794	921
Stage 1	-	-	-	-	897	-
Stage 2	-	-	-	-	957	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1453	-	794	921
Mov Cap-2 Maneuver	-	-	-	-	794	-
Stage 1	-	-	-	-	897	-
Stage 2	-	-	-	-	957	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0	9.4			
HCM LOS			A			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	827	-	-	1453	-	
HCM Lane V/C Ratio	0.009	-	-	-	-	
HCM Control Delay (s)	9.4	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↔	↔	
Traffic Vol, veh/h	98	2	2	40	5	0
Future Vol, veh/h	98	2	2	40	5	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	107	2	2	43	5	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	109	0	155	108
Stage 1	-	-	-	-	108	-
Stage 2	-	-	-	-	47	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1481	-	836	946
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	975	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1481	-	835	946
Mov Cap-2 Maneuver	-	-	-	-	835	-
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	974	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0.4	9.3			
HCM LOS			A			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	835	-	-	1481	-	
HCM Lane V/C Ratio	0.007	-	-	0.001	-	
HCM Control Delay (s)	9.3	-	-	7.4	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

HCM 6th Signalized Intersection Summary
10: Calistoga Road (SR-29)/SR-29 & Wardlaw Street

Baseline AM
11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	6	40	6	34	18	10	283	1	11	554	332
Future Volume (veh/h)	144	6	40	6	34	18	10	283	1	11	554	332
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	157	7	43	7	37	20	11	308	1	12	602	361
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	313	15	55	87	206	100	267	1217	4	758	715	429
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.65	0.65	0.65	0.65	0.65	0.65
Sat Flow, veh/h	1083	83	306	75	1137	551	583	1863	6	1070	1095	657
Grp Volume(v), veh/h	207	0	0	64	0	0	11	0	309	12	0	963
Grp Sat Flow(s), veh/h/ln	1471	0	0	1763	0	0	583	0	1869	1070	0	1752
Q Serve(g_s), s	5.5	0.0	0.0	0.0	0.0	0.0	0.8	0.0	3.7	0.3	0.0	23.0
Cycle Q Clear(g_c), s	7.1	0.0	0.0	1.7	0.0	0.0	23.8	0.0	3.7	4.0	0.0	23.0
Prop In Lane	0.76			0.21	0.11		0.31	1.00		0.00	1.00	0.37
Lane Grp Cap(c), veh/h	383	0	0	393	0	0	267	0	1221	758	0	1144
V/C Ratio(X)	0.54	0.00	0.00	0.16	0.00	0.00	0.04	0.00	0.25	0.02	0.00	0.84
Avail Cap(c_a), veh/h	659	0	0	728	0	0	536	0	2084	1253	0	1954
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.0	0.0	0.0	18.9	0.0	0.0	16.4	0.0	3.9	4.7	0.0	7.2
Incr Delay (d2), s/veh	1.2	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.1	0.0	0.0	1.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.4	0.0	0.0	0.6	0.0	0.0	0.1	0.0	0.9	0.0	0.0	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.1	0.0	0.0	19.1	0.0	0.0	16.5	0.0	4.0	4.7	0.0	9.0
LnGrp LOS	C	A	A	B	A	A	B	A	A	A	A	A
Approach Vol, veh/h	207				64			320			975	
Approach Delay, s/veh	22.1				19.1			4.4			9.0	
Approach LOS	C				B			A			A	
Timer - Assigned Phs	2			4			6		8			
Phs Duration (G+Y+R _c), s	39.9			14.3			39.9		14.3			
Change Period (Y+R _c), s	4.5			4.5			4.5		4.5			
Max Green Setting (Gmax), s	60.5			20.5			60.5		20.5			
Max Q Clear Time (g_c+l1), s	25.8			9.1			25.0		3.7			
Green Ext Time (p_c), s	2.1			0.9			10.5		0.2			
Intersection Summary												
HCM 6th Ctrl Delay				10.2								
HCM 6th LOS				B								

Intersection

Int Delay, s/veh 1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	2	14	3	3	4	12	263	9	11	672	4
Future Vol, veh/h	22	2	14	3	3	4	12	263	9	11	672	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	2	15	3	3	4	13	286	10	12	730	4

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1077	1078	732	1082	1075	291	734	0	0	296	0	0
Stage 1	756	756	-	317	317	-	-	-	-	-	-	-
Stage 2	321	322	-	765	758	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	197	219	421	195	220	748	871	-	-	1265	-	-
Stage 1	400	416	-	694	654	-	-	-	-	-	-	-
Stage 2	691	651	-	396	415	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	189	212	421	182	213	748	871	-	-	1265	-	-
Mov Cap-2 Maneuver	189	212	-	182	213	-	-	-	-	-	-	-
Stage 1	393	409	-	682	642	-	-	-	-	-	-	-
Stage 2	671	639	-	374	408	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	23.2	18.5			0.4			0.1		
HCM LOS	C	C								
<hr/>										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	871	-	-	239	278	1265	-	-		
HCM Lane V/C Ratio	0.015	-	-	0.173	0.039	0.009	-	-		
HCM Control Delay (s)	9.2	0	-	23.2	18.5	7.9	0	-		
HCM Lane LOS	A	A	-	C	C	A	A	-		
HCM 95th %tile Q(veh)	0	-	-	0.6	0.1	0	-	-		

HCM 6th Signalized Intersection Summary
12: Calistoga Road (SR-29) & Highway 175/Main Street

Baseline AM

11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	22	101	23	14	12	32	207	6	7	518	104
Future Volume (veh/h)	106	22	101	23	14	12	32	207	6	7	518	104
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	115	24	110	25	15	13	35	225	7	8	563	113
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	285	62	157	284	160	95	166	818	23	106	776	154
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.51	0.51	0.51	0.51	0.51	0.51
Sat Flow, veh/h	591	268	680	580	693	414	99	1589	45	6	1508	299
Grp Volume(v), veh/h	249	0	0	53	0	0	267	0	0	684	0	0
Grp Sat Flow(s), veh/h/ln	1539	0	0	1687	0	0	1734	0	0	1813	0	0
Q Serve(g_s), s	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.2	0.0	0.0	0.8	0.0	0.0	2.9	0.0	0.0	10.4	0.0	0.0
Prop In Lane	0.46		0.44	0.47		0.25	0.13		0.03	0.01		0.17
Lane Grp Cap(c), veh/h	504	0	0	539	0	0	1008	0	0	1036	0	0
V/C Ratio(X)	0.49	0.00	0.00	0.10	0.00	0.00	0.26	0.00	0.00	0.66	0.00	0.00
Avail Cap(c_a), veh/h	1286	0	0	1301	0	0	2617	0	0	2890	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.4	0.0	0.0	10.8	0.0	0.0	4.9	0.0	0.0	6.7	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.7	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.5	0.0	0.0	0.3	0.0	0.0	0.6	0.0	0.0	2.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.1	0.0	0.0	10.9	0.0	0.0	5.0	0.0	0.0	7.4	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h	249			53			267			684		
Approach Delay, s/veh	13.1			10.9			5.0			7.4		
Approach LOS	B			B			A			A		
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+R _c), s	22.7		12.6		22.7		12.6					
Change Period (Y+R _c), s	4.5		4.5		4.5		4.5					
Max Green Setting (Gmax), s	54.5		26.5		54.5		26.5					
Max Q Clear Time (g_c+l1), s	4.9		7.2		12.4		2.8					
Green Ext Time (p_c), s	2.0		1.4		5.8		0.2					
Intersection Summary												
HCM 6th Ctrl Delay			8.2									
HCM 6th LOS			A									

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	15	5	7	20	7	237	11	32	595	41
Future Vol, veh/h	3	1	15	5	7	20	7	237	11	32	595	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	16	5	8	22	8	258	12	35	647	45

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1035	1026	670	1028	1042	264	692	0	0	270	0	0
Stage 1	740	740	-	280	280	-	-	-	-	-	-	-
Stage 2	295	286	-	748	762	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	210	235	457	212	230	775	903	-	-	1293	-	-
Stage 1	409	423	-	727	679	-	-	-	-	-	-	-
Stage 2	713	675	-	404	414	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	191	222	457	195	218	775	903	-	-	1293	-	-
Mov Cap-2 Maneuver	191	222	-	195	218	-	-	-	-	-	-	-
Stage 1	405	404	-	720	672	-	-	-	-	-	-	-
Stage 2	678	668	-	371	396	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB				
HCM Control Delay, s	15.7	15.3			0.2			0.4				
HCM LOS	C	C										
<hr/>												
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	903	-	-	358	383	1293	-	-				
HCM Lane V/C Ratio	0.008	-	-	0.058	0.091	0.027	-	-				
HCM Control Delay (s)	9	0	-	15.7	15.3	7.9	0	-				
HCM Lane LOS	A	A	-	C	C	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.2	0.3	0.1	-	-				

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	2	7	4	0	1	1	221	3	8	604	7
Future Vol, veh/h	3	2	7	4	0	1	1	221	3	8	604	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	2	8	4	0	1	1	240	3	9	657	8

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	923	924	661	928	927	242	665	0	0	243	0	0
Stage 1	679	679	-	244	244	-	-	-	-	-	-	-
Stage 2	244	245	-	684	683	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	250	269	462	248	268	797	924	-	-	1323	-	-
Stage 1	441	451	-	760	704	-	-	-	-	-	-	-
Stage 2	760	703	-	439	449	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	248	266	462	240	265	797	924	-	-	1323	-	-
Mov Cap-2 Maneuver	248	266	-	240	265	-	-	-	-	-	-	-
Stage 1	441	446	-	759	703	-	-	-	-	-	-	-
Stage 2	758	702	-	425	444	-	-	-	-	-	-	-

Approach	EB	WB			NB		SB	
HCM Control Delay, s	15.8	18.2			0		0.1	
HCM LOS	C	C						
<hr/>								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	924	-	-	345	279	1323	-	-
HCM Lane V/C Ratio	0.001	-	-	0.038	0.019	0.007	-	-
HCM Control Delay (s)	8.9	0	-	15.8	18.2	7.7	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	1	2	0	3	0	229	0	5	607	2
Future Vol, veh/h	1	0	1	2	0	3	0	229	0	5	607	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	1	2	0	3	0	249	0	5	660	2

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	922	920	661	921	921	249	662	0	0	249	0	0
Stage 1	671	671	-	249	249	-	-	-	-	-	-	-
Stage 2	251	249	-	672	672	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	251	271	462	251	270	790	927	-	-	1317	-	-
Stage 1	446	455	-	755	701	-	-	-	-	-	-	-
Stage 2	753	701	-	445	454	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	249	269	462	249	268	790	927	-	-	1317	-	-
Mov Cap-2 Maneuver	249	269	-	249	268	-	-	-	-	-	-	-
Stage 1	446	452	-	755	701	-	-	-	-	-	-	-
Stage 2	750	701	-	441	451	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB			
HCM Control Delay, s	16.2	13.6			0			0.1			
HCM LOS	C	B									
<hr/>											
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	927	-	-	324	423	1317	-	-			
HCM Lane V/C Ratio	-	-	-	0.007	0.013	0.004	-	-			
HCM Control Delay (s)	0	-	-	16.2	13.6	7.7	0	-			
HCM Lane LOS	A	-	-	C	B	A	A	-			
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-			

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		A	B		
Traffic Vol, veh/h	9	5	1	208	609	3
Future Vol, veh/h	9	5	1	208	609	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	5	1	226	662	3

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	892	664	665	0	-	0
Stage 1	664	-	-	-	-	-
Stage 2	228	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	312	461	924	-	-	-
Stage 1	512	-	-	-	-	-
Stage 2	810	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	312	461	924	-	-	-
Mov Cap-2 Maneuver	312	-	-	-	-	-
Stage 1	511	-	-	-	-	-
Stage 2	810	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	924	-	353	-	-
HCM Lane V/C Ratio	0.001	-	0.043	-	-
HCM Control Delay (s)	8.9	0	15.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↖	↖	↑	↗	
Traffic Vol, veh/h	6	9	1	201	594	6
Future Vol, veh/h	6	9	1	201	594	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	275	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	10	1	218	646	7

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	870	650	653	0	-	0
Stage 1	650	-	-	-	-	-
Stage 2	220	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	322	469	934	-	-	-
Stage 1	520	-	-	-	-	-
Stage 2	817	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	322	469	934	-	-	-
Mov Cap-2 Maneuver	322	-	-	-	-	-
Stage 1	519	-	-	-	-	-
Stage 2	817	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	934	-	322	469	-	-
HCM Lane V/C Ratio	0.001	-	0.02	0.021	-	-
HCM Control Delay (s)	8.9	-	16.4	12.8	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.1	-	-

Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	185	13	2	112	0	9	0	5	1	0	0
Future Vol, veh/h	1	185	13	2	112	0	9	0	5	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	201	14	2	122	0	10	0	5	1	0	0

Major/Minor	Major1	Major2		Minor1		Minor2						
Conflicting Flow All	122	0	0	215	0	0	336	336	208	339	343	122
Stage 1	-	-	-	-	-	-	210	210	-	126	126	-
Stage 2	-	-	-	-	-	-	126	126	-	213	217	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1465	-	-	1355	-	-	618	585	832	615	579	929
Stage 1	-	-	-	-	-	-	792	728	-	878	792	-
Stage 2	-	-	-	-	-	-	878	792	-	789	723	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1465	-	-	1355	-	-	617	583	832	609	577	929
Mov Cap-2 Maneuver	-	-	-	-	-	-	617	583	-	609	577	-
Stage 1	-	-	-	-	-	-	791	727	-	877	790	-
Stage 2	-	-	-	-	-	-	876	790	-	783	722	-

Approach	EB	WB		NB		SB		
HCM Control Delay, s	0	0.1		10.4		10.9		
HCM LOS				B		B		
<hr/>								
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	680	1465	-	-	1355	-	-	609
HCM Lane V/C Ratio	0.022	0.001	-	-	0.002	-	-	0.002
HCM Control Delay (s)	10.4	7.5	0	-	7.7	0	-	10.9
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection

Int Delay, s/veh 1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↔	↔		
Traffic Vol, veh/h	54	79	13	29	26	2
Future Vol, veh/h	54	79	13	29	26	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	59	86	14	32	28	2

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	145	0	162
Stage 1	-	-	-	-	102
Stage 2	-	-	-	-	60
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1437	-	829
Stage 1	-	-	-	-	922
Stage 2	-	-	-	-	963
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1437	-	821
Mov Cap-2 Maneuver	-	-	-	-	821
Stage 1	-	-	-	-	922
Stage 2	-	-	-	-	953

Approach	EB	WB	NB
HCM Control Delay, s	0	2.3	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	829	-	-	1437	-
HCM Lane V/C Ratio	0.037	-	-	0.01	-
HCM Control Delay (s)	9.5	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection

Int Delay, s/veh 2.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	109	26	18	34	197	458
Future Vol, veh/h	109	26	18	34	197	458
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	118	28	20	37	214	498

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	540	463	712	0	-	0
Stage 1	463	-	-	-	-	-
Stage 2	77	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	503	599	888	-	-	-
Stage 1	634	-	-	-	-	-
Stage 2	946	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	491	599	888	-	-	-
Mov Cap-2 Maneuver	491	-	-	-	-	-
Stage 1	619	-	-	-	-	-
Stage 2	946	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	14.9	3.2	0
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HCM LOS	B
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Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	888	-	509	-	-
HCM Lane V/C Ratio	0.022	-	0.288	-	-
HCM Control Delay (s)	9.1	0	14.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.2	-	-

Intersection						
Int Delay, s/veh	23.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	B	T	R	U	↑
Traffic Vol, veh/h	518	40	76	93	28	92
Future Vol, veh/h	518	40	76	93	28	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	563	43	83	101	30	100
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	294	134	0	0	184	0
Stage 1	134	-	-	-	-	-
Stage 2	160	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	697	915	-	-	1391	-
Stage 1	892	-	-	-	-	-
Stage 2	869	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	682	915	-	-	1391	-
Mov Cap-2 Maneuver	682	-	-	-	-	-
Stage 1	892	-	-	-	-	-
Stage 2	850	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	35	0		1.8		
HCM LOS	E					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	695	1391	-	
HCM Lane V/C Ratio	-	-	0.873	0.022	-	
HCM Control Delay (s)	-	-	35	7.6	-	
HCM Lane LOS	-	-	E	A	-	
HCM 95th %tile Q(veh)	-	-	10.5	0.1	-	

HCM 6th Signalized Intersection Summary
1: SR-29 & Main Street & SR-53

Baseline PM
11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑		↑	↑	↑	↑↑	↑↑		↑	↑↑	↑
Traffic Volume (veh/h)	311	42	121	57	44	91	139	452	57	96	397	369
Future Volume (veh/h)	311	42	121	57	44	91	139	452	57	96	397	369
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	338	46	132	62	48	99	151	491	62	104	432	401
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	498	79	227	97	180	274	199	1184	149	137	1201	536
Arrive On Green	0.14	0.19	0.19	0.05	0.10	0.10	0.11	0.37	0.37	0.08	0.34	0.34
Sat Flow, veh/h	3456	426	1224	1781	1870	1585	1781	3176	399	1781	3554	1585
Grp Volume(v), veh/h	338	0	178	62	48	99	151	274	279	104	432	401
Grp Sat Flow(s), veh/h/ln	1728	0	1650	1781	1870	1585	1781	1777	1798	1781	1777	1585
Q Serve(g_s), s	5.4	0.0	5.7	2.0	1.4	3.2	4.8	6.6	6.7	3.3	5.3	13.0
Cycle Q Clear(g_c), s	5.4	0.0	5.7	2.0	1.4	3.2	4.8	6.6	6.7	3.3	5.3	13.0
Prop In Lane	1.00			1.00		1.00	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	498	0	307	97	180	274	199	662	670	137	1201	536
V/C Ratio(X)	0.68	0.00	0.58	0.64	0.27	0.36	0.76	0.41	0.42	0.76	0.36	0.75
Avail Cap(c_a), veh/h	1280	0	810	353	596	627	660	1393	1410	506	2479	1106
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	0.0	21.6	26.9	24.3	21.2	25.0	13.5	13.5	26.3	14.5	17.0
Incr Delay (d2), s/veh	1.6	0.0	1.7	6.8	0.8	0.8	5.9	0.4	0.4	8.3	0.2	2.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.2	0.0	2.2	1.0	0.6	1.2	2.2	2.4	2.5	1.6	1.9	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.2	0.0	23.3	33.7	25.1	22.0	30.9	13.9	13.9	34.6	14.7	19.1
LnGrp LOS	C	A	C	C	C	C	C	B	B	C	B	B
Approach Vol, veh/h		516			209			704			937	
Approach Delay, s/veh		24.5			26.2			17.6			18.8	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+R _c), s	9.0	26.1	7.7	15.3	11.0	24.1	12.9	10.1				
Change Period (Y+R _c), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	16.5	45.5	11.5	28.5	21.5	40.5	21.5	18.5				
Max Q Clear Time (g_c+l1), s	5.3	8.7	4.0	7.7	6.8	15.0	7.4	5.2				
Green Ext Time (p_c), s	0.2	3.7	0.1	1.0	0.3	4.6	1.0	0.4				
Intersection Summary												
HCM 6th Ctrl Delay			20.3									
HCM 6th LOS			C									

Intersection

Int Delay, s/veh 1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	0	11	0	48	0	627	18	79	532	2
Future Vol, veh/h	1	0	0	11	0	48	0	627	18	79	532	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	50	-	-	-	375	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	12	0	52	0	682	20	86	578	2

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1469	1453	579	1443	1444	692	580	0	0	702	0	0
Stage 1	751	751	-	692	692	-	-	-	-	-	-	-
Stage 2	718	702	-	751	752	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	106	130	515	110	132	444	994	-	-	895	-	-
Stage 1	403	418	-	434	445	-	-	-	-	-	-	-
Stage 2	420	440	-	403	418	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	87	118	515	102	119	444	994	-	-	895	-	-
Mov Cap-2 Maneuver	87	118	-	102	119	-	-	-	-	-	-	-
Stage 1	403	378	-	434	445	-	-	-	-	-	-	-
Stage 2	371	440	-	364	378	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	46.9	19.9			0			1.2		
HCM LOS	E	C								
Minor Lane/Major Mvmt										
Capacity (veh/h)	994	-	-	87	102	444	895	-	-	-
HCM Lane V/C Ratio	-	-	-	0.012	0.117	0.118	0.096	-	-	-
HCM Control Delay (s)	0	-	-	46.9	44.9	14.2	9.4	-	-	-
HCM Lane LOS	A	-	-	E	E	B	A	-	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.4	0.4	0.3	-	-	-

Intersection

Int Delay, s/veh 6.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	B	T	T	U	U
Traffic Vol, veh/h	67	48	614	140	96	491
Future Vol, veh/h	67	48	614	140	96	491
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	73	52	667	152	104	534

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1485	743	0	0	819
Stage 1	743	-	-	-	-
Stage 2	742	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	137	415	-	-	810
Stage 1	470	-	-	-	-
Stage 2	471	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	119	415	-	-	810
Mov Cap-2 Maneuver	119	-	-	-	-
Stage 1	470	-	-	-	-
Stage 2	411	-	-	-	-

Approach

WB NB SB

HCM Control Delay, s 70.3 0 1.7

HCM LOS F

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	169	810	-
HCM Lane V/C Ratio	-	-	0.74	0.129	-
HCM Control Delay (s)	-	-	70.3	10.1	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	4.6	0.4	-

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	
Traffic Vol, veh/h	3	1	6	24	0	37	2	752	51	52	505	1
Future Vol, veh/h	3	1	6	24	0	37	2	752	51	52	505	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	50	275	-	275	375	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	7	26	0	40	2	817	55	57	549	1
Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1532	1539	549	1489	1485	817	550	0	0	872	0	0
Stage 1	663	663	-	821	821	-	-	-	-	-	-	-
Stage 2	869	876	-	668	664	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	95	116	535	102	125	376	1020	-	-	773	-	-
Stage 1	450	459	-	369	389	-	-	-	-	-	-	-
Stage 2	347	367	-	448	458	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	80	107	535	94	116	376	1020	-	-	773	-	-
Mov Cap-2 Maneuver	80	107	-	94	116	-	-	-	-	-	-	-
Stage 1	449	425	-	368	388	-	-	-	-	-	-	-
Stage 2	309	366	-	409	424	-	-	-	-	-	-	-
Approach	EB		WB			NB		SB				
HCM Control Delay, s	26.9		32.1			0		0.9				
HCM LOS	D		D									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	1020	-	-	85	535	94	376	773	-	-		
HCM Lane V/C Ratio	0.002	-	-	0.051	0.012	0.278	0.107	0.073	-	-		
HCM Control Delay (s)	8.5	-	-	49.6	11.8	57.4	15.7	10	-	-		
HCM Lane LOS	A	-	-	E	B	F	C	B	-	-		
HCM 95th %tile Q(veh)	0	-	-	0.2	0	1	0.4	0.2	-	-		

Intersection			
Intersection Delay, s/veh	24.7		
Intersection LOS	C		
Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	241	1149	538
Demand Flow Rate, veh/h	246	1172	548
Vehicles Circulating, veh/h	786	116	148
Vehicles Exiting, veh/h	502	580	884
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	11.8	35.1	8.0
Approach LOS	B	E	A
Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	246	1172	548
Cap Entry Lane, veh/h	619	1226	1187
Entry HV Adj Factor	0.980	0.980	0.981
Flow Entry, veh/h	241	1149	538
Cap Entry, veh/h	606	1201	1164
V/C Ratio	0.397	0.956	0.462
Control Delay, s/veh	11.8	35.1	8.0
LOS	B	E	A
95th %tile Queue, veh	2	18	2

Intersection

Int Delay, s/veh

1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	0	3	5	0	10	2	1029	3	6	492	3
Future Vol, veh/h	15	0	3	5	0	10	2	1029	3	6	492	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	50	-	-	-	125	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	0	3	5	0	11	2	1118	3	7	535	3

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1680	1676	537	1676	1676	1120	538	0	0	1121	0	0
Stage 1	551	551	-	1124	1124	-	-	-	-	-	-	-
Stage 2	1129	1125	-	552	552	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	75	95	544	76	95	251	1030	-	-	623	-	-
Stage 1	519	515	-	249	281	-	-	-	-	-	-	-
Stage 2	248	280	-	518	515	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	71	94	544	75	94	251	1030	-	-	623	-	-
Mov Cap-2 Maneuver	71	94	-	75	94	-	-	-	-	-	-	-
Stage 1	518	509	-	249	280	-	-	-	-	-	-	-
Stage 2	237	279	-	509	509	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	60.5	33.8			0			0.1		
HCM LOS	F	D								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR	
Capacity (veh/h)	1030	-	-	71	544	141	623	-	-	
HCM Lane V/C Ratio	0.002	-	-	0.23	0.006	0.116	0.01	-	-	
HCM Control Delay (s)	8.5	-	-	70.2	11.7	33.8	10.8	-	-	
HCM Lane LOS	A	-	-	F	B	D	B	-	-	
HCM 95th %tile Q(veh)	0	-	-	0.8	0	0.4	0	-	-	

Intersection

Int Delay, s/veh 4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖ ↗ ↘ ↖ ↙ ↘					
Traffic Vol, veh/h	40	134	930	27	29	339
Future Vol, veh/h	40	134	930	27	29	339
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	75	-	-	325	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	146	1011	29	32	368

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1458	1026	0	0	1040
Stage 1	1026	-	-	-	-
Stage 2	432	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	143	285	-	-	669
Stage 1	346	-	-	-	-
Stage 2	655	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	136	285	-	-	669
Mov Cap-2 Maneuver	136	-	-	-	-
Stage 1	346	-	-	-	-
Stage 2	624	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	33.2	0	0.8
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	136	285	669	-
HCM Lane V/C Ratio	-	-	0.32	0.511	0.047	-
HCM Control Delay (s)	-	-	43.4	30.1	10.6	-
HCM Lane LOS	-	-	E	D	B	-
HCM 95th %tile Q(veh)	-	-	1.3	2.7	0.1	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↔	↔		
Traffic Vol, veh/h	60	3	2	178	4	1
Future Vol, veh/h	60	3	2	178	4	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	3	2	193	4	1
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	68	0	264	67
Stage 1	-	-	-	-	67	-
Stage 2	-	-	-	-	197	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1533	-	725	997
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	836	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1533	-	724	997
Mov Cap-2 Maneuver	-	-	-	-	724	-
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	835	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0.1	9.7			
HCM LOS			A			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	766	-	-	1533	-	
HCM Lane V/C Ratio	0.007	-	-	0.001	-	
HCM Control Delay (s)	9.7	-	-	7.4	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↔	↔		
Traffic Vol, veh/h	51	3	1	154	2	0
Future Vol, veh/h	51	3	1	154	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	55	3	1	167	2	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	58	0	226	57
Stage 1	-	-	-	-	57	-
Stage 2	-	-	-	-	169	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1546	-	762	1009
Stage 1	-	-	-	-	966	-
Stage 2	-	-	-	-	861	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1546	-	761	1009
Mov Cap-2 Maneuver	-	-	-	-	761	-
Stage 1	-	-	-	-	966	-
Stage 2	-	-	-	-	860	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0	9.7			
HCM LOS			A			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	761	-	-	1546	-	
HCM Lane V/C Ratio	0.003	-	-	0.001	-	
HCM Control Delay (s)	9.7	-	-	7.3	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

HCM 6th Signalized Intersection Summary
10: Calistoga Road (SR-29)/SR-29 & Wardlaw Street

Baseline PM
11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	3	36	36	10	42	14	828	13	8	346	110
Future Volume (veh/h)	111	3	36	36	10	42	14	828	13	8	346	110
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00			1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	121	3	39	39	11	46	15	900	14	9	376	120
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	318	11	56	196	59	123	614	1158	18	342	857	273
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.63	0.63	0.63	0.63	0.63	0.63
Sat Flow, veh/h	1097	70	367	488	388	806	901	1837	29	611	1359	434
Grp Volume(v), veh/h	163	0	0	96	0	0	15	0	914	9	0	496
Grp Sat Flow(s), veh/h/ln	1533	0	0	1681	0	0	901	0	1865	611	0	1792
Q Serve(g_s), s	1.9	0.0	0.0	0.0	0.0	0.0	0.4	0.0	14.8	0.5	0.0	5.9
Cycle Q Clear(g_c), s	4.0	0.0	0.0	2.1	0.0	0.0	6.2	0.0	14.8	15.2	0.0	5.9
Prop In Lane	0.74		0.24	0.41			0.48	1.00		0.02	1.00	0.24
Lane Grp Cap(c), veh/h	385	0	0	379	0	0	614	0	1176	342	0	1130
V/C Ratio(X)	0.42	0.00	0.00	0.25	0.00	0.00	0.02	0.00	0.78	0.03	0.00	0.44
Avail Cap(c_a), veh/h	863	0	0	893	0	0	1358	0	2714	845	0	2608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.5	0.0	0.0	15.8	0.0	0.0	5.5	0.0	5.6	11.1	0.0	3.9
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.3	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.3	0.0	0.0	0.7	0.0	0.0	0.0	0.0	2.9	0.1	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.2	0.0	0.0	16.1	0.0	0.0	5.5	0.0	6.7	11.1	0.0	4.2
LnGrp LOS	B	A	A	B	A	A	A	A	A	B	A	A
Approach Vol, veh/h	163			96			929		505			
Approach Delay, s/veh	17.2			16.1			6.7		4.3			
Approach LOS	B			B			A		A			
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+R _c), s	30.7		10.9		30.7		10.9					
Change Period (Y+R _c), s	4.5		4.5		4.5		4.5					
Max Green Setting (Gmax), s	60.5		20.5		60.5		20.5					
Max Q Clear Time (g _{c+l1}), s	16.8		6.0		17.2		4.1					
Green Ext Time (p _c), s	9.5		0.7		3.9		0.4					
Intersection Summary												
HCM 6th Ctrl Delay			7.5									
HCM 6th LOS			A									

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	+	+	+	+	+	+	+	+	+	+	+	+
Traffic Vol, veh/h	6	1	5	3	0	4	5	828	13	9	443	6
Future Vol, veh/h	6	1	5	3	0	4	5	828	13	9	443	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	1	5	3	0	4	5	900	14	10	482	7
Major/Minor	Minor2	Minor1	Minor1	Major1	Major1	Major1	Major2	Major2	Major2	Major2	Major2	Major2
Conflicting Flow All	1425	1430	486	1426	1426	907	489	0	0	914	0	0
Stage 1	506	506	-	917	917	-	-	-	-	-	-	-
Stage 2	919	924	-	509	509	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	113	135	581	113	135	334	1074	-	-	746	-	-
Stage 1	549	540	-	326	351	-	-	-	-	-	-	-
Stage 2	325	348	-	547	538	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	109	131	581	109	131	334	1074	-	-	746	-	-
Mov Cap-2 Maneuver	109	131	-	109	131	-	-	-	-	-	-	-
Stage 1	544	530	-	323	348	-	-	-	-	-	-	-
Stage 2	318	345	-	531	528	-	-	-	-	-	-	-
Approach	EB	WB	WB	NB	NB	NB	SB	SB	SB	SB	SB	SB
HCM Control Delay, s	28.2	26.3	26.3	0	0	0	0.2	0.2	0.2	0.2	0.2	0.2
HCM LOS	D	D	D	A	A	A	A	A	A	A	A	A
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR	SBL	SBT	SBR	SBL
Capacity (veh/h)	1074	-	-	168	177	746	-	-	-	-	-	-
HCM Lane V/C Ratio	0.005	-	-	0.078	0.043	0.013	-	-	-	-	-	-
HCM Control Delay (s)	8.4	0	-	28.2	26.3	9.9	0	-	-	-	-	-
HCM Lane LOS	A	A	-	D	D	A	A	A	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-	-	-	-	-	-

HCM 6th Signalized Intersection Summary
12: Calistoga Road (SR-29) & Highway 175/Main Street

Baseline PM

11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	12	70	23	23	12	55	653	8	2	344	116
Future Volume (veh/h)	174	12	70	23	23	12	55	653	8	2	344	116
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	189	13	76	25	25	13	60	710	9	2	374	126
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	371	32	100	236	214	87	131	923	11	83	734	246
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.55	0.55	0.55	0.55	0.55	0.55
Sat Flow, veh/h	947	129	405	492	867	353	78	1683	21	1	1338	449
Grp Volume(v), veh/h	278	0	0	63	0	0	779	0	0	502	0	0
Grp Sat Flow(s), veh/h/ln	1481	0	0	1712	0	0	1782	0	0	1788	0	0
Q Serve(g_s), s	6.4	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.6	0.0	0.0	1.2	0.0	0.0	14.9	0.0	0.0	7.7	0.0	0.0
Prop In Lane	0.68			0.40			0.21	0.08		0.01	0.00	0.25
Lane Grp Cap(c), veh/h	503	0	0	537	0	0	1066	0	0	1063	0	0
V/C Ratio(X)	0.55	0.00	0.00	0.12	0.00	0.00	0.73	0.00	0.00	0.47	0.00	0.00
Avail Cap(c_a), veh/h	982	0	0	1052	0	0	2294	0	0	2331	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.2	0.0	0.0	12.9	0.0	0.0	7.7	0.0	0.0	6.2	0.0	0.0
Incr Delay (d2), s/veh	1.0	0.0	0.0	0.1	0.0	0.0	1.0	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.3	0.0	0.0	0.4	0.0	0.0	3.8	0.0	0.0	1.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.2	0.0	0.0	13.0	0.0	0.0	8.7	0.0	0.0	6.6	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h	278				63			779			502	
Approach Delay, s/veh	16.2				13.0			8.7			6.6	
Approach LOS	B				B			A			A	
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+R _c), s	28.6			15.4			28.6			15.4		
Change Period (Y+R _c), s	4.5			4.5			4.5			4.5		
Max Green Setting (Gmax), s	55.5			25.5			55.5			25.5		
Max Q Clear Time (g_c+l1), s	16.9			9.6			9.7			3.2		
Green Ext Time (p_c), s	7.3			1.5			3.8			0.3		
Intersection Summary												
HCM 6th Ctrl Delay				9.5								
HCM 6th LOS				A								

Intersection

Int Delay, s/veh 1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	4	19	6	7	27	22	722	11	20	332	60
Future Vol, veh/h	6	4	19	6	7	27	22	722	11	20	332	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	4	21	7	8	29	24	785	12	22	361	65

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1296	1283	394	1289	1309	791	426	0	0	797	0	0
Stage 1	438	438	-	839	839	-	-	-	-	-	-	-
Stage 2	858	845	-	450	470	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	139	165	655	141	159	390	1133	-	-	825	-	-
Stage 1	597	579	-	360	381	-	-	-	-	-	-	-
Stage 2	352	379	-	589	560	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	117	153	655	126	148	390	1133	-	-	825	-	-
Mov Cap-2 Maneuver	117	153	-	126	148	-	-	-	-	-	-	-
Stage 1	574	559	-	346	367	-	-	-	-	-	-	-
Stage 2	307	365	-	546	540	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	20	22.9			0.2			0.5		
HCM LOS	C	C								
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Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	1133	-	-	272	244	825	-	-		
HCM Lane V/C Ratio	0.021	-	-	0.116	0.178	0.026	-	-		
HCM Control Delay (s)	8.2	0	-	20	22.9	9.5	0	-		
HCM Lane LOS	A	A	-	C	C	A	A	-		
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.6	0.1	-	-		

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	1	2	1	9	3	805	7	9	334	5
Future Vol, veh/h	1	0	1	2	1	9	3	805	7	9	334	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	1	2	1	10	3	875	8	10	363	5

Major/Minor	Minor2	Minor1				Major1			Major2			
Conflicting Flow All	1277	1275	366	1271	1273	879	368	0	0	883	0	0
Stage 1	386	386	-	885	885	-	-	-	-	-	-	-
Stage 2	891	889	-	386	388	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	143	167	679	145	167	347	1191	-	-	766	-	-
Stage 1	637	610	-	340	363	-	-	-	-	-	-	-
Stage 2	337	361	-	637	609	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	136	163	679	142	163	347	1191	-	-	766	-	-
Mov Cap-2 Maneuver	136	163	-	142	163	-	-	-	-	-	-	-
Stage 1	634	600	-	338	361	-	-	-	-	-	-	-
Stage 2	325	359	-	626	599	-	-	-	-	-	-	-

Approach	EB	WB			NB		SB	
HCM Control Delay, s	21	19.6			0		0.3	
HCM LOS	C	C						
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Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1191	-	-	227	260	766	-	-
HCM Lane V/C Ratio	0.003	-	-	0.01	0.05	0.013	-	-
HCM Control Delay (s)	8	0	-	21	19.6	9.8	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	+	+	+	+	+	+	+	+	+	+	+	+
Traffic Vol, veh/h	0	1	2	4	0	9	8	800	7	0	317	3
Future Vol, veh/h	0	1	2	4	0	9	8	800	7	0	317	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	2	4	0	10	9	870	8	0	345	3
Major/Minor												
Minor2		Minor1			Major1			Major2				
Conflicting Flow All	1244	1243	347	1240	1240	874	348	0	0	878	0	0
Stage 1	347	347	-	892	892	-	-	-	-	-	-	-
Stage 2	897	896	-	348	348	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	151	174	696	152	175	349	1211	-	-	769	-	-
Stage 1	669	635	-	337	360	-	-	-	-	-	-	-
Stage 2	334	359	-	668	634	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	145	171	696	149	172	349	1211	-	-	769	-	-
Mov Cap-2 Maneuver	145	171	-	149	172	-	-	-	-	-	-	-
Stage 1	659	635	-	332	355	-	-	-	-	-	-	-
Stage 2	320	354	-	665	634	-	-	-	-	-	-	-
Approach												
EB			WB			NB			SB			
HCM Control Delay, s	15.6		20.5			0.1			0			
HCM LOS	C		C									
Minor Lane/Major Mvmt			NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	1211		-	-	344	247	769	-	-	-		
HCM Lane V/C Ratio	0.007		-	-	0.009	0.057	-	-	-	-		
HCM Control Delay (s)	8		0	-	15.6	20.5	0	-	-	-		
HCM Lane LOS	A		A	-	C	C	A	-	-	-		
HCM 95th %tile Q(veh)	0		-	-	0	0.2	0	-	-	-		

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	4	3	786	320	11
Future Vol, veh/h	6	4	3	786	320	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	4	3	854	348	12
Major/Minor						
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1214	354	360	0	-	0
Stage 1	354	-	-	-	-	-
Stage 2	860	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	201	690	1199	-	-	-
Stage 1	710	-	-	-	-	-
Stage 2	414	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	200	690	1199	-	-	-
Mov Cap-2 Maneuver	200	-	-	-	-	-
Stage 1	706	-	-	-	-	-
Stage 2	414	-	-	-	-	-
Approach						
Approach	EB	NB		SB		
HCM Control Delay, s	18.4	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt		NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1199	-	279	-	-	-
HCM Lane V/C Ratio	0.003	-	0.039	-	-	-
HCM Control Delay (s)	8	0	18.4	-	-	-
HCM Lane LOS	A	A	C	-	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-	-

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↖	↖	↑	↗	
Traffic Vol, veh/h	7	3	35	808	292	11
Future Vol, veh/h	7	3	35	808	292	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	275	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	3	38	878	317	12

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1277	323	329	0	-	0
Stage 1	323	-	-	-	-	-
Stage 2	954	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	184	718	1231	-	-	-
Stage 1	734	-	-	-	-	-
Stage 2	374	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	178	718	1231	-	-	-
Mov Cap-2 Maneuver	178	-	-	-	-	-
Stage 1	711	-	-	-	-	-
Stage 2	374	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.3	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1231	-	178	718	-	-
HCM Lane V/C Ratio	0.031	-	0.043	0.005	-	-
HCM Control Delay (s)	8	-	26.1	10	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0	-	-

Intersection

Int Delay, s/veh 1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	238	8	20	203	4	18	1	14	2	0	1
Future Vol, veh/h	1	238	8	20	203	4	18	1	14	2	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	259	9	22	221	4	20	1	15	2	0	1

Major/Minor	Major1	Major2		Minor1		Minor2						
Conflicting Flow All	225	0	0	268	0	0	534	535	264	541	537	223
Stage 1	-	-	-	-	-	-	266	266	-	267	267	-
Stage 2	-	-	-	-	-	-	268	269	-	274	270	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1344	-	-	1296	-	-	457	452	775	452	450	817
Stage 1	-	-	-	-	-	-	739	689	-	738	688	-
Stage 2	-	-	-	-	-	-	738	687	-	732	686	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1344	-	-	1296	-	-	449	443	775	436	441	817
Mov Cap-2 Maneuver	-	-	-	-	-	-	449	443	-	436	441	-
Stage 1	-	-	-	-	-	-	738	688	-	737	675	-
Stage 2	-	-	-	-	-	-	723	674	-	716	685	-

Approach	EB	WB		NB		SB		
HCM Control Delay, s	0	0.7		12.1		12		
HCM LOS				B		B		
<hr/>								
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBC	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	546	1344	-	-	1296	-	-	516
HCM Lane V/C Ratio	0.066	0.001	-	-	0.017	-	-	0.006
HCM Control Delay (s)	12.1	7.7	0	-	7.8	0	-	12
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0

Intersection						
Int Delay, s/veh	3.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	34	34	11	56	74	3
Future Vol, veh/h	34	34	11	56	74	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	37	12	61	80	3
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	74	0	141	56
Stage 1	-	-	-	-	56	-
Stage 2	-	-	-	-	85	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1526	-	852	1011
Stage 1	-	-	-	-	967	-
Stage 2	-	-	-	-	938	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1526	-	845	1011
Mov Cap-2 Maneuver	-	-	-	-	845	-
Stage 1	-	-	-	-	967	-
Stage 2	-	-	-	-	930	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	1.2	9.7			
HCM LOS			A			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	850	-	-	1526	-	
HCM Lane V/C Ratio	0.098	-	-	0.008	-	
HCM Control Delay (s)	9.7	-	-	7.4	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.3	-	-	0	-	

Intersection

Int Delay, s/veh 140.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	574	33	82	245	64	175
Future Vol, veh/h	574	33	82	245	64	175
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	624	36	89	266	70	190

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	609	165	260	0	-	0
Stage 1	165	-	-	-	-	-
Stage 2	444	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 458	879	1304	-	-	-
Stage 1	864	-	-	-	-	-
Stage 2	646	-	-	-	-	-
Platoon blocked, %		-	-	-	-	-
Mov Cap-1 Maneuver	~ 421	879	1304	-	-	-
Mov Cap-2 Maneuver	~ 421	-	-	-	-	-
Stage 1	795	-	-	-	-	-
Stage 2	646	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	271.1	2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1304	-	433	-	-
HCM Lane V/C Ratio	0.068	-	1.524	-	-
HCM Control Delay (s)	8	0	271.1	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.2	-	35.3	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 26.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	B	T	T	U	U
Traffic Vol, veh/h	301	46	60	443	123	118
Future Vol, veh/h	301	46	60	443	123	118
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	327	50	65	482	134	128

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	702	306	0	0	547
Stage 1	306	-	-	-	-
Stage 2	396	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	404	734	-	-	1022
Stage 1	747	-	-	-	-
Stage 2	680	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	351	734	-	-	1022
Mov Cap-2 Maneuver	351	-	-	-	-
Stage 1	747	-	-	-	-
Stage 2	591	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	80.2	0	4.6
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	377	1022	-
HCM Lane V/C Ratio	-	-	1	0.131	-
HCM Control Delay (s)	-	-	80.2	9.1	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	11.9	0.5	-

HCM 6th Signalized Intersection Summary
1: SR-29 & Main Street & SR-53

Baseline +Project AM
11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑↓		↑	↑	↑↑	↑↑	↑↑		↑	↑↑	↑
Traffic Volume (veh/h)	317	40	104	36	38	59	161	382	55	65	301	292
Future Volume (veh/h)	317	40	104	36	38	59	161	382	55	65	301	292
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00			1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	345	43	113	39	41	64	175	415	60	71	327	317
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	526	93	245	74	176	246	232	1090	157	109	998	445
Arrive On Green	0.15	0.20	0.20	0.04	0.09	0.09	0.13	0.35	0.35	0.06	0.28	0.28
Sat Flow, veh/h	3456	456	1199	1781	1870	1585	1781	3119	448	1781	3554	1585
Grp Volume(v), veh/h	345	0	156	39	41	64	175	235	240	71	327	317
Grp Sat Flow(s), veh/h/ln	1728	0	1655	1781	1870	1585	1781	1777	1790	1781	1777	1585
Q Serve(g_s), s	4.9	0.0	4.3	1.1	1.1	1.9	5.0	5.2	5.3	2.0	3.8	9.4
Cycle Q Clear(g_c), s	4.9	0.0	4.3	1.1	1.1	1.9	5.0	5.2	5.3	2.0	3.8	9.4
Prop In Lane	1.00			1.00			1.00	1.00		0.25	1.00	1.00
Lane Grp Cap(c), veh/h	526	0	339	74	176	246	232	621	626	109	998	445
V/C Ratio(X)	0.66	0.00	0.46	0.53	0.23	0.26	0.76	0.38	0.38	0.65	0.33	0.71
Avail Cap(c_a), veh/h	1547	0	1056	288	659	656	865	1608	1619	424	2335	1042
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.0	0.0	18.3	24.7	22.0	19.5	22.0	12.8	12.8	24.1	14.9	17.0
Incr Delay (d2), s/veh	1.4	0.0	1.0	5.8	0.7	0.6	5.0	0.4	0.4	6.3	0.2	2.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.9	0.0	1.6	0.6	0.5	0.7	2.2	1.9	1.9	1.0	1.4	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.4	0.0	19.3	30.5	22.7	20.1	27.0	13.2	13.2	30.4	15.1	19.1
LnGrp LOS	C	A	B	C	C	C	C	B	B	C	B	B
Approach Vol, veh/h						144			650			715
Approach Delay, s/veh	21.4				23.6			16.9			18.4	
Approach LOS		C				C			B		B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+R _c), s	7.7	22.9	6.7	15.3	11.3	19.2	12.5	9.4				
Change Period (Y+R _c), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	12.5	47.5	8.5	33.5	25.5	34.5	23.5	18.5				
Max Q Clear Time (g_c+l1), s	4.0	7.3	3.1	6.3	7.0	11.4	6.9	3.9				
Green Ext Time (p_c), s	0.1	3.2	0.0	0.9	0.4	3.3	1.1	0.3				
Intersection Summary												
HCM 6th Ctrl Delay				19.0								
HCM 6th LOS				B								

Intersection

Int Delay, s/veh 1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	0	19	0	45	0	517	14	44	446	2
Future Vol, veh/h	1	0	0	19	0	45	0	517	14	44	446	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	50	-	-	-	375	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	21	0	49	0	562	15	48	485	2

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1176	1159	486	1152	1153	570	487	0	0	577	0	0
Stage 1	582	582	-	570	570	-	-	-	-	-	-	-
Stage 2	594	577	-	582	583	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	168	196	581	175	197	521	1076	-	-	996	-	-
Stage 1	499	499	-	506	505	-	-	-	-	-	-	-
Stage 2	491	502	-	499	499	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	147	187	581	169	188	521	1076	-	-	996	-	-
Mov Cap-2 Maneuver	147	187	-	169	188	-	-	-	-	-	-	-
Stage 1	499	475	-	506	505	-	-	-	-	-	-	-
Stage 2	445	502	-	475	475	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	29.7	17.5			0			0.8		
HCM LOS	D	C								
<hr/>										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR	
Capacity (veh/h)	1076	-	-	147	169	521	996	-	-	
HCM Lane V/C Ratio	-	-	-	0.007	0.122	0.094	0.048	-	-	
HCM Control Delay (s)	0	-	-	29.7	29.2	12.6	8.8	-	-	
HCM Lane LOS	A	-	-	D	D	B	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	0	0.4	0.3	0.2	-	-	

Intersection

Int Delay, s/veh 5.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
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Lane Configurations						
Traffic Vol, veh/h	115	64	433	57	22	446
Future Vol, veh/h	115	64	433	57	22	446
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	125	70	471	62	24	485

Major/Minor	Minor1	Major1	Major2
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Conflicting Flow All	1035	502	0	0	533	0
Stage 1	502	-	-	-	-	-
Stage 2	533	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	257	569	-	-	1035	-
Stage 1	608	-	-	-	-	-
Stage 2	588	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	251	569	-	-	1035	-
Mov Cap-2 Maneuver	251	-	-	-	-	-
Stage 1	608	-	-	-	-	-
Stage 2	574	-	-	-	-	-

Approach	WB	NB	SB
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HCM Control Delay, s	33.5	0	0.4
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
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Capacity (veh/h)	-	-	314	1035	-
HCM Lane V/C Ratio	-	-	0.62	0.023	-
HCM Control Delay (s)	-	-	33.5	8.6	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	3.9	0.1	-

Intersection

Int Delay, s/veh 3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	1	63	0	61	1	536	23	18	565	1
Future Vol, veh/h	3	0	1	63	0	61	1	536	23	18	565	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	50	-	-	50	275	-	275	375	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	1	68	0	66	1	583	25	20	614	1

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1285	1264	614	1240	1240	583	615	0	0	608	0	0
Stage 1	654	654	-	585	585	-	-	-	-	-	-	-
Stage 2	631	610	-	655	655	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	142	169	492	152	175	512	965	-	-	970	-	-
Stage 1	456	463	-	497	498	-	-	-	-	-	-	-
Stage 2	469	485	-	455	463	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	122	165	492	149	171	512	965	-	-	970	-	-
Mov Cap-2 Maneuver	122	165	-	149	171	-	-	-	-	-	-	-
Stage 1	456	453	-	497	498	-	-	-	-	-	-	-
Stage 2	408	485	-	445	453	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB				
HCM Control Delay, s	29.5	30.9			0			0.3				
HCM LOS	D	D										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	965	-	-	122	492	149	512	970	-	-		
HCM Lane V/C Ratio	0.001	-	-	0.027	0.002	0.46	0.13	0.02	-	-		
HCM Control Delay (s)	8.7	-	-	35.3	12.3	48.2	13.1	8.8	-	-		
HCM Lane LOS	A	-	-	E	B	E	B	A	-	-		
HCM 95th %tile Q(veh)	0	-	-	0.1	0	2.1	0.4	0.1	-	-		

Intersection			
Intersection Delay, s/veh	14.0		
Intersection LOS	B		
Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	471	662	716
Demand Flow Rate, veh/h	480	676	730
Vehicles Circulating, veh/h	488	97	366
Vehicles Exiting, veh/h	285	999	602
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	12.9	9.0	19.3
Approach LOS	B	A	C
Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	480	676	730
Cap Entry Lane, veh/h	839	1250	950
Entry HV Adj Factor	0.981	0.980	0.980
Flow Entry, veh/h	471	662	716
Cap Entry, veh/h	823	1225	931
V/C Ratio	0.572	0.541	0.768
Control Delay, s/veh	12.9	9.0	19.3
LOS	B	A	C
95th %tile Queue, veh	4	3	8

Intersection

Int Delay, s/veh 0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	0	1	3	1	4	5	570	3	1	868	22
Future Vol, veh/h	10	0	1	3	1	4	5	570	3	1	868	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	50	-	-	-	125	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	1	3	1	4	5	620	3	1	943	24

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1591	1590	955	1590	1601	622	967	0	0	623	0	0
Stage 1	957	957	-	632	632	-	-	-	-	-	-	-
Stage 2	634	633	-	958	969	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	87	108	313	87	106	487	712	-	-	958	-	-
Stage 1	310	336	-	468	474	-	-	-	-	-	-	-
Stage 2	467	473	-	309	332	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	85	107	313	86	105	487	712	-	-	958	-	-
Mov Cap-2 Maneuver	85	107	-	86	105	-	-	-	-	-	-	-
Stage 1	308	336	-	465	471	-	-	-	-	-	-	-
Stage 2	459	470	-	308	332	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	50.1	30.1			0.1			0		
HCM LOS	F	D								
<hr/>										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR	
Capacity (veh/h)	712	-	-	85	313	152	958	-	-	
HCM Lane V/C Ratio	0.008	-	-	0.128	0.003	0.057	0.001	-	-	
HCM Control Delay (s)	10.1	-	-	53.5	16.5	30.1	8.8	-	-	
HCM Lane LOS	B	-	-	F	C	D	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	0.4	0	0.2	0	-	-	

Intersection

Int Delay, s/veh 4.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖ ↗ ↘ ↖ ↙ ↘					
Traffic Vol, veh/h	60	83	343	70	132	766
Future Vol, veh/h	60	83	343	70	132	766
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	75	-	-	325	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	90	373	76	143	833

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1530	411	0	0	449
Stage 1	411	-	-	-	-
Stage 2	1119	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	129	641	-	-	1111
Stage 1	669	-	-	-	-
Stage 2	312	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	112	641	-	-	1111
Mov Cap-2 Maneuver	112	-	-	-	-
Stage 1	669	-	-	-	-
Stage 2	272	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	37.9	0	1.3
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	112	641	1111	-
HCM Lane V/C Ratio	-	-	0.582	0.141	0.129	-
HCM Control Delay (s)	-	-	74.5	11.5	8.7	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	2.8	0.5	0.4	-

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↔	↔		
Traffic Vol, veh/h	213	6	0	159	5	2
Future Vol, veh/h	213	6	0	159	5	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	232	7	0	173	5	2
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	239	0	409	236
Stage 1	-	-	-	-	236	-
Stage 2	-	-	-	-	173	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1328	-	599	803
Stage 1	-	-	-	-	803	-
Stage 2	-	-	-	-	857	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1328	-	599	803
Mov Cap-2 Maneuver	-	-	-	-	599	-
Stage 1	-	-	-	-	803	-
Stage 2	-	-	-	-	857	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0	10.6			
HCM LOS			B			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	646	-	-	1328	-	
HCM Lane V/C Ratio	0.012	-	-	-	-	
HCM Control Delay (s)	10.6	-	-	0	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↔	↔		
Traffic Vol, veh/h	196	2	2	138	5	0
Future Vol, veh/h	196	2	2	138	5	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	213	2	2	150	5	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	215	0	368	214
Stage 1	-	-	-	-	214	-
Stage 2	-	-	-	-	154	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1355	-	632	826
Stage 1	-	-	-	-	822	-
Stage 2	-	-	-	-	874	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1355	-	631	826
Mov Cap-2 Maneuver	-	-	-	-	631	-
Stage 1	-	-	-	-	822	-
Stage 2	-	-	-	-	872	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0.1	10.8			
HCM LOS			B			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	631	-	-	1355	-	
HCM Lane V/C Ratio	0.009	-	-	0.002	-	
HCM Control Delay (s)	10.8	-	-	7.7	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

HCM 6th Signalized Intersection Summary
10: Calistoga Road (SR-29)/SR-29 & Wardlaw Street

Baseline +Project AM

11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	6	40	6	34	18	10	324	1	11	595	337
Future Volume (veh/h)	148	6	40	6	34	18	10	324	1	11	595	337
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	161	7	43	7	37	20	11	352	1	12	647	366
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	304	13	54	80	205	99	243	1249	4	730	752	425
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.67	0.67	0.67	0.67	0.67	0.67
Sat Flow, veh/h	1100	71	300	74	1140	552	556	1864	5	1028	1122	635
Grp Volume(v), veh/h	211	0	0	64	0	0	11	0	353	12	0	1013
Grp Sat Flow(s), veh/h/ln	1471	0	0	1766	0	0	556	0	1869	1028	0	1756
Q Serve(g_s), s	6.2	0.0	0.0	0.0	0.0	0.0	0.9	0.0	4.6	0.3	0.0	26.9
Cycle Q Clear(g_c), s	8.1	0.0	0.0	1.8	0.0	0.0	27.8	0.0	4.6	4.9	0.0	26.9
Prop In Lane	0.76			0.20	0.11		0.31	1.00		0.00	1.00	0.36
Lane Grp Cap(c), veh/h	370	0	0	384	0	0	243	0	1253	730	0	1177
V/C Ratio(X)	0.57	0.00	0.00	0.17	0.00	0.00	0.05	0.00	0.28	0.02	0.00	0.86
Avail Cap(c_a), veh/h	575	0	0	633	0	0	442	0	1921	1098	0	1805
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.3	0.0	0.0	20.9	0.0	0.0	18.6	0.0	4.0	5.0	0.0	7.7
Incr Delay (d2), s/veh	1.4	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.1	0.0	0.0	2.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.8	0.0	0.0	0.7	0.0	0.0	0.1	0.0	1.2	0.0	0.0	7.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.7	0.0	0.0	21.1	0.0	0.0	18.6	0.0	4.1	5.0	0.0	10.5
LnGrp LOS	C	A	A	C	A	A	B	A	A	A	A	B
Approach Vol, veh/h	211				64			364			1025	
Approach Delay, s/veh	24.7				21.1			4.6			10.5	
Approach LOS	C				C			A			B	
Timer - Assigned Phs	2			4			6		8			
Phs Duration (G+Y+R _c), s	44.6			15.2			44.6		15.2			
Change Period (Y+R _c), s	4.5			4.5			4.5		4.5			
Max Green Setting (Gmax), s	61.5			19.5			61.5		19.5			
Max Q Clear Time (g_c+l1), s	29.8			10.1			28.9		3.8			
Green Ext Time (p_c), s	2.4			0.8			11.2		0.2			
Intersection Summary												
HCM 6th Ctrl Delay				11.4								
HCM 6th LOS				B								

Intersection

Int Delay, s/veh 1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	2	14	3	3	4	12	304	9	11	713	4
Future Vol, veh/h	22	2	14	3	3	4	12	304	9	11	713	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	2	15	3	3	4	13	330	10	12	775	4

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1166	1167	777	1171	1164	335	779	0	0	340	0	0
Stage 1	801	801	-	361	361	-	-	-	-	-	-	-
Stage 2	365	366	-	810	803	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	171	194	397	170	194	707	838	-	-	1219	-	-
Stage 1	378	397	-	657	626	-	-	-	-	-	-	-
Stage 2	654	623	-	374	396	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	163	187	397	158	187	707	838	-	-	1219	-	-
Mov Cap-2 Maneuver	163	187	-	158	187	-	-	-	-	-	-	-
Stage 1	371	390	-	645	614	-	-	-	-	-	-	-
Stage 2	634	611	-	352	389	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	26.3	20.3			0.3			0.1		
HCM LOS	D	C								
<hr/>										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	838	-	-	210	246	1219	-	-		
HCM Lane V/C Ratio	0.016	-	-	0.197	0.044	0.01	-	-		
HCM Control Delay (s)	9.4	0	-	26.3	20.3	8	0	-		
HCM Lane LOS	A	A	-	D	C	A	A	-		
HCM 95th %tile Q(veh)	0	-	-	0.7	0.1	0	-	-		

HCM 6th Signalized Intersection Summary
12: Calistoga Road (SR-29) & Highway 175/Main Street

Baseline +Project AM

11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	22	101	23	14	12	32	231	6	7	542	121
Future Volume (veh/h)	123	22	101	23	14	12	32	231	6	7	542	121
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	134	24	110	25	15	13	35	251	7	8	589	132
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	295	59	151	280	160	99	152	854	22	95	782	174
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.53	0.53	0.53	0.53	0.53	0.53
Sat Flow, veh/h	655	245	626	602	665	412	93	1610	42	5	1475	327
Grp Volume(v), veh/h	268	0	0	53	0	0	293	0	0	729	0	0
Grp Sat Flow(s), veh/h/ln	1526	0	0	1679	0	0	1745	0	0	1808	0	0
Q Serve(g_s), s	5.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.3	0.0	0.0	0.9	0.0	0.0	3.5	0.0	0.0	12.5	0.0	0.0
Prop In Lane	0.50			0.41	0.47		0.25	0.12		0.02	0.01	0.18
Lane Grp Cap(c), veh/h	505	0	0	540	0	0	1027	0	0	1051	0	0
V/C Ratio(X)	0.53	0.00	0.00	0.10	0.00	0.00	0.29	0.00	0.00	0.69	0.00	0.00
Avail Cap(c_a), veh/h	1151	0	0	1173	0	0	2369	0	0	2586	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.7	0.0	0.0	11.7	0.0	0.0	5.2	0.0	0.0	7.3	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.9	0.0	0.0	0.3	0.0	0.0	0.8	0.0	0.0	3.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.5	0.0	0.0	11.8	0.0	0.0	5.3	0.0	0.0	8.1	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h	268				53			293			729	
Approach Delay, s/veh	14.5				11.8			5.3			8.1	
Approach LOS	B				B			A			A	
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+R _c), s	25.4			14.0			25.4			14.0		
Change Period (Y+R _c), s	4.5			4.5			4.5			4.5		
Max Green Setting (Gmax), s	54.5			26.5			54.5			26.5		
Max Q Clear Time (g_c+l1), s	5.5			8.3			14.5			2.9		
Green Ext Time (p_c), s	2.2			1.5			6.4			0.2		
Intersection Summary												
HCM 6th Ctrl Delay				8.9								
HCM 6th LOS				A								

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	15	5	7	20	7	261	11	32	619	41
Future Vol, veh/h	3	1	15	5	7	20	7	261	11	32	619	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	16	5	8	22	8	284	12	35	673	45

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1087	1078	696	1080	1094	290	718	0	0	296	0	0
Stage 1	766	766	-	306	306	-	-	-	-	-	-	-
Stage 2	321	312	-	774	788	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	194	219	442	196	214	749	883	-	-	1265	-	-
Stage 1	395	412	-	704	662	-	-	-	-	-	-	-
Stage 2	691	658	-	391	402	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	175	207	442	180	202	749	883	-	-	1265	-	-
Mov Cap-2 Maneuver	175	207	-	180	202	-	-	-	-	-	-	-
Stage 1	391	393	-	696	655	-	-	-	-	-	-	-
Stage 2	656	651	-	358	384	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	16.3	16.1			0.2			0.4		
HCM LOS	C	C								
<hr/>										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	883	-	-	340	359	1265	-	-		
HCM Lane V/C Ratio	0.009	-	-	0.061	0.097	0.027	-	-		
HCM Control Delay (s)	9.1	0	-	16.3	16.1	7.9	0	-		
HCM Lane LOS	A	A	-	C	C	A	A	-		
HCM 95th %tile Q(veh)	0	-	-	0.2	0.3	0.1	-	-		

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	2	7	4	0	1	1	245	3	8	628	7
Future Vol, veh/h	3	2	7	4	0	1	1	245	3	8	628	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	2	8	4	0	1	1	266	3	9	683	8

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	975	976	687	980	979	268	691	0	0	269	0	0
Stage 1	705	705	-	270	270	-	-	-	-	-	-	-
Stage 2	270	271	-	710	709	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	231	251	447	229	250	771	904	-	-	1295	-	-
Stage 1	427	439	-	736	686	-	-	-	-	-	-	-
Stage 2	736	685	-	424	437	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	228	248	447	221	247	771	904	-	-	1295	-	-
Mov Cap-2 Maneuver	228	248	-	221	247	-	-	-	-	-	-	-
Stage 1	427	434	-	735	685	-	-	-	-	-	-	-
Stage 2	734	684	-	410	432	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB				
HCM Control Delay, s	16.5	19.3			0			0.1				
HCM LOS	C	C										
<hr/>												
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	904	-	-	325	258	1295	-	-				
HCM Lane V/C Ratio	0.001	-	-	0.04	0.021	0.007	-	-				
HCM Control Delay (s)	9	0	-	16.5	19.3	7.8	0	-				
HCM Lane LOS	A	A	-	C	C	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-				

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	+	+	+	+	+	+	+	+	+	+	+	+
Traffic Vol, veh/h	2	0	1	2	0	3	0	252	0	5	630	3
Future Vol, veh/h	2	0	1	2	0	3	0	252	0	5	630	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	1	2	0	3	0	274	0	5	685	3
Major/Minor												
Minor2		Minor1			Major1			Major2				
Conflicting Flow All	973	971	687	971	972	274	688	0	0	274	0	0
Stage 1	697	697	-	274	274	-	-	-	-	-	-	-
Stage 2	276	274	-	697	698	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	231	253	447	232	252	765	906	-	-	1289	-	-
Stage 1	431	443	-	732	683	-	-	-	-	-	-	-
Stage 2	730	683	-	431	442	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	229	251	447	230	250	765	906	-	-	1289	-	-
Mov Cap-2 Maneuver	229	251	-	230	250	-	-	-	-	-	-	-
Stage 1	431	440	-	732	683	-	-	-	-	-	-	-
Stage 2	727	683	-	427	439	-	-	-	-	-	-	-
Approach												
EB			WB			NB			SB			
HCM Control Delay, s	18.3		14.2			0			0.1			
HCM LOS	C		B									
Minor Lane/Major Mvmt			NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	906		-	-	273	396	1289	-	-			
HCM Lane V/C Ratio	-		-	-	0.012	0.014	0.004	-	-			
HCM Control Delay (s)	0		-	-	18.3	14.2	7.8	0	-			
HCM Lane LOS	A		-	-	C	B	A	A	-			
HCM 95th %tile Q(veh)	0		-	-	0	0	0	-	-			

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		A	B		
Traffic Vol, veh/h	9	5	1	231	632	3
Future Vol, veh/h	9	5	1	231	632	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	5	1	251	687	3
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	942	689	690	0	-	0
Stage 1	689	-	-	-	-	-
Stage 2	253	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	292	446	905	-	-	-
Stage 1	498	-	-	-	-	-
Stage 2	789	-	-	-	-	-
Platoon blocked, %		-	-	-	-	-
Mov Cap-1 Maneuver	292	446	905	-	-	-
Mov Cap-2 Maneuver	292	-	-	-	-	-
Stage 1	498	-	-	-	-	-
Stage 2	789	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	16.3	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	905	-	333	-	-	
HCM Lane V/C Ratio	0.001	-	0.046	-	-	
HCM Control Delay (s)	9	0	16.3	-	-	
HCM Lane LOS	A	A	C	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	7	9	1	223	616	7
Future Vol, veh/h	7	9	1	223	616	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	275	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	10	1	242	670	8

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	918	674	678	0	-	0
Stage 1	674	-	-	-	-	-
Stage 2	244	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	302	455	914	-	-	-
Stage 1	506	-	-	-	-	-
Stage 2	797	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	302	455	914	-	-	-
Mov Cap-2 Maneuver	302	-	-	-	-	-
Stage 1	505	-	-	-	-	-
Stage 2	797	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	14.9	0	0
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HCM LOS	B
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Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
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Capacity (veh/h)	914	-	302	455	-	-
HCM Lane V/C Ratio	0.001	-	0.025	0.022	-	-
HCM Control Delay (s)	8.9	-	17.2	13.1	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.1	-	-

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	201	13	3	128	0	9	0	6	1	0	0
Future Vol, veh/h	1	201	13	3	128	0	9	0	6	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	218	14	3	139	0	10	0	7	1	0	0
Major/Minor												
Major1		Major2			Minor1			Minor2				
Conflicting Flow All	139	0	0	232	0	0	372	372	225	376	379	139
Stage 1	-	-	-	-	-	-	227	227	-	145	145	-
Stage 2	-	-	-	-	-	-	145	145	-	231	234	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1445	-	-	1336	-	-	585	558	814	581	553	909
Stage 1	-	-	-	-	-	-	776	716	-	858	777	-
Stage 2	-	-	-	-	-	-	858	777	-	772	711	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1445	-	-	1336	-	-	584	556	814	575	551	909
Mov Cap-2 Maneuver	-	-	-	-	-	-	584	556	-	575	551	-
Stage 1	-	-	-	-	-	-	775	715	-	857	775	-
Stage 2	-	-	-	-	-	-	856	775	-	765	710	-
Approach												
EB			WB			NB			SB			
HCM Control Delay, s	0			0.2			10.6			11.3		
HCM LOS							B			B		
Minor Lane/Major Mvmt												
Capacity (veh/h)	658	1445	-	-	1336	-	-	-	575			
HCM Lane V/C Ratio	0.025	0.001	-	-	0.002	-	-	-	0.002			
HCM Control Delay (s)	10.6	7.5	0	-	7.7	0	-	-	11.3			
HCM Lane LOS	B	A	A	-	A	A	-	-	B			
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-	0			

Intersection						
Int Delay, s/veh	1.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↔	↔		
Traffic Vol, veh/h	60	85	13	35	32	2
Future Vol, veh/h	60	85	13	35	32	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	92	14	38	35	2
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	157	0	177	111
Stage 1	-	-	-	-	111	-
Stage 2	-	-	-	-	66	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1423	-	813	942
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	957	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1423	-	805	942
Mov Cap-2 Maneuver	-	-	-	-	805	-
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	947	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	2	9.6			
HCM LOS			A			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	812	-	-	1423	-	
HCM Lane V/C Ratio	0.046	-	-	0.01	-	
HCM Control Delay (s)	9.6	-	-	7.6	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

Intersection

Int Delay, s/veh 2.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	124	26	18	40	203	473
Future Vol, veh/h	124	26	18	40	203	473
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	135	28	20	43	221	514

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	561	478	735	0	-	0
Stage 1	478	-	-	-	-	-
Stage 2	83	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	489	587	870	-	-	-
Stage 1	624	-	-	-	-	-
Stage 2	940	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	477	587	870	-	-	-
Mov Cap-2 Maneuver	477	-	-	-	-	-
Stage 1	609	-	-	-	-	-
Stage 2	940	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	15.9	2.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	870	-	493	-	-
HCM Lane V/C Ratio	0.022	-	0.331	-	-
HCM Control Delay (s)	9.2	0	15.9	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.4	-	-

Intersection						
Int Delay, s/veh	27.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	B	T	R	U	↑
Traffic Vol, veh/h	531	42	76	106	30	92
Future Vol, veh/h	531	42	76	106	30	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	577	46	83	115	33	100
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	307	141	0	0	198	0
Stage 1	141	-	-	-	-	-
Stage 2	166	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	685	907	-	-	1375	-
Stage 1	886	-	-	-	-	-
Stage 2	863	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	669	907	-	-	1375	-
Mov Cap-2 Maneuver	669	-	-	-	-	-
Stage 1	886	-	-	-	-	-
Stage 2	842	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	41.3	0	1.9			
HCM LOS	E					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	682	1375	-	
HCM Lane V/C Ratio	-	-	0.913	0.024	-	
HCM Control Delay (s)	-	-	41.3	7.7	-	
HCM Lane LOS	-	-	E	A	-	
HCM 95th %tile Q(veh)	-	-	12	0.1	-	

Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	186	130	1	1	10
Future Vol, veh/h	10	186	130	1	1	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	202	141	1	1	11

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	142	0	-
Stage 1	-	-	142
Stage 2	-	-	224
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1441	-	-
Stage 1	-	-	885
Stage 2	-	-	813
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1441	-	-
Mov Cap-2 Maneuver	-	-	628
Stage 1	-	-	877
Stage 2	-	-	813

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	9.2
HCM LOS		A	

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1441	-	-	-	871
HCM Lane V/C Ratio	0.008	-	-	-	0.014
HCM Control Delay (s)	7.5	0	-	-	9.2
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection

Int Delay, s/veh 1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	162	5	1	106	2	5	0	1	2	0	20
Future Vol, veh/h	20	162	5	1	106	2	5	0	1	2	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	176	5	1	115	2	5	0	1	2	0	22

Major/Minor	Major1	Major2		Minor1		Minor2						
Conflicting Flow All	117	0	0	181	0	0	352	342	179	341	343	116
Stage 1	-	-	-	-	-	-	223	223	-	118	118	-
Stage 2	-	-	-	-	-	-	129	119	-	223	225	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1471	-	-	1394	-	-	603	580	864	613	579	936
Stage 1	-	-	-	-	-	-	780	719	-	887	798	-
Stage 2	-	-	-	-	-	-	875	797	-	780	718	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1471	-	-	1394	-	-	581	570	864	604	569	936
Mov Cap-2 Maneuver	-	-	-	-	-	-	581	570	-	604	569	-
Stage 1	-	-	-	-	-	-	767	707	-	872	797	-
Stage 2	-	-	-	-	-	-	854	796	-	766	706	-

Approach	EB	WB		NB		SB		
HCM Control Delay, s	0.8	0.1		10.9		9.2		
HCM LOS				B		A		
<hr/>								
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	615	1471	-	-	1394	-	-	891
HCM Lane V/C Ratio	0.011	0.015	-	-	0.001	-	-	0.027
HCM Control Delay (s)	10.9	7.5	0	-	7.6	0	-	9.2
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Intersection						
Int Delay, s/veh	3.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	63	102	46	8	8	63
Future Vol, veh/h	63	102	46	8	8	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	111	50	9	9	68
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	59	0	-	0	302	55
Stage 1	-	-	-	-	55	-
Stage 2	-	-	-	-	247	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1545	-	-	-	690	1012
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	794	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1545	-	-	-	658	1012
Mov Cap-2 Maneuver	-	-	-	-	658	-
Stage 1	-	-	-	-	923	-
Stage 2	-	-	-	-	794	-
Approach	EB	WB	SB			
HCM Control Delay, s	2.8	0	9.1			
HCM LOS			A			
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1545	-	-	-	954	
HCM Lane V/C Ratio	0.044	-	-	-	0.081	
HCM Control Delay (s)	7.4	0	-	-	9.1	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3	

HCM 6th Signalized Intersection Summary
1: SR-29 & Main Street & SR-53

Baseline +Project PM
11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑		↑	↑	↑	↑↑	↑↑		↑	↑↑	↑
Traffic Volume (veh/h)	311	42	158	69	44	91	166	508	66	96	474	369
Future Volume (veh/h)	311	42	158	69	44	91	166	508	66	96	474	369
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	338	46	172	75	48	99	180	552	72	104	515	401
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	487	61	230	105	178	273	233	1248	162	137	1210	540
Arrive On Green	0.14	0.18	0.18	0.06	0.10	0.10	0.13	0.39	0.39	0.08	0.34	0.34
Sat Flow, veh/h	3456	346	1292	1781	1870	1585	1781	3162	411	1781	3554	1585
Grp Volume(v), veh/h	338	0	218	75	48	99	180	310	314	104	515	401
Grp Sat Flow(s), veh/h/ln	1728	0	1638	1781	1870	1585	1781	1777	1796	1781	1777	1585
Q Serve(g_s), s	5.7	0.0	7.8	2.5	1.5	3.4	6.0	7.9	7.9	3.5	6.9	13.7
Cycle Q Clear(g_c), s	5.7	0.0	7.8	2.5	1.5	3.4	6.0	7.9	7.9	3.5	6.9	13.7
Prop In Lane	1.00		0.79	1.00		1.00	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	487	0	291	105	178	273	233	701	709	137	1210	540
V/C Ratio(X)	0.69	0.00	0.75	0.72	0.27	0.36	0.77	0.44	0.44	0.76	0.43	0.74
Avail Cap(c_a), veh/h	1151	0	705	362	562	598	680	1371	1386	449	2281	1017
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.2	0.0	24.0	28.5	25.8	22.5	25.9	13.7	13.7	27.9	15.7	17.9
Incr Delay (d2), s/veh	1.8	0.0	3.9	8.8	0.8	0.8	5.4	0.4	0.4	8.4	0.2	2.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.3	0.0	3.1	1.3	0.7	1.3	2.8	2.9	2.9	1.7	2.6	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.0	0.0	27.9	37.3	26.6	23.3	31.3	14.1	14.1	36.3	15.9	20.0
LnGrp LOS	C	A	C	D	C	C	C	B	B	D	B	B
Approach Vol, veh/h		556			222			804			1020	
Approach Delay, s/veh		27.3			28.8			18.0			19.6	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+R _c), s	9.2	28.8	8.1	15.4	12.5	25.5	13.2	10.4				
Change Period (Y+R _c), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	15.5	47.5	12.5	26.5	23.5	39.5	20.5	18.5				
Max Q Clear Time (g_c+l1), s	5.5	9.9	4.5	9.8	8.0	15.7	7.7	5.4				
Green Ext Time (p_c), s	0.2	4.3	0.1	1.2	0.4	5.2	1.0	0.4				
Intersection Summary												
HCM 6th Ctrl Delay			21.5									
HCM 6th LOS			C									

Intersection

Int Delay, s/veh 1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	0	17	0	48	0	719	22	79	658	2
Future Vol, veh/h	1	0	0	17	0	48	0	719	22	79	658	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	50	-	-	-	375	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	18	0	52	0	782	24	86	715	2

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1708	1694	716	1682	1683	794	717	0	0	806	0	0
Stage 1	888	888	-	794	794	-	-	-	-	-	-	-
Stage 2	820	806	-	888	889	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	72	93	430	75	94	388	884	-	-	819	-	-
Stage 1	338	362	-	381	400	-	-	-	-	-	-	-
Stage 2	369	395	-	338	361	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	57	83	430	69	84	388	884	-	-	819	-	-
Mov Cap-2 Maneuver	57	83	-	69	84	-	-	-	-	-	-	-
Stage 1	338	324	-	381	400	-	-	-	-	-	-	-
Stage 2	319	395	-	303	323	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	69.4	31.3			0			1.1		
HCM LOS	F	D								
<hr/>										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR	
Capacity (veh/h)	884	-	-	57	69	388	819	-	-	
HCM Lane V/C Ratio	-	-	-	0.019	0.268	0.134	0.105	-	-	
HCM Control Delay (s)	0	-	-	69.4	75.3	15.7	9.9	-	-	
HCM Lane LOS	A	-	-	F	F	C	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	0.1	1	0.5	0.3	-	-	

Intersection

Int Delay, s/veh 14

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	B	T	T	U	U
Traffic Vol, veh/h	73	48	710	145	96	623
Future Vol, veh/h	73	48	710	145	96	623
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	79	52	772	158	104	677

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1736	851	0	0	930
Stage 1	851	-	-	-	-
Stage 2	885	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	96	360	-	-	736
Stage 1	419	-	-	-	-
Stage 2	403	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	82	360	-	-	736
Mov Cap-2 Maneuver	82	-	-	-	-
Stage 1	419	-	-	-	-
Stage 2	346	-	-	-	-

Approach WB NB SB

HCM Control Delay, s 187.7 0 1.4

HCM LOS F

Minor Lane/Major Mvmt	NBT	NBR	WB Ln1	SBL	SBT
Capacity (veh/h)	-	-	118	736	-
HCM Lane V/C Ratio	-	-	1.115	0.142	-
HCM Control Delay (s)	-	-	187.7	10.7	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	7.9	0.5	-

Intersection

Int Delay, s/veh 3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	6	33	0	37	2	853	58	52	643	1
Future Vol, veh/h	3	1	6	33	0	37	2	853	58	52	643	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	50	-	-	50	275	-	275	375	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	7	36	0	40	2	927	63	57	699	1

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1796	1807	699	1749	1745	927	700	0	0	990	0	0
Stage 1	813	813	-	931	931	-	-	-	-	-	-	-
Stage 2	983	994	-	818	814	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	62	79	440	67	86	325	897	-	-	698	-	-
Stage 1	372	392	-	320	346	-	-	-	-	-	-	-
Stage 2	299	323	-	370	391	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	51	72	440	61	79	325	897	-	-	698	-	-
Mov Cap-2 Maneuver	51	72	-	61	79	-	-	-	-	-	-	-
Stage 1	371	360	-	319	345	-	-	-	-	-	-	-
Stage 2	261	322	-	334	359	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB				
HCM Control Delay, s	38.4	69.1			0			0.8				
HCM LOS	E	F										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	897	-	-	55	440	61	325	698	-	-		
HCM Lane V/C Ratio	0.002	-	-	0.079	0.015	0.588	0.124	0.081	-	-		
HCM Control Delay (s)	9	-	-	76	13.3	126.9	17.6	10.6	-	-		
HCM Lane LOS	A	-	-	F	B	F	C	B	-	-		
HCM 95th %tile Q(veh)	0	-	-	0.2	0	2.4	0.4	0.3	-	-		

Intersection			
Intersection Delay, s/veh	39.2		
Intersection LOS	E		
Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	241	1266	698
Demand Flow Rate, veh/h	246	1292	712
Vehicles Circulating, veh/h	906	116	148
Vehicles Exiting, veh/h	502	744	1004
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	14.3	59.7	10.6
Approach LOS	B	F	B
Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	246	1292	712
Cap Entry Lane, veh/h	548	1226	1187
Entry HV Adj Factor	0.980	0.980	0.981
Flow Entry, veh/h	241	1266	698
Cap Entry, veh/h	537	1201	1164
V/C Ratio	0.449	1.054	0.600
Control Delay, s/veh	14.3	59.7	10.6
LOS	B	F	B
95th %tile Queue, veh	2	26	4

Intersection

Int Delay, s/veh 1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	0	3	5	0	10	2	1137	3	6	639	3
Future Vol, veh/h	15	0	3	5	0	10	2	1137	3	6	639	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	50	-	-	-	125	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	0	3	5	0	11	2	1236	3	7	695	3

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1958	1954	697	1954	1954	1238	698	0	0	1239	0	0
Stage 1	711	711	-	1242	1242	-	-	-	-	-	-	-
Stage 2	1247	1243	-	712	712	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	48	64	441	48	64	214	898	-	-	562	-	-
Stage 1	424	436	-	214	247	-	-	-	-	-	-	-
Stage 2	213	246	-	423	436	-	-	-	-	-	-	-
Platoon blocked, %							-	-	-	-	-	-
Mov Cap-1 Maneuver	45	63	441	47	63	214	898	-	-	562	-	-
Mov Cap-2 Maneuver	45	63	-	47	63	-	-	-	-	-	-	-
Stage 1	423	431	-	214	247	-	-	-	-	-	-	-
Stage 2	202	246	-	415	431	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	106.3	48.9			0			0.1		
HCM LOS	F	E								
<hr/>										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR	
Capacity (veh/h)	898	-	-	45	441	98	562	-	-	
HCM Lane V/C Ratio	0.002	-	-	0.362	0.007	0.166	0.012	-	-	
HCM Control Delay (s)	9	-	-	124.9	13.2	48.9	11.5	-	-	
HCM Lane LOS	A	-	-	F	B	E	B	-	-	
HCM 95th %tile Q(veh)	0	-	-	1.3	0	0.6	0	-	-	

Intersection

Int Delay, s/veh 71.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
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Lane Configurations						
Traffic Vol, veh/h	132	242	930	152	176	339
Future Vol, veh/h	132	242	930	152	176	339
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	75	-	-	325	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	143	263	1011	165	191	368

Major/Minor	Minor1	Major1	Major2
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Conflicting Flow All	1844	1094	0	0	1176	0
Stage 1	1094	-	-	-	-	-
Stage 2	750	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	~ 82	~ 260	-	-	594	-
Stage 1	321	-	-	-	-	-
Stage 2	467	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 56	~ 260	-	-	594	-
Mov Cap-2 Maneuver	~ 56	-	-	-	-	-
Stage 1	321	-	-	-	-	-
Stage 2	317	-	-	-	-	-

Approach	WB	NB	SB
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HCM Control Delay, s\$	370.7	0	4.8
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HCM LOS	F
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Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
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Capacity (veh/h)	-	-	56	260	594	-
HCM Lane V/C Ratio	-	-	2.562	1.012	0.322	-
HCM Control Delay (s)	-	\$ 865.3	100.9	13.9	-	-
HCM Lane LOS	-	-	F	F	B	-
HCM 95th %tile Q(veh)	-	-	14.6	10.1	1.4	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↔	↔		
Traffic Vol, veh/h	332	3	2	378	4	1
Future Vol, veh/h	332	3	2	378	4	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	361	3	2	411	4	1
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	364	0	778	363
Stage 1	-	-	-	-	363	-
Stage 2	-	-	-	-	415	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1195	-	365	682
Stage 1	-	-	-	-	704	-
Stage 2	-	-	-	-	666	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1195	-	364	682
Mov Cap-2 Maneuver	-	-	-	-	364	-
Stage 1	-	-	-	-	704	-
Stage 2	-	-	-	-	665	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0	14.1			
HCM LOS			B			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	401	-	-	1195	-	
HCM Lane V/C Ratio	0.014	-	-	0.002	-	
HCM Control Delay (s)	14.1	-	-	8	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↔	↔		
Traffic Vol, veh/h	323	3	1	354	2	0
Future Vol, veh/h	323	3	1	354	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	351	3	1	385	2	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	354	0	740	353
Stage 1	-	-	-	-	353	-
Stage 2	-	-	-	-	387	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1205	-	384	691
Stage 1	-	-	-	-	711	-
Stage 2	-	-	-	-	686	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1205	-	384	691
Mov Cap-2 Maneuver	-	-	-	-	384	-
Stage 1	-	-	-	-	711	-
Stage 2	-	-	-	-	685	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0	14.4			
HCM LOS			B			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	384	-	-	1205	-	
HCM Lane V/C Ratio	0.006	-	-	0.001	-	
HCM Control Delay (s)	14.4	-	-	8	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

HCM 6th Signalized Intersection Summary
10: Calistoga Road (SR-29)/SR-29 & Wardlaw Street

Baseline +Project PM

11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	3	36	36	10	42	14	941	13	8	429	119
Future Volume (veh/h)	123	3	36	36	10	42	14	941	13	8	429	119
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00			1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	134	3	39	39	11	46	15	1023	14	9	466	129
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	296	9	52	171	62	125	560	1240	17	283	950	263
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.67	0.67	0.67	0.67	0.67	0.67
Sat Flow, veh/h	1135	56	339	481	404	814	823	1841	25	544	1410	390
Grp Volume(v), veh/h	176	0	0	96	0	0	15	0	1037	9	0	595
Grp Sat Flow(s), veh/h/ln	1530	0	0	1699	0	0	823	0	1866	544	0	1800
Q Serve(g_s), s	2.9	0.0	0.0	0.0	0.0	0.0	0.5	0.0	21.3	0.6	0.0	8.4
Cycle Q Clear(g_c), s	5.5	0.0	0.0	2.6	0.0	0.0	8.9	0.0	21.3	21.9	0.0	8.4
Prop In Lane	0.76		0.22	0.41			0.48	1.00		0.01	1.00	0.22
Lane Grp Cap(c), veh/h	357	0	0	358	0	0	560	0	1257	283	0	1213
V/C Ratio(X)	0.49	0.00	0.00	0.27	0.00	0.00	0.03	0.00	0.82	0.03	0.00	0.49
Avail Cap(c_a), veh/h	638	0	0	662	0	0	991	0	2234	568	0	2156
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.9	0.0	0.0	19.8	0.0	0.0	6.3	0.0	6.2	14.3	0.0	4.1
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.4	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.0	0.0	0.0	1.0	0.0	0.0	0.1	0.0	4.8	0.1	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	21.9	0.0	0.0	20.2	0.0	0.0	6.3	0.0	7.7	14.3	0.0	4.5
LnGrp LOS	C	A	A	C	A	A	A	A	A	B	A	A
Approach Vol, veh/h	176			96			1052		604			
Approach Delay, s/veh	21.9			20.2			7.7		4.6			
Approach LOS	C			C			A		A			
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+R _c), s	39.7		12.5		39.7		12.5					
Change Period (Y+R _c), s	4.5		4.5		4.5		4.5					
Max Green Setting (Gmax), s	62.5		18.5		62.5		18.5					
Max Q Clear Time (g_c+l1), s	23.3		7.5		23.9		4.6					
Green Ext Time (p_c), s	11.9		0.7		4.9		0.3					
Intersection Summary												
HCM 6th Ctrl Delay			8.6									
HCM 6th LOS			A									

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	+	+	+	+	+	+	+	+	+	+	+	+
Traffic Vol, veh/h	6	1	5	3	0	4	5	941	13	9	526	6
Future Vol, veh/h	6	1	5	3	0	4	5	941	13	9	526	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	1	5	3	0	4	5	1023	14	10	572	7
Major/Minor	Minor2	Minor1	Minor1	Major1	Major1	Major1	Major2	Major2	Major2	Major2	Major2	Major2
Conflicting Flow All	1638	1643	576	1639	1639	1030	579	0	0	1037	0	0
Stage 1	596	596	-	1040	1040	-	-	-	-	-	-	-
Stage 2	1042	1047	-	599	599	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	80	100	517	80	100	283	995	-	-	670	-	-
Stage 1	490	492	-	278	307	-	-	-	-	-	-	-
Stage 2	277	305	-	488	490	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	77	97	517	76	97	283	995	-	-	670	-	-
Mov Cap-2 Maneuver	77	97	-	76	97	-	-	-	-	-	-	-
Stage 1	484	481	-	275	303	-	-	-	-	-	-	-
Stage 2	269	301	-	471	479	-	-	-	-	-	-	-
Approach	EB	WB	WB	NB	NB	NB	SB	SB	SB	SB	SB	SB
HCM Control Delay, s	37.7	34.2	34.2	0	0	0	0.2	0.2	0.2	0.2	0.2	0.2
HCM LOS	E	D	D	A	A	A	B	B	B	C	C	C
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR	SBR	SBR	SBR	SBR
Capacity (veh/h)	995	-	-	123	131	670	-	-	-	-	-	-
HCM Lane V/C Ratio	0.005	-	-	0.106	0.058	0.015	-	-	-	-	-	-
HCM Control Delay (s)	8.6	0	-	37.7	34.2	10.5	0	-	-	-	-	-
HCM Lane LOS	A	A	-	E	D	B	A	-	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0	-	-	-	-	-	-

HCM 6th Signalized Intersection Summary
12: Calistoga Road (SR-29) & Highway 175/Main Street

Baseline +Project PM

11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	219	12	70	23	23	12	55	721	8	2	393	150
Future Volume (veh/h)	219	12	70	23	23	12	55	721	8	2	393	150
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	238	13	76	25	25	13	60	784	9	2	427	163
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	397	19	92	231	217	93	111	954	11	65	733	279
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.57	0.57	0.57	0.57	0.57	0.57
Sat Flow, veh/h	1055	70	341	520	800	343	75	1678	19	1	1289	490
Grp Volume(v), veh/h	327	0	0	63	0	0	853	0	0	592	0	0
Grp Sat Flow(s), veh/h/ln	1466	0	0	1664	0	0	1772	0	0	1781	0	0
Q Serve(g_s), s	10.1	0.0	0.0	0.0	0.0	0.0	9.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	11.6	0.0	0.0	1.5	0.0	0.0	21.8	0.0	0.0	12.0	0.0	0.0
Prop In Lane	0.73		0.23	0.40		0.21	0.07		0.01	0.00		0.28
Lane Grp Cap(c), veh/h	508	0	0	541	0	0	1076	0	0	1077	0	0
V/C Ratio(X)	0.64	0.00	0.00	0.12	0.00	0.00	0.79	0.00	0.00	0.55	0.00	0.00
Avail Cap(c_a), veh/h	796	0	0	852	0	0	1767	0	0	1790	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	19.0	0.0	0.0	15.4	0.0	0.0	9.7	0.0	0.0	7.8	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	0.0	0.1	0.0	0.0	1.4	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	3.7	0.0	0.0	0.6	0.0	0.0	6.4	0.0	0.0	3.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	20.4	0.0	0.0	15.5	0.0	0.0	11.1	0.0	0.0	8.3	0.0	0.0
LnGrp LOS	C	A	A	B	A	A	B	A	A	A	A	A
Approach Vol, veh/h	327			63			853			592		
Approach Delay, s/veh	20.4			15.5			11.1			8.3		
Approach LOS	C			B			B			A		
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+R _c), s	36.4		19.7		36.4		19.7					
Change Period (Y+R _c), s	4.5		4.5		4.5		4.5					
Max Green Setting (Gmax), s	54.5		26.5		54.5		26.5					
Max Q Clear Time (g_c+l1), s	23.8		13.6		14.0		3.5					
Green Ext Time (p_c), s	8.1		1.6		4.8		0.3					
Intersection Summary												
HCM 6th Ctrl Delay			12.0									
HCM 6th LOS			B									

Intersection															
Int Delay, s/veh	1.5														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			
Lane Configurations															
Traffic Vol, veh/h	6	4	19	6	7	27	22	790	11	20	381	60			
Future Vol, veh/h	6	4	19	6	7	27	22	790	11	20	381	60			
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0			
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free			
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None			
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-			
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-			
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-			
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92			
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2			
Mvmt Flow	7	4	21	7	8	29	24	859	12	22	414	65			
Major/Minor	Minor2	Minor1			Major1			Major2							
Conflicting Flow All	1423	1410	447	1416	1436	865	479	0	0	871	0	0			
Stage 1	491	491	-	913	913	-	-	-	-	-	-	-			
Stage 2	932	919	-	503	523	-	-	-	-	-	-	-			
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-			
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-			
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-			
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-			
Pot Cap-1 Maneuver	114	138	612	115	133	353	1083	-	-	774	-	-			
Stage 1	559	548	-	328	352	-	-	-	-	-	-	-			
Stage 2	320	350	-	551	530	-	-	-	-	-	-	-			
Platoon blocked, %								-	-	-	-	-			
Mov Cap-1 Maneuver	93	127	612	102	122	353	1083	-	-	774	-	-			
Mov Cap-2 Maneuver	93	127	-	102	122	-	-	-	-	-	-	-			
Stage 1	535	527	-	314	337	-	-	-	-	-	-	-			
Stage 2	274	335	-	507	509	-	-	-	-	-	-	-			
Approach	EB			WB			NB			SB					
HCM Control Delay, s	23.3			26.8			0.2			0.4					
HCM LOS	C			D											
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR							
Capacity (veh/h)	1083	-	-	228	208	774	-	-							
HCM Lane V/C Ratio	0.022	-	-	0.138	0.209	0.028	-	-							
HCM Control Delay (s)	8.4	0	-	23.3	26.8	9.8	0	-							
HCM Lane LOS	A	A	-	C	D	A	A	-							
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.8	0.1	-	-							

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	1	2	1	9	3	873	7	9	383	5
Future Vol, veh/h	1	0	1	2	1	9	3	873	7	9	383	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	1	2	1	10	3	949	8	10	416	5

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1404	1402	419	1398	1400	953	421	0	0	957	0	0
Stage 1	439	439	-	959	959	-	-	-	-	-	-	-
Stage 2	965	963	-	439	441	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	117	140	634	118	140	314	1138	-	-	719	-	-
Stage 1	597	578	-	309	335	-	-	-	-	-	-	-
Stage 2	306	334	-	597	577	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	111	137	634	116	137	314	1138	-	-	719	-	-
Mov Cap-2 Maneuver	111	137	-	116	137	-	-	-	-	-	-	-
Stage 1	593	568	-	307	333	-	-	-	-	-	-	-
Stage 2	294	332	-	585	567	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB			
HCM Control Delay, s	24.3	21.9			0			0.2			
HCM LOS	C	C									
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Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	1138	-	-	189	226	719	-	-			
HCM Lane V/C Ratio	0.003	-	-	0.012	0.058	0.014	-	-			
HCM Control Delay (s)	8.2	0	-	24.3	21.9	10.1	0	-			
HCM Lane LOS	A	A	-	C	C	B	A	-			
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-			

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	2	4	0	9	8	865	7	0	364	5
Future Vol, veh/h	3	1	2	4	0	9	8	865	7	0	364	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	2	4	0	10	9	940	8	0	396	5

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1366	1365	399	1362	1363	944	401	0	0	948	0	0
Stage 1	399	399	-	962	962	-	-	-	-	-	-	-
Stage 2	967	966	-	400	401	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	124	147	651	125	148	318	1158	-	-	724	-	-
Stage 1	627	602	-	308	334	-	-	-	-	-	-	-
Stage 2	306	333	-	626	601	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	119	145	651	122	146	318	1158	-	-	724	-	-
Mov Cap-2 Maneuver	119	145	-	122	146	-	-	-	-	-	-	-
Stage 1	617	602	-	303	329	-	-	-	-	-	-	-
Stage 2	292	328	-	623	601	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	26.9	23.1			0.1			0		
HCM LOS	D	C								
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Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	1158	-	-	171	213	724	-	-		
HCM Lane V/C Ratio	0.008	-	-	0.038	0.066	-	-	-		
HCM Control Delay (s)	8.1	0	-	26.9	23.1	0	-	-		
HCM Lane LOS	A	A	-	D	C	A	-	-		
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0	-	-		

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		A	B		
Traffic Vol, veh/h	6	4	3	851	367	11
Future Vol, veh/h	6	4	3	851	367	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	4	3	925	399	12

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1336	405	411	0	-	0
Stage 1	405	-	-	-	-	-
Stage 2	931	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	169	646	1148	-	-	-
Stage 1	673	-	-	-	-	-
Stage 2	384	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	168	646	1148	-	-	-
Mov Cap-2 Maneuver	168	-	-	-	-	-
Stage 1	670	-	-	-	-	-
Stage 2	384	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1148	-	239	-	-
HCM Lane V/C Ratio	0.003	-	0.045	-	-
HCM Control Delay (s)	8.1	0	20.8	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	11	3	35	869	337	13
Future Vol, veh/h	11	3	35	869	337	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	275	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	3	38	945	366	14
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1394	373	380	0	-	0
Stage 1	373	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	156	673	1178	-	-	-
Stage 1	696	-	-	-	-	-
Stage 2	348	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	151	673	1178	-	-	-
Mov Cap-2 Maneuver	151	-	-	-	-	-
Stage 1	674	-	-	-	-	-
Stage 2	348	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	26.5	0.3	0			
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1178	-	151	673	-	-
HCM Lane V/C Ratio	0.032	-	0.079	0.005	-	-
HCM Control Delay (s)	8.2	-	30.9	10.4	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	0	-	-

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	281	8	22	235	4	18	1	16	2	0	1
Future Vol, veh/h	1	281	8	22	235	4	18	1	16	2	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	305	9	24	255	4	20	1	17	2	0	1

Major/Minor	Major1	Major2			Minor1			Minor2				
Conflicting Flow All	259	0	0	314	0	0	618	619	310	626	621	257
Stage 1	-	-	-	-	-	-	312	312	-	305	305	-
Stage 2	-	-	-	-	-	-	306	307	-	321	316	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1306	-	-	1246	-	-	402	404	730	397	403	782
Stage 1	-	-	-	-	-	-	699	658	-	705	662	-
Stage 2	-	-	-	-	-	-	704	661	-	691	655	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1306	-	-	1246	-	-	394	394	730	380	393	782
Mov Cap-2 Maneuver	-	-	-	-	-	-	394	394	-	380	393	-
Stage 1	-	-	-	-	-	-	698	657	-	704	647	-
Stage 2	-	-	-	-	-	-	687	646	-	673	654	-

Approach	EB	WB			NB			SB					
HCM Control Delay, s	0	0.7			12.8			12.9					
HCM LOS					B			B					
<hr/>													
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3	SBLn4	SBLn5	SBLn6
Capacity (veh/h)	499	1306	-	-	1246	-	-	459	-	-	-	-	-
HCM Lane V/C Ratio	0.076	0.001	-	-	0.019	-	-	0.007	-	-	-	-	-
HCM Control Delay (s)	12.8	7.8	0	-	7.9	0	-	12.9	-	-	-	-	-
HCM Lane LOS	B	A	A	-	A	A	-	B	-	-	-	-	-
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0	-	-	-	-	-

Intersection						
Int Delay, s/veh	3.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	46	47	11	72	92	3
Future Vol, veh/h	46	47	11	72	92	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	51	12	78	100	3
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	101	0	178	76
Stage 1	-	-	-	-	76	-
Stage 2	-	-	-	-	102	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1491	-	812	985
Stage 1	-	-	-	-	947	-
Stage 2	-	-	-	-	922	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1491	-	806	985
Mov Cap-2 Maneuver	-	-	-	-	806	-
Stage 1	-	-	-	-	947	-
Stage 2	-	-	-	-	915	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	1	10.1			
HCM LOS			B			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	811	-	-	1491	-	
HCM Lane V/C Ratio	0.127	-	-	0.008	-	
HCM Control Delay (s)	10.1	-	-	7.4	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.4	-	-	0	-	

Intersection

Int Delay, s/veh 187.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	615	33	82	262	76	206
Future Vol, veh/h	615	33	82	262	76	206
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	668	36	89	285	83	224

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	658	195	307	0	-	0
Stage 1	195	-	-	-	-	-
Stage 2	463	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 429	846	1254	-	-	-
Stage 1	838	-	-	-	-	-
Stage 2	~ 634	-	-	-	-	-
Platoon blocked, %		-	-	-	-	-
Mov Cap-1 Maneuver	~ 393	846	1254	-	-	-
Mov Cap-2 Maneuver	~ 393	-	-	-	-	-
Stage 1	768	-	-	-	-	-
Stage 2	~ 634	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, \$s	368.2	1.9	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1254	-	404	-	-
HCM Lane V/C Ratio	0.071	-	1.743	-	-
HCM Control Delay (s)	8.1	\$ 368.2	-	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.2	-	43.6	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 42.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
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Lane Configurations						
Traffic Vol, veh/h	327	51	60	477	130	118
Future Vol, veh/h	327	51	60	477	130	118
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	355	55	65	518	141	128

Major/Minor	Minor1	Major1	Major2
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Conflicting Flow All	734	324	0	0	583	0
Stage 1	324	-	-	-	-	-
Stage 2	410	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	387	717	-	-	991	-
Stage 1	733	-	-	-	-	-
Stage 2	670	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 332	717	-	-	991	-
Mov Cap-2 Maneuver	~ 332	-	-	-	-	-
Stage 1	733	-	-	-	-	-
Stage 2	575	-	-	-	-	-

Approach	WB	NB	SB
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HCM Control Delay, s	127.6	0	4.8
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HCM LOS	F
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Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	358	991	-
HCM Lane V/C Ratio	-	-	1.148	0.143	-
HCM Control Delay (s)	-	-	127.6	9.2	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	16.1	0.5	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	296	335	3	3	20
Future Vol, veh/h	27	296	335	3	3	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	322	364	3	3	22
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	367	0	-	0	746	366
Stage 1	-	-	-	-	366	-
Stage 2	-	-	-	-	380	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1192	-	-	-	381	679
Stage 1	-	-	-	-	702	-
Stage 2	-	-	-	-	691	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1192	-	-	-	370	679
Mov Cap-2 Maneuver	-	-	-	-	370	-
Stage 1	-	-	-	-	681	-
Stage 2	-	-	-	-	691	-
Approach	EB	WB	SB			
HCM Control Delay, s	0.7	0	11.1			
HCM LOS			B			
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1192	-	-	-	612	
HCM Lane V/C Ratio	0.025	-	-	-	0.041	
HCM Control Delay (s)	8.1	0	-	-	11.1	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	

Intersection

Int Delay, s/veh 1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	54	231	14	2	288	7	10	0	1	5	0	40
Future Vol, veh/h	54	231	14	2	288	7	10	0	1	5	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	59	251	15	2	313	8	11	0	1	5	0	43

Major/Minor	Major1	Major2		Minor1		Minor2						
Conflicting Flow All	321	0	0	266	0	0	720	702	259	698	705	317
Stage 1	-	-	-	-	-	-	377	377	-	321	321	-
Stage 2	-	-	-	-	-	-	343	325	-	377	384	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1239	-	-	1298	-	-	343	362	780	355	361	724
Stage 1	-	-	-	-	-	-	644	616	-	691	652	-
Stage 2	-	-	-	-	-	-	672	649	-	644	611	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1239	-	-	1298	-	-	308	341	780	339	340	724
Mov Cap-2 Maneuver	-	-	-	-	-	-	308	341	-	339	340	-
Stage 1	-	-	-	-	-	-	608	582	-	652	651	-
Stage 2	-	-	-	-	-	-	630	648	-	607	577	-

Approach	EB	WB		NB		SB		
HCM Control Delay, s	1.5	0.1		16.5		11.1		
HCM LOS				C		B		
<hr/>								
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	326	1239	-	-	1298	-	-	643
HCM Lane V/C Ratio	0.037	0.047	-	-	0.002	-	-	0.076
HCM Control Delay (s)	16.5	8.1	0	-	7.8	0	-	11.1
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.2

Intersection						
Int Delay, s/veh	5.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	177	60	167	22	16	130
Future Vol, veh/h	177	60	167	22	16	130
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	192	65	182	24	17	141
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	206	0	-	0	643	194
Stage 1	-	-	-	-	194	-
Stage 2	-	-	-	-	449	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1365	-	-	-	438	847
Stage 1	-	-	-	-	839	-
Stage 2	-	-	-	-	643	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1365	-	-	-	374	847
Mov Cap-2 Maneuver	-	-	-	-	374	-
Stage 1	-	-	-	-	717	-
Stage 2	-	-	-	-	643	-
Approach	EB	WB	SB			
HCM Control Delay, s	6	0	11.1			
HCM LOS			B			
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1365	-	-	-	744	
HCM Lane V/C Ratio	0.141	-	-	-	0.213	
HCM Control Delay (s)	8.1	0	-	-	11.1	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.5	-	-	-	0.8	

HCM 6th Signalized Intersection Summary
1: SR-29 & Main Street & SR-53

Cumulative AM
11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑		↑	↑	↑	↑↑	↑↑		↑	↑↑	↑
Traffic Volume (veh/h)	355	45	109	37	42	66	187	444	64	73	321	327
Future Volume (veh/h)	355	45	109	37	42	66	187	444	64	73	321	327
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	386	49	118	40	46	72	203	483	70	79	349	355
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	555	100	241	73	160	234	262	1192	172	110	1057	471
Arrive On Green	0.16	0.21	0.21	0.04	0.09	0.09	0.15	0.38	0.38	0.06	0.30	0.30
Sat Flow, veh/h	3456	487	1172	1781	1870	1585	1781	3117	450	1781	3554	1585
Grp Volume(v), veh/h	386	0	167	40	46	72	203	274	279	79	349	355
Grp Sat Flow(s), veh/h/ln	1728	0	1659	1781	1870	1585	1781	1777	1789	1781	1777	1585
Q Serve(g_s), s	6.1	0.0	5.2	1.3	1.3	2.4	6.4	6.6	6.6	2.5	4.5	11.8
Cycle Q Clear(g_c), s	6.1	0.0	5.2	1.3	1.3	2.4	6.4	6.6	6.6	2.5	4.5	11.8
Prop In Lane	1.00		0.71	1.00		1.00	1.00		0.25	1.00		1.00
Lane Grp Cap(c), veh/h	555	0	340	73	160	234	262	680	685	110	1057	471
V/C Ratio(X)	0.70	0.00	0.49	0.55	0.29	0.31	0.77	0.40	0.41	0.72	0.33	0.75
Avail Cap(c_a), veh/h	1396	0	984	230	595	602	811	1420	1430	413	2046	913
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.1	0.0	20.4	27.4	24.9	22.1	23.9	13.1	13.1	26.8	15.9	18.5
Incr Delay (d2), s/veh	1.6	0.0	1.1	6.3	1.0	0.7	4.9	0.4	0.4	8.3	0.2	2.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.4	0.0	2.0	0.6	0.6	0.9	2.9	2.4	2.4	1.3	1.7	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.7	0.0	21.5	33.7	25.9	22.9	28.7	13.5	13.5	35.1	16.1	21.0
LnGrp LOS	C	A	C	C	C	C	C	B	B	D	B	C
Approach Vol, veh/h		553			158			756			783	
Approach Delay, s/veh		23.7			26.5			17.6			20.2	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+R _c), s	8.1	26.8	6.9	16.4	13.1	21.8	13.8	9.5				
Change Period (Y+R _c), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	13.5	46.5	7.5	34.5	26.5	33.5	23.5	18.5				
Max Q Clear Time (g_c+l1), s	4.5	8.6	3.3	7.2	8.4	13.8	8.1	4.4				
Green Ext Time (p_c), s	0.1	3.8	0.0	1.0	0.5	3.5	1.2	0.3				
Intersection Summary												
HCM 6th Ctrl Delay			20.6									
HCM 6th LOS			C									

Intersection

Int Delay, s/veh 1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	0	20	0	50	0	604	16	49	472	2
Future Vol, veh/h	1	0	0	20	0	50	0	604	16	49	472	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	50	-	-	-	375	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	22	0	54	0	657	17	53	513	2

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1313	1294	514	1286	1287	666	515	0	0	674	0	0
Stage 1	620	620	-	666	666	-	-	-	-	-	-	-
Stage 2	693	674	-	620	621	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	135	163	560	141	164	459	1051	-	-	917	-	-
Stage 1	476	480	-	449	457	-	-	-	-	-	-	-
Stage 2	434	454	-	476	479	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	114	154	560	135	154	459	1051	-	-	917	-	-
Mov Cap-2 Maneuver	114	154	-	135	154	-	-	-	-	-	-	-
Stage 1	476	452	-	449	457	-	-	-	-	-	-	-
Stage 2	383	454	-	448	451	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	36.9	20.4			0			0.9		
HCM LOS	E	C								
<hr/>										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR	
Capacity (veh/h)	1051	-	-	114	135	459	917	-	-	
HCM Lane V/C Ratio	-	-	-	0.01	0.161	0.118	0.058	-	-	
HCM Control Delay (s)	0	-	-	36.9	36.7	13.9	9.2	-	-	
HCM Lane LOS	A	-	-	E	E	B	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	0	0.6	0.4	0.2	-	-	

Intersection

Int Delay, s/veh 9.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
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Lane Configurations						
Traffic Vol, veh/h	127	72	511	65	25	471
Future Vol, veh/h	127	72	511	65	25	471
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	138	78	555	71	27	512

Major/Minor	Minor1	Major1	Major2
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Conflicting Flow All	1157	591	0	0	626	0
Stage 1	591	-	-	-	-	-
Stage 2	566	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	217	507	-	-	956	-
Stage 1	553	-	-	-	-	-
Stage 2	568	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	211	507	-	-	956	-
Mov Cap-2 Maneuver	211	-	-	-	-	-
Stage 1	553	-	-	-	-	-
Stage 2	552	-	-	-	-	-

Approach	WB	NB	SB
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HCM Control Delay, s	57.3	0	0.4
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HCM LOS	F
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Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	268	956	-
HCM Lane V/C Ratio	-	-	0.807	0.028	-
HCM Control Delay (s)	-	-	57.3	8.9	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	6.3	0.1	-

Intersection

Int Delay, s/veh 14.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	1	119	0	150	1	545	40	47	576	1
Future Vol, veh/h	3	0	1	119	0	150	1	545	40	47	576	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	50	-	-	50	275	-	275	375	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	1	129	0	163	1	592	43	51	626	1

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1425	1365	626	1323	1323	592	627	0	0	635	0	0
Stage 1	728	728	-	594	594	-	-	-	-	-	-	-
Stage 2	697	637	-	729	729	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	113	147	484	133	156	506	955	-	-	948	-	-
Stage 1	415	429	-	491	493	-	-	-	-	-	-	-
Stage 2	431	471	-	414	428	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	73	139	484	~127	147	506	955	-	-	948	-	-
Mov Cap-2 Maneuver	73	139	-	~127	147	-	-	-	-	-	-	-
Stage 1	415	406	-	491	493	-	-	-	-	-	-	-
Stage 2	292	471	-	391	405	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	45.6	75.7			0			0.7		
HCM LOS	E	F								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	955	-	-	73	484	127	506	948	-	-
HCM Lane V/C Ratio	0.001	-	-	0.045	0.002	1.018	0.322	0.054	-	-
HCM Control Delay (s)	8.8	-	-	56.6	12.5	151.6	15.5	9	-	-
HCM Lane LOS	A	-	-	F	B	F	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	7.1	1.4	0.2	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection			
Intersection Delay, s/veh	19.5		
Intersection LOS	C		
Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	526	696	791
Demand Flow Rate, veh/h	537	710	807
Vehicles Circulating, veh/h	501	107	409
Vehicles Exiting, veh/h	316	1109	628
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	15.5	9.8	30.6
Approach LOS	C	A	D
Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	537	710	807
Cap Entry Lane, veh/h	828	1237	909
Entry HV Adj Factor	0.980	0.981	0.981
Flow Entry, veh/h	526	696	791
Cap Entry, veh/h	811	1213	892
V/C Ratio	0.649	0.574	0.888
Control Delay, s/veh	15.5	9.8	30.6
LOS	C	A	D
95th %tile Queue, veh	5	4	12

Intersection

Int Delay, s/veh 0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	0	1	3	1	4	6	597	3	1	963	25
Future Vol, veh/h	11	0	1	3	1	4	6	597	3	1	963	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	50	-	-	-	125	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	0	1	3	1	4	7	649	3	1	1047	27

Major/Minor	Minor2	Minor1				Major1		Major2				
Conflicting Flow All	1730	1729	1061	1728	1741	651	1074	0	0	652	0	0
Stage 1	1063	1063	-	665	665	-	-	-	-	-	-	-
Stage 2	667	666	-	1063	1076	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	69	88	272	70	87	469	649	-	-	935	-	-
Stage 1	270	300	-	449	458	-	-	-	-	-	-	-
Stage 2	448	457	-	270	296	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	67	87	272	69	86	469	649	-	-	935	-	-
Mov Cap-2 Maneuver	67	87	-	69	86	-	-	-	-	-	-	-
Stage 1	267	300	-	444	453	-	-	-	-	-	-	-
Stage 2	438	452	-	269	296	-	-	-	-	-	-	-

Approach	EB	WB				NB		SB				
HCM Control Delay, s	65.8	35.7				0.1		0				
HCM LOS	F	E										
<hr/>												
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	649	-	-	67	272	126	935	-	-			
HCM Lane V/C Ratio	0.01	-	-	0.178	0.004	0.069	0.001	-	-			
HCM Control Delay (s)	10.6	-	-	70.1	18.3	35.7	8.9	-	-			
HCM Lane LOS	B	-	-	F	C	E	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	0.6	0	0.2	0	-	-			

Intersection

Int Delay, s/veh 1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖ ↗ ↘ ↖ ↗ ↘					
Traffic Vol, veh/h	14	34	399	25	87	901
Future Vol, veh/h	14	34	399	25	87	901
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	75	-	-	325	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	37	434	27	95	979

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1617	448	0	0	461
Stage 1	448	-	-	-	-
Stage 2	1169	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	114	611	-	-	1100
Stage 1	644	-	-	-	-
Stage 2	295	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	104	611	-	-	1100
Mov Cap-2 Maneuver	104	-	-	-	-
Stage 1	644	-	-	-	-
Stage 2	270	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.3	0	0.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	104	611	1100	-
HCM Lane V/C Ratio	-	-	0.146	0.06	0.086	-
HCM Control Delay (s)	-	-	45.5	11.3	8.6	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.2	0.3	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↔	↔		
Traffic Vol, veh/h	137	7	0	71	6	2
Future Vol, veh/h	137	7	0	71	6	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	149	8	0	77	7	2
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	157	0	230	153
Stage 1	-	-	-	-	153	-
Stage 2	-	-	-	-	77	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1423	-	758	893
Stage 1	-	-	-	-	875	-
Stage 2	-	-	-	-	946	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1423	-	758	893
Mov Cap-2 Maneuver	-	-	-	-	758	-
Stage 1	-	-	-	-	875	-
Stage 2	-	-	-	-	946	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0	9.6			
HCM LOS			A			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	788	-	-	1423	-	
HCM Lane V/C Ratio	0.011	-	-	-	-	
HCM Control Delay (s)	9.6	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Intersection

Int Delay, s/veh 0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↔	↔	
Traffic Vol, veh/h	118	2	2	48	6	0
Future Vol, veh/h	118	2	2	48	6	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	128	2	2	52	7	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	130	0	185 129
Stage 1	-	-	-	-	129 -
Stage 2	-	-	-	-	56 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1455	-	804 921
Stage 1	-	-	-	-	897 -
Stage 2	-	-	-	-	967 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1455	-	803 921
Mov Cap-2 Maneuver	-	-	-	-	803 -
Stage 1	-	-	-	-	897 -
Stage 2	-	-	-	-	966 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	803	-	-	1455	-
HCM Lane V/C Ratio	0.008	-	-	0.001	-
HCM Control Delay (s)	9.5	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM 6th Signalized Intersection Summary
10: Calistoga Road (SR-29)/SR-29 & Wardlaw Street

Cumulative AM

11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	7	45	7	38	20	11	329	1	12	659	376
Future Volume (veh/h)	163	7	45	7	38	20	11	329	1	12	659	376
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00			1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	177	8	49	8	41	22	12	358	1	13	716	409
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	288	9	57	66	212	102	174	1302	4	734	780	446
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.70	0.70	0.70	0.70	0.70	0.70
Sat Flow, veh/h	1114	50	308	78	1149	551	501	1864	5	1022	1117	638
Grp Volume(v), veh/h	234	0	0	71	0	0	12	0	359	13	0	1125
Grp Sat Flow(s), veh/h/ln	1472	0	0	1778	0	0	501	0	1869	1022	0	1755
Q Serve(g_s), s	9.1	0.0	0.0	0.0	0.0	0.0	1.6	0.0	5.5	0.4	0.0	41.4
Cycle Q Clear(g_c), s	11.7	0.0	0.0	2.6	0.0	0.0	43.0	0.0	5.5	5.9	0.0	41.4
Prop In Lane	0.76		0.21	0.11			0.31	1.00		0.00	1.00	0.36
Lane Grp Cap(c), veh/h	354	0	0	381	0	0	174	0	1305	734	0	1226
V/C Ratio(X)	0.66	0.00	0.00	0.19	0.00	0.00	0.07	0.00	0.28	0.02	0.00	0.92
Avail Cap(c_a), veh/h	432	0	0	475	0	0	231	0	1519	851	0	1426
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.1	0.0	0.0	26.6	0.0	0.0	27.8	0.0	4.3	5.4	0.0	9.8
Incr Delay (d2), s/veh	2.7	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.1	0.0	0.0	8.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	4.3	0.0	0.0	1.1	0.0	0.0	0.2	0.0	1.6	0.1	0.0	14.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	32.8	0.0	0.0	26.9	0.0	0.0	28.0	0.0	4.4	5.4	0.0	18.6
LnGrp LOS	C	A	A	C	A	A	C	A	A	A	A	B
Approach Vol, veh/h	234				71			371			1138	
Approach Delay, s/veh	32.8				26.9			5.2			18.5	
Approach LOS	C				C			A			B	
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+R _c), s	58.2		18.7		58.2		18.7					
Change Period (Y+R _c), s	4.5		4.5		4.5		4.5					
Max Green Setting (Gmax), s	62.5		18.5		62.5		18.5					
Max Q Clear Time (g_c+l1), s	45.0		13.7		43.4		4.6					
Green Ext Time (p_c), s	2.1		0.5		10.3		0.2					
Intersection Summary												
HCM 6th Ctrl Delay			17.9									
HCM 6th LOS			B									

Intersection

Int Delay, s/veh 1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	2	16	3	3	4	13	307	10	12	791	4
Future Vol, veh/h	25	2	16	3	3	4	13	307	10	12	791	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	2	17	3	3	4	14	334	11	13	860	4

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1259	1261	862	1266	1258	340	864	0	0	345	0	0
Stage 1	888	888	-	368	368	-	-	-	-	-	-	-
Stage 2	371	373	-	898	890	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	147	170	355	146	171	702	779	-	-	1214	-	-
Stage 1	338	362	-	652	621	-	-	-	-	-	-	-
Stage 2	649	618	-	334	361	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	139	163	355	133	164	702	779	-	-	1214	-	-
Mov Cap-2 Maneuver	139	163	-	133	164	-	-	-	-	-	-	-
Stage 1	331	354	-	638	607	-	-	-	-	-	-	-
Stage 2	627	604	-	309	353	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	31.7	22.6			0.4			0.1		
HCM LOS	D	C								
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Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	779	-	-	181	215	1214	-	-		
HCM Lane V/C Ratio	0.018	-	-	0.258	0.051	0.011	-	-		
HCM Control Delay (s)	9.7	0	-	31.7	22.6	8	0	-		
HCM Lane LOS	A	A	-	D	C	A	A	-		
HCM 95th %tile Q(veh)	0.1	-	-	1	0.2	0	-	-		

HCM 6th Signalized Intersection Summary
12: Calistoga Road (SR-29) & Highway 175/Main Street

Cumulative AM

11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	25	113	26	16	13	36	238	7	8	599	135
Future Volume (veh/h)	125	25	113	26	16	13	36	238	7	8	599	135
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	136	27	123	28	17	14	39	259	8	9	651	147
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	269	59	161	261	152	93	152	874	25	82	824	184
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.56	0.56	0.56	0.56	0.56	0.56
Sat Flow, veh/h	628	242	657	594	621	378	115	1562	45	6	1473	329
Grp Volume(v), veh/h	286	0	0	59	0	0	306	0	0	807	0	0
Grp Sat Flow(s), veh/h/ln	1528	0	0	1593	0	0	1722	0	0	1807	0	0
Q Serve(g_s), s	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.9	0.0	0.0	1.2	0.0	0.0	4.0	0.0	0.0	16.3	0.0	0.0
Prop In Lane	0.48			0.43	0.47		0.24	0.13		0.03	0.01	0.18
Lane Grp Cap(c), veh/h	490	0	0	506	0	0	1052	0	0	1090	0	0
V/C Ratio(X)	0.58	0.00	0.00	0.12	0.00	0.00	0.29	0.00	0.00	0.74	0.00	0.00
Avail Cap(c_a), veh/h	950	0	0	952	0	0	2031	0	0	2245	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.1	0.0	0.0	13.6	0.0	0.0	5.4	0.0	0.0	8.1	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.5	0.0	0.0	0.4	0.0	0.0	1.1	0.0	0.0	4.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.2	0.0	0.0	13.7	0.0	0.0	5.5	0.0	0.0	9.1	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h	286			59			306			807		
Approach Delay, s/veh	17.2			13.7			5.5			9.1		
Approach LOS	B			B			A			A		
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+R _c), s	30.3		15.8		30.3		15.8					
Change Period (Y+R _c), s	4.5		4.5		4.5		4.5					
Max Green Setting (Gmax), s	55.5		25.5		55.5		25.5					
Max Q Clear Time (g_c+l1), s	6.0		9.9		18.3		3.2					
Green Ext Time (p_c), s	2.3		1.5		7.5		0.2					
Intersection Summary												
HCM 6th Ctrl Delay			10.1									
HCM 6th LOS			B									

Intersection

Int Delay, s/veh 1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	17	6	8	22	8	272	12	36	685	46
Future Vol, veh/h	3	1	17	6	8	22	8	272	12	36	685	46
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	18	7	9	24	9	296	13	39	745	50

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1185	1175	770	1179	1194	303	795	0	0	309	0	0
Stage 1	848	848	-	321	321	-	-	-	-	-	-	-
Stage 2	337	327	-	858	873	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	166	192	401	167	187	737	826	-	-	1252	-	-
Stage 1	356	378	-	691	652	-	-	-	-	-	-	-
Stage 2	677	648	-	352	368	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	146	179	401	150	174	737	826	-	-	1252	-	-
Mov Cap-2 Maneuver	146	179	-	150	174	-	-	-	-	-	-	-
Stage 1	351	357	-	682	644	-	-	-	-	-	-	-
Stage 2	638	640	-	316	347	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	17.7	18.2			0.3			0.4		
HCM LOS	C	C								
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Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	826	-	-	306	311	1252	-	-		
HCM Lane V/C Ratio	0.011	-	-	0.075	0.126	0.031	-	-		
HCM Control Delay (s)	9.4	0	-	17.7	18.2	8	0	-		
HCM Lane LOS	A	A	-	C	C	A	A	-		
HCM 95th %tile Q(veh)	0	-	-	0.2	0.4	0.1	-	-		

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	2	8	4	0	1	1	254	3	9	695	8
Future Vol, veh/h	3	2	8	4	0	1	1	254	3	9	695	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	2	9	4	0	1	1	276	3	10	755	9

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1060	1061	760	1065	1064	278	764	0	0	279	0	0
Stage 1	780	780	-	280	280	-	-	-	-	-	-	-
Stage 2	280	281	-	785	784	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	202	224	406	200	223	761	849	-	-	1284	-	-
Stage 1	388	406	-	727	679	-	-	-	-	-	-	-
Stage 2	727	678	-	386	404	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	199	221	406	192	220	761	849	-	-	1284	-	-
Mov Cap-2 Maneuver	199	221	-	192	220	-	-	-	-	-	-	-
Stage 1	388	400	-	726	678	-	-	-	-	-	-	-
Stage 2	725	677	-	370	398	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB			
HCM Control Delay, s	17.7	21.3			0			0.1			
HCM LOS	C	C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	849	-	-	297	226	1284	-	-			
HCM Lane V/C Ratio	0.001	-	-	0.048	0.024	0.008	-	-			
HCM Control Delay (s)	9.2	0	-	17.7	21.3	7.8	0	-			
HCM Lane LOS	A	A	-	C	C	A	A	-			
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-			

HCM 6th TWSC
15: Calistoga Road (SR-29) & Callayomi Street

Cumulative AM
11/27/2019

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	1	2	0	3	0	263	0	6	699	2
Future Vol, veh/h	1	0	1	2	0	3	0	263	0	6	699	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	1	2	0	3	0	286	0	7	760	2

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1063	1061	761	1062	1062	286	762	0	0	286	0	0
Stage 1	775	775	-	286	286	-	-	-	-	-	-	-
Stage 2	288	286	-	776	776	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	201	224	405	201	223	753	850	-	-	1276	-	-
Stage 1	391	408	-	721	675	-	-	-	-	-	-	-
Stage 2	720	675	-	390	407	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	199	222	405	199	221	753	850	-	-	1276	-	-
Mov Cap-2 Maneuver	199	222	-	199	221	-	-	-	-	-	-	-
Stage 1	391	404	-	721	675	-	-	-	-	-	-	-
Stage 2	717	675	-	385	403	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB			
HCM Control Delay, s	18.6	15.3			0			0.1			
HCM LOS	C	C									
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Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	850	-	-	267	356	1276	-	-			
HCM Lane V/C Ratio	-	-	-	0.008	0.015	0.005	-	-			
HCM Control Delay (s)	0	-	-	18.6	15.3	7.8	0	-			
HCM Lane LOS	A	-	-	C	C	A	A	-			
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-			

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		A	B		
Traffic Vol, veh/h	10	6	1	240	701	3
Future Vol, veh/h	10	6	1	240	701	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	7	1	261	762	3

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1027	764	765	0	-	0
Stage 1	764	-	-	-	-	-
Stage 2	263	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	260	404	848	-	-	-
Stage 1	460	-	-	-	-	-
Stage 2	781	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	260	404	848	-	-	-
Mov Cap-2 Maneuver	260	-	-	-	-	-
Stage 1	460	-	-	-	-	-
Stage 2	781	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	848	-	300	-	-
HCM Lane V/C Ratio	0.001	-	0.058	-	-
HCM Control Delay (s)	9.3	0	17.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑	↗	
Traffic Vol, veh/h	7	10	1	232	684	7
Future Vol, veh/h	7	10	1	232	684	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	275	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	11	1	252	743	8

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1001	747	751	0	-	0
Stage 1	747	-	-	-	-	-
Stage 2	254	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	269	413	858	-	-	-
Stage 1	468	-	-	-	-	-
Stage 2	788	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	269	413	858	-	-	-
Mov Cap-2 Maneuver	269	-	-	-	-	-
Stage 1	468	-	-	-	-	-
Stage 2	788	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	858	-	269	413	-	-
HCM Lane V/C Ratio	0.001	-	0.028	0.026	-	-
HCM Control Delay (s)	9.2	-	18.8	14	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.1	-	-

Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	213	15	2	144	0	10	0	6	1	0	0
Future Vol, veh/h	1	213	15	2	144	0	10	0	6	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	232	16	2	157	0	11	0	7	1	0	0

Major/Minor	Major1	Major2		Minor1		Minor2						
Conflicting Flow All	157	0	0	248	0	0	403	403	240	407	411	157
Stage 1	-	-	-	-	-	-	242	242	-	161	161	-
Stage 2	-	-	-	-	-	-	161	161	-	246	250	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1423	-	-	1318	-	-	558	536	799	555	531	889
Stage 1	-	-	-	-	-	-	762	705	-	841	765	-
Stage 2	-	-	-	-	-	-	841	765	-	758	700	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1423	-	-	1318	-	-	557	534	799	549	529	889
Mov Cap-2 Maneuver	-	-	-	-	-	-	557	534	-	549	529	-
Stage 1	-	-	-	-	-	-	761	704	-	840	763	-
Stage 2	-	-	-	-	-	-	839	763	-	751	699	-

Approach	EB	WB		NB		SB		
HCM Control Delay, s	0	0.1		10.9		11.6		
HCM LOS				B		B		
<hr/>								
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	628	1423	-	-	1318	-	-	549
HCM Lane V/C Ratio	0.028	0.001	-	-	0.002	-	-	0.002
HCM Control Delay (s)	10.9	7.5	0	-	7.7	0	-	11.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection

Int Delay, s/veh 1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
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Lane Configurations						
Traffic Vol, veh/h	64	92	15	33	31	2
Future Vol, veh/h	64	92	15	33	31	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	70	100	16	36	34	2

Major/Minor	Major1	Major2	Minor1
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Conflicting Flow All	0	0	170	0	188	120
Stage 1	-	-	-	-	120	-
Stage 2	-	-	-	-	68	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1407	-	801	931
Stage 1	-	-	-	-	905	-
Stage 2	-	-	-	-	955	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1407	-	791	931
Mov Cap-2 Maneuver	-	-	-	-	791	-
Stage 1	-	-	-	-	905	-
Stage 2	-	-	-	-	944	-

Approach	EB	WB	NB
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HCM Control Delay, s	0	2.4	9.7
HCM LOS		A	

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	798	-	-	1407	-
HCM Lane V/C Ratio	0.045	-	-	0.012	-
HCM Control Delay (s)	9.7	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 6th TWSC
20: Lake County Highway (SR-29) & Tubbs Lane

Cumulative AM
11/27/2019

Intersection

Int Delay, s/veh 3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	126	29	20	40	226	525
Future Vol, veh/h	126	29	20	40	226	525
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	137	32	22	43	246	571

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	619	532	817	0	-	0
Stage 1	532	-	-	-	-	-
Stage 2	87	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	452	547	811	-	-	-
Stage 1	589	-	-	-	-	-
Stage 2	936	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	439	547	811	-	-	-
Mov Cap-2 Maneuver	439	-	-	-	-	-
Stage 1	573	-	-	-	-	-
Stage 2	936	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	17.4	3.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	811	-	456	-	-
HCM Lane V/C Ratio	0.027	-	0.369	-	-
HCM Control Delay (s)	9.6	0	17.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.7	-	-

Intersection

Int Delay, s/veh 48.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	B	T	T	U	U
Traffic Vol, veh/h	590	47	85	107	32	103
Future Vol, veh/h	590	47	85	107	32	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	641	51	92	116	35	112

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	332	150	0	0	208
Stage 1	150	-	-	-	-
Stage 2	182	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	663	896	-	-	1363
Stage 1	878	-	-	-	-
Stage 2	849	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	646	896	-	-	1363
Mov Cap-2 Maneuver	646	-	-	-	-
Stage 1	878	-	-	-	-
Stage 2	827	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	73.4	0	1.8
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	660	1363	-
HCM Lane V/C Ratio	-	-	1.049	0.026	-
HCM Control Delay (s)	-	-	73.4	7.7	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	18.3	0.1	-

HCM 6th Signalized Intersection Summary
1: SR-29 & Main Street & SR-53

Cumulative PM
11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑		↑	↑	↑	↑↑	↑↑		↑	↑↑	↑
Traffic Volume (veh/h)	348	47	159	71	49	102	169	537	68	107	497	413
Future Volume (veh/h)	348	47	159	71	49	102	169	537	68	107	497	413
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	378	51	173	77	53	111	184	584	74	116	540	449
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	518	71	242	100	182	289	234	1285	162	152	1274	568
Arrive On Green	0.15	0.19	0.19	0.06	0.10	0.10	0.13	0.40	0.40	0.09	0.36	0.36
Sat Flow, veh/h	3456	374	1268	1781	1870	1585	1781	3174	401	1781	3554	1585
Grp Volume(v), veh/h	378	0	224	77	53	111	184	326	332	116	540	449
Grp Sat Flow(s), veh/h/ln	1728	0	1642	1781	1870	1585	1781	1777	1798	1781	1777	1585
Q Serve(g_s), s	7.1	0.0	8.7	2.9	1.8	4.2	6.9	9.2	9.2	4.4	7.9	17.4
Cycle Q Clear(g_c), s	7.1	0.0	8.7	2.9	1.8	4.2	6.9	9.2	9.2	4.4	7.9	17.4
Prop In Lane	1.00		0.77	1.00		1.00	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	518	0	314	100	182	289	234	719	728	152	1274	568
V/C Ratio(X)	0.73	0.00	0.71	0.77	0.29	0.38	0.79	0.45	0.46	0.77	0.42	0.79
Avail Cap(c_a), veh/h	1136	0	683	325	505	563	611	1155	1169	429	1946	868
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.8	0.0	25.9	31.9	28.7	24.6	28.8	14.9	14.9	30.7	16.6	19.7
Incr Delay (d2), s/veh	2.0	0.0	3.0	11.7	0.9	0.8	5.8	0.4	0.4	7.8	0.2	2.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	3.0	0.0	3.5	1.5	0.8	1.6	3.2	3.5	3.5	2.1	3.0	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	29.8	0.0	29.0	43.6	29.6	25.5	34.6	15.3	15.3	38.5	16.8	22.5
LnGrp LOS	C	A	C	D	C	C	C	B	B	D	B	C
Approach Vol, veh/h		602			241			842			1105	
Approach Delay, s/veh		29.5			32.2			19.5			21.4	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+R _c), s	10.3	32.2	8.3	17.6	13.5	29.1	14.8	11.2				
Change Period (Y+R _c), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	16.5	44.5	12.5	28.5	23.5	37.5	22.5	18.5				
Max Q Clear Time (g _{c+l1}), s	6.4	11.2	4.9	10.7	8.9	19.4	9.1	6.2				
Green Ext Time (p _c), s	0.2	4.6	0.1	1.2	0.4	5.2	1.1	0.4				
Intersection Summary												
HCM 6th Ctrl Delay			23.5									
HCM 6th LOS			C									

Intersection

Int Delay, s/veh 2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	0	15	0	54	0	751	22	88	679	2
Future Vol, veh/h	1	0	0	15	0	54	0	751	22	88	679	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	50	-	-	-	375	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	16	0	59	0	816	24	96	738	2

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1789	1771	739	1759	1760	828	740	0	0	840	0	0
Stage 1	931	931	-	828	828	-	-	-	-	-	-	-
Stage 2	858	840	-	931	932	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	63	83	417	66	84	371	867	-	-	795	-	-
Stage 1	320	346	-	365	386	-	-	-	-	-	-	-
Stage 2	352	381	-	320	345	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	48	73	417	60	74	371	867	-	-	795	-	-
Mov Cap-2 Maneuver	48	73	-	60	74	-	-	-	-	-	-	-
Stage 1	320	304	-	365	386	-	-	-	-	-	-	-
Stage 2	296	381	-	281	303	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	81.7	31.6			0			1.2		
HCM LOS	F	D								
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Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR	
Capacity (veh/h)	867	-	-	48	60	371	795	-	-	
HCM Lane V/C Ratio	-	-	-	0.023	0.272	0.158	0.12	-	-	
HCM Control Delay (s)	0	-	-	81.7	86	16.5	10.1	-	-	
HCM Lane LOS	A	-	-	F	F	C	B	-	-	
HCM 95th %tile Q(veh)	0	-	-	0.1	1	0.6	0.4	-	-	

Intersection

Int Delay, s/veh 21.7

Movement WBL WBR NBT NBR SBL SBT

Lane Configurations						
Traffic Vol, veh/h	78	54	739	159	107	636
Future Vol, veh/h	78	54	739	159	107	636
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	85	59	803	173	116	691

Major/Minor Minor1 Major1 Major2

Conflicting Flow All	1813	890	0	0	976	0
Stage 1	890	-	-	-	-	-
Stage 2	923	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	86	342	-	-	707	-
Stage 1	401	-	-	-	-	-
Stage 2	387	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 72	342	-	-	707	-
Mov Cap-2 Maneuver	~ 72	-	-	-	-	-
Stage 1	401	-	-	-	-	-
Stage 2	324	-	-	-	-	-

Approach WB NB SB

HCM Control Delay, s	282.9	0	1.6
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	106	707	-
HCM Lane V/C Ratio	-	-	1.354	0.165	-
HCM Control Delay (s)	-	-	282.9	11.1	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	10	0.6	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 17.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	7	61	0	95	2	841	115	148	565	1
Future Vol, veh/h	3	1	7	61	0	95	2	841	115	148	565	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	50	-	-	50	275	-	275	375	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	8	66	0	103	2	914	125	161	614	1

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1968	1979	614	1859	1855	914	615	0	0	1039	0	0
Stage 1	936	936	-	918	918	-	-	-	-	-	-	-
Stage 2	1032	1043	-	941	937	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	47	62	492	~ 56	74	331	965	-	-	669	-	-
Stage 1	318	344	-	326	350	-	-	-	-	-	-	-
Stage 2	281	306	-	316	343	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	26	47	492	~ 44	56	331	965	-	-	669	-	-
Mov Cap-2 Maneuver	26	47	-	~ 44	56	-	-	-	-	-	-	-
Stage 1	317	261	-	325	349	-	-	-	-	-	-	-
Stage 2	193	305	-	235	260	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	62.4	193.5			0			2.5		
HCM LOS	F	F								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	965	-	-	29	492	44	331	669	-	-
HCM Lane V/C Ratio	0.002	-	-	0.15	0.015	1.507	0.312	0.24	-	-
HCM Control Delay (s)	8.7	-	-	149.9	12.4\$	462.6	20.7	12.1	-	-
HCM Lane LOS	A	-	-	F	B	F	C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0	6.6	1.3	0.9	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection			
Intersection Delay, s/veh	58.1		
Intersection LOS	F		
Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	269	1348	638
Demand Flow Rate, veh/h	274	1375	651
Vehicles Circulating, veh/h	943	130	165
Vehicles Exiting, veh/h	561	686	1052
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	16.8	89.2	9.8
Approach LOS	C	F	A
Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	274	1375	651
Cap Entry Lane, veh/h	527	1209	1166
Entry HV Adj Factor	0.982	0.981	0.980
Flow Entry, veh/h	269	1348	638
Cap Entry, veh/h	518	1185	1142
V/C Ratio	0.520	1.138	0.558
Control Delay, s/veh	16.8	89.2	9.8
LOS	C	F	A
95th %tile Queue, veh	3	35	4

Intersection

Int Delay, s/veh 1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	0	3	6	0	11	2	1209	3	7	584	3
Future Vol, veh/h	17	0	3	6	0	11	2	1209	3	7	584	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	50	-	-	-	125	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	0	3	7	0	12	2	1314	3	8	635	3

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1979	1974	637	1974	1974	1316	638	0	0	1317	0	0
Stage 1	653	653	-	1320	1320	-	-	-	-	-	-	-
Stage 2	1326	1321	-	654	654	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	46	62	477	47	62	193	946	-	-	525	-	-
Stage 1	456	464	-	193	226	-	-	-	-	-	-	-
Stage 2	192	226	-	456	463	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	43	61	477	46	61	193	946	-	-	525	-	-
Mov Cap-2 Maneuver	43	61	-	46	61	-	-	-	-	-	-	-
Stage 1	455	457	-	193	226	-	-	-	-	-	-	-
Stage 2	180	226	-	446	456	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	121.8	54.4			0			0.1		
HCM LOS	F	F								
<hr/>										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR	
Capacity (veh/h)	946	-	-	43	477	91	525	-	-	
HCM Lane V/C Ratio	0.002	-	-	0.43	0.007	0.203	0.014	-	-	
HCM Control Delay (s)	8.8	-	-	141.1	12.6	54.4	12	-	-	
HCM Lane LOS	A	-	-	F	B	F	B	-	-	
HCM 95th %tile Q(veh)	0	-	-	1.5	0	0.7	0	-	-	

Intersection

Int Delay, s/veh 5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖ ↗ ↘ ↖ ↙ ↘					
Traffic Vol, veh/h	40	143	999	27	34	408
Future Vol, veh/h	40	143	999	27	34	408
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	75	-	-	325	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	155	1086	29	37	443

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1618	1101	0	0	1115
Stage 1	1101	-	-	-	-
Stage 2	517	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	114	258	-	-	626
Stage 1	318	-	-	-	-
Stage 2	598	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	107	258	-	-	626
Mov Cap-2 Maneuver	107	-	-	-	-
Stage 1	318	-	-	-	-
Stage 2	563	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	42.9	0	0.9
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	107	258	626	-
HCM Lane V/C Ratio	-	-	0.406	0.602	0.059	-
HCM Control Delay (s)	-	-	60	38.1	11.1	-
HCM Lane LOS	-	-	F	E	B	-
HCM 95th %tile Q(veh)	-	-	1.7	3.6	0.2	-

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↔	↔		
Traffic Vol, veh/h	72	3	2	208	4	1
Future Vol, veh/h	72	3	2	208	4	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	78	3	2	226	4	1
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	81	0	310	80
Stage 1	-	-	-	-	80	-
Stage 2	-	-	-	-	230	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1517	-	682	980
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	808	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1517	-	681	980
Mov Cap-2 Maneuver	-	-	-	-	681	-
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	806	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0.1	10			
HCM LOS			B			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	725	-	-	1517	-	
HCM Lane V/C Ratio	0.007	-	-	0.001	-	
HCM Control Delay (s)	10	-	-	7.4	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Intersection

Int Delay, s/veh 0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↓	↔		
Traffic Vol, veh/h	62	3	1	181	2	0
Future Vol, veh/h	62	3	1	181	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	67	3	1	197	2	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	70	0	268 69
Stage 1	-	-	-	-	69 -
Stage 2	-	-	-	-	199 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1531	-	721 994
Stage 1	-	-	-	-	954 -
Stage 2	-	-	-	-	835 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1531	-	720 994
Mov Cap-2 Maneuver	-	-	-	-	720 -
Stage 1	-	-	-	-	954 -
Stage 2	-	-	-	-	834 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	720	-	-	1531	-
HCM Lane V/C Ratio	0.003	-	-	0.001	-
HCM Control Delay (s)	10	-	-	7.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM 6th Signalized Intersection Summary
10: Calistoga Road (SR-29)/SR-29 & Wardlaw Street

Cumulative PM

11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	3	40	40	11	47	16	969	15	9	412	127
Future Volume (veh/h)	130	3	40	40	11	47	16	969	15	9	412	127
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00			1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	141	3	43	43	12	51	17	1053	16	10	448	138
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	291	8	56	168	62	130	566	1253	19	263	936	288
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.68	0.68	0.68	0.68	0.68	0.68
Sat Flow, veh/h	1133	50	353	492	394	821	829	1837	28	528	1372	423
Grp Volume(v), veh/h	187	0	0	106	0	0	17	0	1069	10	0	586
Grp Sat Flow(s), veh/h/ln	1536	0	0	1706	0	0	829	0	1865	528	0	1794
Q Serve(g_s), s	3.2	0.0	0.0	0.0	0.0	0.0	0.6	0.0	24.0	0.8	0.0	8.7
Cycle Q Clear(g_c), s	6.3	0.0	0.0	3.1	0.0	0.0	9.2	0.0	24.0	24.9	0.0	8.7
Prop In Lane	0.75		0.23	0.41			0.48	1.00		0.01	1.00	0.24
Lane Grp Cap(c), veh/h	355	0	0	360	0	0	566	0	1272	263	0	1224
V/C Ratio(X)	0.53	0.00	0.00	0.29	0.00	0.00	0.03	0.00	0.84	0.04	0.00	0.48
Avail Cap(c_a), veh/h	592	0	0	617	0	0	920	0	2069	488	0	1990
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.4	0.0	0.0	21.3	0.0	0.0	6.4	0.0	6.7	15.9	0.0	4.2
Incr Delay (d2), s/veh	1.2	0.0	0.0	0.5	0.0	0.0	0.0	0.0	1.8	0.1	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.3	0.0	0.0	1.2	0.0	0.0	0.1	0.0	5.9	0.1	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.6	0.0	0.0	21.7	0.0	0.0	6.4	0.0	8.4	16.0	0.0	4.5
LnGrp LOS	C	A	A	C	A	A	A	A	A	B	A	A
Approach Vol, veh/h		187			106			1086			596	
Approach Delay, s/veh		23.6			21.7			8.4			4.7	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+R _c), s		42.9		13.4		42.9		13.4				
Change Period (Y+R _c), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		62.5		18.5		62.5		18.5				
Max Q Clear Time (g_c+l1), s		26.0		8.3		26.9		5.1				
Green Ext Time (p_c), s		12.4		0.7		4.8		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			9.4									
HCM 6th LOS			A									

Intersection

Int Delay, s/veh 0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	1	6	3	0	4	6	969	15	10	520	7
Future Vol, veh/h	7	1	6	3	0	4	6	969	15	10	520	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	1	7	3	0	4	7	1053	16	11	565	8

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1668	1674	569	1670	1670	1061	573	0	0	1069	0	0
Stage 1	591	591	-	1075	1075	-	-	-	-	-	-	-
Stage 2	1077	1083	-	595	595	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	77	95	522	76	96	272	1000	-	-	652	-	-
Stage 1	493	494	-	266	296	-	-	-	-	-	-	-
Stage 2	265	293	-	491	492	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	73	91	522	72	92	272	1000	-	-	652	-	-
Mov Cap-2 Maneuver	73	91	-	72	92	-	-	-	-	-	-	-
Stage 1	485	482	-	261	291	-	-	-	-	-	-	-
Stage 2	256	288	-	472	480	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	40	35.9			0.1			0.2		
HCM LOS	E	E								
<hr/>										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	1000	-	-	118	124	652	-	-		
HCM Lane V/C Ratio	0.007	-	-	0.129	0.061	0.017	-	-		
HCM Control Delay (s)	8.6	0	-	40	35.9	10.6	0	-		
HCM Lane LOS	A	A	-	E	E	B	A	-		
HCM 95th %tile Q(veh)	0	-	-	0.4	0.2	0.1	-	-		

HCM 6th Signalized Intersection Summary
12: Calistoga Road (SR-29) & Highway 175/Main Street

Cumulative PM

11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	216	13	78	26	26	13	62	752	9	2	398	142
Future Volume (veh/h)	216	13	78	26	26	13	62	752	9	2	398	142
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	235	14	85	28	28	14	67	817	10	2	433	154
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	376	19	101	223	211	88	112	970	12	59	771	273
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.59	0.59	0.59	0.59	0.59	0.59
Sat Flow, veh/h	1029	69	375	527	785	328	85	1657	20	1	1317	467
Grp Volume(v), veh/h	334	0	0	70	0	0	894	0	0	589	0	0
Grp Sat Flow(s), veh/h/ln	1473	0	0	1640	0	0	1762	0	0	1785	0	0
Q Serve(g_s), s	11.3	0.0	0.0	0.0	0.0	0.0	13.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	13.1	0.0	0.0	1.8	0.0	0.0	25.7	0.0	0.0	12.6	0.0	0.0
Prop In Lane	0.70			0.25	0.40		0.20	0.07		0.01	0.00	0.26
Lane Grp Cap(c), veh/h	495	0	0	522	0	0	1095	0	0	1104	0	0
V/C Ratio(X)	0.67	0.00	0.00	0.13	0.00	0.00	0.82	0.00	0.00	0.53	0.00	0.00
Avail Cap(c_a), veh/h	702	0	0	745	0	0	1629	0	0	1660	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.1	0.0	0.0	17.2	0.0	0.0	10.4	0.0	0.0	7.9	0.0	0.0
Incr Delay (d2), s/veh	1.6	0.0	0.0	0.1	0.0	0.0	2.1	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	4.4	0.0	0.0	0.7	0.0	0.0	7.9	0.0	0.0	3.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.7	0.0	0.0	17.3	0.0	0.0	12.5	0.0	0.0	8.3	0.0	0.0
LnGrp LOS	C	A	A	B	A	A	B	A	A	A	A	A
Approach Vol, veh/h	334				70			894			589	
Approach Delay, s/veh	22.7				17.3			12.5			8.3	
Approach LOS	C				B			B			A	
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+R _c), s	40.7			21.1			40.7			21.1		
Change Period (Y+R _c), s	4.5			4.5			4.5			4.5		
Max Green Setting (Gmax), s	55.5			25.5			55.5			25.5		
Max Q Clear Time (g_c+l1), s	27.7			15.1			14.6			3.8		
Green Ext Time (p_c), s	8.5			1.5			4.7			0.3		
Intersection Summary												
HCM 6th Ctrl Delay				13.2								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	+	+	+	+	+	+	+	+	+	+	+	+
Traffic Vol, veh/h	7	4	21	7	8	30	25	829	12	22	384	67
Future Vol, veh/h	7	4	21	7	8	30	25	829	12	22	384	67
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	4	23	8	9	33	27	901	13	24	417	73
Major/Minor	Minor2	Minor2	Minor1	Minor1	Major1	Major1	Major2	Major2	Major2	Major2	Major2	Major2
Conflicting Flow All	1485	1470	454	1477	1500	908	490	0	0	914	0	0
Stage 1	502	502	-	962	962	-	-	-	-	-	-	-
Stage 2	983	968	-	515	538	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	103	127	606	104	122	334	1073	-	-	746	-	-
Stage 1	552	542	-	308	334	-	-	-	-	-	-	-
Stage 2	299	332	-	543	522	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	81	115	606	90	111	334	1073	-	-	746	-	-
Mov Cap-2 Maneuver	81	115	-	90	111	-	-	-	-	-	-	-
Stage 1	524	518	-	292	317	-	-	-	-	-	-	-
Stage 2	249	315	-	495	499	-	-	-	-	-	-	-
Approach	EB	EB	WB	WB	NB	NB	SB	SB	SB	SB	SB	SB
HCM Control Delay, s	26.1		30.8		0.2		0.5					
HCM LOS	D		D									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1073	-	-	205	188	746	-	-				
HCM Lane V/C Ratio	0.025	-	-	0.17	0.26	0.032	-	-				
HCM Control Delay (s)	8.4	0	-	26.1	30.8	10	0	-				
HCM Lane LOS	A	A	-	D	D	A	A	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.6	1	0.1	-	-				

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	+	+	+	+	+	+	+	+	+	+	+	+
Traffic Vol, veh/h	1	0	1	2	1	10	3	922	8	10	387	6
Future Vol, veh/h	1	0	1	2	1	10	3	922	8	10	387	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	1	2	1	11	3	1002	9	11	421	7
Major/Minor	Minor2	Minor1	Minor1	Major1	Major1	Major1	Major2	Major2	Major2	Major2	Major2	Major2
Conflicting Flow All	1466	1464	425	1460	1463	1007	428	0	0	1011	0	0
Stage 1	447	447	-	1013	1013	-	-	-	-	-	-	-
Stage 2	1019	1017	-	447	450	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	106	128	629	107	129	292	1131	-	-	686	-	-
Stage 1	591	573	-	288	316	-	-	-	-	-	-	-
Stage 2	286	315	-	591	572	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	99	125	629	105	126	292	1131	-	-	686	-	-
Mov Cap-2 Maneuver	99	125	-	105	126	-	-	-	-	-	-	-
Stage 1	587	561	-	286	314	-	-	-	-	-	-	-
Stage 2	273	313	-	578	560	-	-	-	-	-	-	-
Approach	EB	WB	WB	NB	NB	NB	SB	SB	SB	SB	SB	SB
HCM Control Delay, s	26.3		23.2			0			0.3			
HCM LOS	D		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1131	-	-	171	212	686	-	-				
HCM Lane V/C Ratio	0.003	-	-	0.013	0.067	0.016	-	-				
HCM Control Delay (s)	8.2	0	-	26.3	23.2	10.3	0	-				
HCM Lane LOS	A	A	-	D	C	B	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-				

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1	2	4	0	10	9	917	8	0	368	3
Future Vol, veh/h	0	1	2	4	0	10	9	917	8	0	368	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	2	4	0	11	10	997	9	0	400	3

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1429	1428	402	1425	1425	1002	403	0	0	1006	0	0
Stage 1	402	402	-	1022	1022	-	-	-	-	-	-	-
Stage 2	1027	1026	-	403	403	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	112	135	648	113	136	294	1156	-	-	689	-	-
Stage 1	625	600	-	285	313	-	-	-	-	-	-	-
Stage 2	283	312	-	624	600	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	106	132	648	110	133	294	1156	-	-	689	-	-
Mov Cap-2 Maneuver	106	132	-	110	133	-	-	-	-	-	-	-
Stage 1	613	600	-	279	307	-	-	-	-	-	-	-
Stage 2	267	306	-	621	600	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	18	24.6			0.1			0		
HCM LOS	C	C								
<hr/>										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	1156	-	-	281	199	689	-	-		
HCM Lane V/C Ratio	0.008	-	-	0.012	0.076	-	-	-		
HCM Control Delay (s)	8.1	0	-	18	24.6	0	-	-		
HCM Lane LOS	A	A	-	C	C	A	-	-		
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-		

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		A	B		
Traffic Vol, veh/h	7	4	3	901	371	12
Future Vol, veh/h	7	4	3	901	371	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	4	3	979	403	13
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1395	410	416	0	-	0
Stage 1	410	-	-	-	-	-
Stage 2	985	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	156	642	1143	-	-	-
Stage 1	670	-	-	-	-	-
Stage 2	362	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	155	642	1143	-	-	-
Mov Cap-2 Maneuver	155	-	-	-	-	-
Stage 1	666	-	-	-	-	-
Stage 2	362	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	22.8	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1143	-	214	-	-	
HCM Lane V/C Ratio	0.003	-	0.056	-	-	
HCM Control Delay (s)	8.2	0	22.8	-	-	
HCM Lane LOS	A	A	C	-	-	
HCM 95th %tile Q(veh)	0	-	0.2	-	-	

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	8	3	39	926	340	12
Future Vol, veh/h	8	3	39	926	340	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	275	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	3	42	1007	370	13

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1468	377	383	0	-	0
Stage 1	377	-	-	-	-	-
Stage 2	1091	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	141	670	1175	-	-	-
Stage 1	694	-	-	-	-	-
Stage 2	322	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	136	670	1175	-	-	-
Mov Cap-2 Maneuver	136	-	-	-	-	-
Stage 1	669	-	-	-	-	-
Stage 2	322	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	27.1	0.3	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1175	-	136	670	-	-
HCM Lane V/C Ratio	0.036	-	0.064	0.005	-	-
HCM Control Delay (s)	8.2	-	33.3	10.4	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	0	-	-

Intersection

Int Delay, s/veh 1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	287	9	22	239	4	20	1	16	2	0	1
Future Vol, veh/h	1	287	9	22	239	4	20	1	16	2	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	312	10	24	260	4	22	1	17	2	0	1

Major/Minor	Major1	Major2		Minor1		Minor2						
Conflicting Flow All	264	0	0	322	0	0	630	631	317	638	634	262
Stage 1	-	-	-	-	-	-	319	319	-	310	310	-
Stage 2	-	-	-	-	-	-	311	312	-	328	324	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1300	-	-	1238	-	-	394	398	724	389	397	777
Stage 1	-	-	-	-	-	-	693	653	-	700	659	-
Stage 2	-	-	-	-	-	-	699	658	-	685	650	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1300	-	-	1238	-	-	386	388	724	372	387	777
Mov Cap-2 Maneuver	-	-	-	-	-	-	386	388	-	372	387	-
Stage 1	-	-	-	-	-	-	692	652	-	699	644	-
Stage 2	-	-	-	-	-	-	682	643	-	667	649	-

Approach	EB	WB		NB		SB		
HCM Control Delay, s	0	0.7		13.1		13.1		
HCM LOS				B		B		
<hr/>								
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	484	1300	-	-	1238	-	-	450
HCM Lane V/C Ratio	0.083	0.001	-	-	0.019	-	-	0.007
HCM Control Delay (s)	13.1	7.8	0	-	8	0	-	13.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0

Intersection

Int Delay, s/veh 4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
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Lane Configurations						
Traffic Vol, veh/h	40	41	12	67	88	3
Future Vol, veh/h	40	41	12	67	88	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	45	13	73	96	3

Major/Minor	Major1	Major2	Minor1
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Conflicting Flow All	0	0	88	0	165	66
Stage 1	-	-	-	-	66	-
Stage 2	-	-	-	-	99	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1508	-	826	998
Stage 1	-	-	-	-	957	-
Stage 2	-	-	-	-	925	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1508	-	819	998
Mov Cap-2 Maneuver	-	-	-	-	819	-
Stage 1	-	-	-	-	957	-
Stage 2	-	-	-	-	917	-

Approach	EB	WB	NB
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HCM Control Delay, s	0	1.1	10
HCM LOS		B	

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
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Capacity (veh/h)	824	-	-	1508	-
HCM Lane V/C Ratio	0.12	-	-	0.009	-
HCM Control Delay (s)	10	-	-	7.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

HCM 6th TWSC
20: Lake County Highway (SR-29) & Tubbs Lane

Cumulative PM
11/27/2019

Intersection

Int Delay, s/veh 247.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	657	37	92	280	75	205
Future Vol, veh/h	657	37	92	280	75	205
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	714	40	100	304	82	223

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	698	194	305	0	-	0
Stage 1	194	-	-	-	-	-
Stage 2	504	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 407	847	1256	-	-	-
Stage 1	839	-	-	-	-	-
Stage 2	~ 607	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 368	847	1256	-	-	-
Mov Cap-2 Maneuver	~ 368	-	-	-	-	-
Stage 1	758	-	-	-	-	-
Stage 2	~ 607	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, \$	478.5	2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1256	-	379	-	-
HCM Lane V/C Ratio	0.08	-	1.99	-	-
HCM Control Delay (s)	8.1	\$ 478.5	-	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.3	-	52.3	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 65.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
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Lane Configurations						
Traffic Vol, veh/h	345	52	67	508	140	132
Future Vol, veh/h	345	52	67	508	140	132
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	375	57	73	552	152	143

Major/Minor	Minor1	Major1	Major2
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Conflicting Flow All	796	349	0	0	625	0
Stage 1	349	-	-	-	-	-
Stage 2	447	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	~ 356	694	-	-	956	-
Stage 1	714	-	-	-	-	-
Stage 2	644	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 299	694	-	-	956	-
Mov Cap-2 Maneuver	~ 299	-	-	-	-	-
Stage 1	714	-	-	-	-	-
Stage 2	542	-	-	-	-	-

Approach	WB	NB	SB
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HCM Control Delay, s	203.2	0	4.9
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HCM LOS	F
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Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	323	956	-
HCM Lane V/C Ratio	-	-	1.336	0.159	-
HCM Control Delay (s)	-	-	203.2	9.5	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	21.2	0.6	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th Signalized Intersection Summary
1: SR-29 & Main Street & SR-53

Cumulative +Project AM
11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑		↑	↑	↑	↑↑	↑↑		↑	↑↑	↑
Traffic Volume (veh/h)	355	45	122	42	42	66	200	472	68	73	349	327
Future Volume (veh/h)	355	45	122	42	42	66	200	472	68	73	349	327
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	386	49	133	46	46	72	217	513	74	79	379	355
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	552	88	240	80	157	230	278	1223	176	109	1058	472
Arrive On Green	0.16	0.20	0.20	0.04	0.08	0.08	0.16	0.39	0.39	0.06	0.30	0.30
Sat Flow, veh/h	3456	445	1208	1781	1870	1585	1781	3118	448	1781	3554	1585
Grp Volume(v), veh/h	386	0	182	46	46	72	217	291	296	79	379	355
Grp Sat Flow(s), veh/h/ln	1728	0	1653	1781	1870	1585	1781	1777	1790	1781	1777	1585
Q Serve(g_s), s	6.3	0.0	5.9	1.5	1.4	2.4	7.0	7.1	7.1	2.6	5.0	12.0
Cycle Q Clear(g_c), s	6.3	0.0	5.9	1.5	1.4	2.4	7.0	7.1	7.1	2.6	5.0	12.0
Prop In Lane	1.00		0.73	1.00		1.00	1.00		0.25	1.00		1.00
Lane Grp Cap(c), veh/h	552	0	328	80	157	230	278	697	702	109	1058	472
V/C Ratio(X)	0.70	0.00	0.55	0.58	0.29	0.31	0.78	0.42	0.42	0.72	0.36	0.75
Avail Cap(c_a), veh/h	1367	0	904	285	583	591	825	1391	1401	405	1944	867
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	0.0	21.4	27.8	25.6	22.7	24.1	13.1	13.1	27.4	16.4	18.9
Incr Delay (d2), s/veh	1.6	0.0	1.5	6.4	1.0	0.8	4.8	0.4	0.4	8.7	0.2	2.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.5	0.0	2.2	0.8	0.6	0.9	3.1	2.6	2.6	1.3	1.9	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.2	0.0	22.9	34.2	26.6	23.5	28.9	13.5	13.5	36.1	16.6	21.3
LnGrp LOS	C	A	C	C	C	C	C	B	B	D	B	C
Approach Vol, veh/h						164			804			813
Approach Delay, s/veh						27.4			17.7			20.6
Approach LOS						C			B			C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+R _c), s	8.1	27.8	7.2	16.3	13.8	22.2	14.0	9.5				
Change Period (Y+R _c), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	13.5	46.5	9.5	32.5	27.5	32.5	23.5	18.5				
Max Q Clear Time (g_c+l1), s	4.6	9.1	3.5	7.9	9.0	14.0	8.3	4.4				
Green Ext Time (p_c), s	0.1	4.0	0.0	1.1	0.6	3.6	1.2	0.3				
Intersection Summary												
HCM 6th Ctrl Delay				21.0								
HCM 6th LOS				C								

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	0	22	0	50	0	649	18	49	518	2
Future Vol, veh/h	1	0	0	22	0	50	0	649	18	49	518	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	375	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	24	0	54	0	705	20	53	563	2
Major/Minor												
Minor2		Minor1			Major1			Major2				
Conflicting Flow All	1412	1395	564	1385	1386	715	565	0	0	725	0	0
Stage 1	670	670	-	715	715	-	-	-	-	-	-	-
Stage 2	742	725	-	670	671	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	116	141	525	121	143	431	1007	-	-	878	-	-
Stage 1	446	455	-	422	434	-	-	-	-	-	-	-
Stage 2	408	430	-	446	455	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	97	133	525	115	134	431	1007	-	-	878	-	-
Mov Cap-2 Maneuver	97	133	-	115	134	-	-	-	-	-	-	-
Stage 1	446	428	-	422	434	-	-	-	-	-	-	-
Stage 2	357	430	-	419	428	-	-	-	-	-	-	-
Approach												
EB			WB			NB			SB			
HCM Control Delay, s	42.5		23.7			0			0.8			
HCM LOS	E		C									
Minor Lane/Major Mvmt		NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	1007		-	-	97	115	431	878	-	-		
HCM Lane V/C Ratio	-		-	-	0.011	0.208	0.126	0.061	-	-		
HCM Control Delay (s)	0		-	-	42.5	44.3	14.6	9.4	-	-		
HCM Lane LOS	A		-	-	E	E	B	A	-	-		
HCM 95th %tile Q(veh)	0		-	-	0	0.7	0.4	0.2	-	-		

Intersection

Int Delay, s/veh 13.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	B	T	T	U	U
Traffic Vol, veh/h	129	72	558	67	25	519
Future Vol, veh/h	129	72	558	67	25	519
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	140	78	607	73	27	564

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1262	644	0	0	680
Stage 1	644	-	-	-	-
Stage 2	618	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	188	473	-	-	912
Stage 1	523	-	-	-	-
Stage 2	538	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	182	473	-	-	912
Mov Cap-2 Maneuver	182	-	-	-	-
Stage 1	523	-	-	-	-
Stage 2	522	-	-	-	-

Approach WB NB SB

HCM Control Delay, s 88.4 0 0.4

HCM LOS F

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	233	912	-
HCM Lane V/C Ratio	-	-	0.938	0.03	-
HCM Control Delay (s)	-	-	88.4	9.1	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	8.2	0.1	-

Intersection

Int Delay, s/veh 20.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	1	122	0	150	1	594	43	47	626	1
Future Vol, veh/h	3	0	1	122	0	150	1	594	43	47	626	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	50	-	-	50	275	-	275	375	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	1	133	0	163	1	646	47	51	680	1

Major/Minor	Minor2	Minor1			Major1		Major2		
Conflicting Flow All	1535	1477	680	1431	1431	646	681	0	0
Stage 1	782	782	-	648	648	-	-	-	-
Stage 2	753	695	-	783	783	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	4.12
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	2.218
Pot Cap-1 Maneuver	95	126	451	~112	134	472	912	-	902
Stage 1	387	405	-	459	466	-	-	-	-
Stage 2	402	444	-	387	404	-	-	-	-
Platoon blocked, %							-	-	-
Mov Cap-1 Maneuver	59	119	451	~107	126	472	912	-	902
Mov Cap-2 Maneuver	59	119	-	~107	126	-	-	-	-
Stage 1	387	382	-	459	466	-	-	-	-
Stage 2	263	444	-	364	381	-	-	-	-

Approach	EB	WB			NB		SB			
HCM Control Delay, s	55.5	116.7			0		0.6			
HCM LOS	F	F								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	912	-	-	59	451	107	472	902	-	-
HCM Lane V/C Ratio	0.001	-	-	0.055	0.002	1.239	0.345	0.057	-	-
HCM Control Delay (s)	9	-	-	69.6	13	239.7	16.6	9.2	-	-
HCM Lane LOS	A	-	-	F	B	F	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	8.8	1.5	0.2	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection			
Intersection Delay, s/veh	24.5		
Intersection LOS	C		
Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	526	753	848
Demand Flow Rate, veh/h	537	768	865
Vehicles Circulating, veh/h	559	107	409
Vehicles Exiting, veh/h	316	1167	686
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	17.9	10.8	40.8
Approach LOS	C	B	E
Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	537	768	865
Cap Entry Lane, veh/h	780	1237	909
Entry HV Adj Factor	0.980	0.981	0.981
Flow Entry, veh/h	526	753	848
Cap Entry, veh/h	764	1213	892
V/C Ratio	0.688	0.621	0.951
Control Delay, s/veh	17.9	10.8	40.8
LOS	C	B	E
95th %tile Queue, veh	6	5	15

Intersection

Int Delay, s/veh 0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	0	1	3	1	4	6	649	3	1	1016	25
Future Vol, veh/h	11	0	1	3	1	4	6	649	3	1	1016	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	50	-	-	-	125	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	0	1	3	1	4	7	705	3	1	1104	27

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1843	1842	1118	1841	1854	707	1131	0	0	708	0	0
Stage 1	1120	1120	-	721	721	-	-	-	-	-	-	-
Stage 2	723	722	-	1120	1133	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	58	75	252	58	74	435	618	-	-	891	-	-
Stage 1	251	282	-	419	432	-	-	-	-	-	-	-
Stage 2	417	431	-	251	278	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	56	74	252	57	73	435	618	-	-	891	-	-
Mov Cap-2 Maneuver	56	74	-	57	73	-	-	-	-	-	-	-
Stage 1	248	282	-	414	427	-	-	-	-	-	-	-
Stage 2	407	426	-	250	278	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB				
HCM Control Delay, s	80.4	42			0.1			0				
HCM LOS	F	E										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	618	-	-	56	252	106	891	-	-			
HCM Lane V/C Ratio	0.011	-	-	0.214	0.004	0.082	0.001	-	-			
HCM Control Delay (s)	10.9	-	-	86	19.3	42	9	-	-			
HCM Lane LOS	B	-	-	F	C	E	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	0.7	0	0.3	0	-	-			

Intersection						
Int Delay, s/veh	6.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	60	86	399	70	140	901
Future Vol, veh/h	60	86	399	70	140	901
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	75	-	-	325	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	93	434	76	152	979
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1755	472	0	0	510	0
Stage 1	472	-	-	-	-	-
Stage 2	1283	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	94	592	-	-	1055	-
Stage 1	628	-	-	-	-	-
Stage 2	260	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	80	592	-	-	1055	-
Mov Cap-2 Maneuver	80	-	-	-	-	-
Stage 1	628	-	-	-	-	-
Stage 2	223	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	66.2	0	1.2			
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	80	592	1055	-
HCM Lane V/C Ratio	-	-	0.815	0.158	0.144	-
HCM Control Delay (s)	-	-	143.5	12.2	9	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	4.1	0.6	0.5	-

Intersection

Int Delay, s/veh 0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	235	7	0	169	6	2
Future Vol, veh/h	235	7	0	169	6	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	255	8	0	184	7	2

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	263	0	443 259
Stage 1	-	-	-	-	259 -
Stage 2	-	-	-	-	184 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1301	-	572 780
Stage 1	-	-	-	-	784 -
Stage 2	-	-	-	-	848 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1301	-	572 780
Mov Cap-2 Maneuver	-	-	-	-	572 -
Stage 1	-	-	-	-	784 -
Stage 2	-	-	-	-	848 -

Approach	EB	WB	NB	
HCM Control Delay, s	0	0	11	
HCM LOS			B	

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	613	-	-	1301	-	
HCM Lane V/C Ratio	0.014	-	-	-	-	
HCM Control Delay (s)	11	-	-	0	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↔	↔		
Traffic Vol, veh/h	216	2	2	146	6	0
Future Vol, veh/h	216	2	2	146	6	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	235	2	2	159	7	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	237	0	399	236
Stage 1	-	-	-	-	236	-
Stage 2	-	-	-	-	163	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1330	-	607	803
Stage 1	-	-	-	-	803	-
Stage 2	-	-	-	-	866	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1330	-	606	803
Mov Cap-2 Maneuver	-	-	-	-	606	-
Stage 1	-	-	-	-	803	-
Stage 2	-	-	-	-	864	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0.1	11			
HCM LOS			B			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	606	-	-	1330	-	
HCM Lane V/C Ratio	0.011	-	-	0.002	-	
HCM Control Delay (s)	11	-	-	7.7	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

HCM 6th Signalized Intersection Summary
10: Calistoga Road (SR-29)/SR-29 & Wardlaw Street

Cumulative +Project AM

11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	167	7	45	7	38	20	11	370	1	12	700	381
Future Volume (veh/h)	167	7	45	7	38	20	11	370	1	12	700	381
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	182	8	49	8	41	22	12	402	1	13	761	414
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	284	9	56	63	213	102	142	1317	3	701	805	438
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.71	0.71	0.71	0.71	0.71	0.71
Sat Flow, veh/h	1120	49	302	78	1151	552	477	1865	5	982	1139	620
Grp Volume(v), veh/h	239	0	0	71	0	0	12	0	403	13	0	1175
Grp Sat Flow(s), veh/h/ln	1471	0	0	1781	0	0	477	0	1870	982	0	1759
Q Serve(g_s), s	10.2	0.0	0.0	0.0	0.0	0.0	1.9	0.0	6.7	0.4	0.0	49.1
Cycle Q Clear(g_c), s	13.0	0.0	0.0	2.8	0.0	0.0	51.0	0.0	6.7	7.1	0.0	49.1
Prop In Lane	0.76			0.21	0.11		0.31	1.00		0.00	1.00	0.35
Lane Grp Cap(c), veh/h	349	0	0	378	0	0	142	0	1320	701	0	1242
V/C Ratio(X)	0.68	0.00	0.00	0.19	0.00	0.00	0.08	0.00	0.31	0.02	0.00	0.95
Avail Cap(c_a), veh/h	401	0	0	442	0	0	164	0	1407	746	0	1323
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.6	0.0	0.0	28.7	0.0	0.0	33.4	0.0	4.6	5.9	0.0	10.8
Incr Delay (d2), s/veh	4.0	0.0	0.0	0.2	0.0	0.0	0.3	0.0	0.1	0.0	0.0	13.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	4.9	0.0	0.0	1.2	0.0	0.0	0.2	0.0	2.0	0.1	0.0	18.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	36.5	0.0	0.0	28.9	0.0	0.0	33.6	0.0	4.7	5.9	0.0	24.2
LnGrp LOS	D	A	A	C	A	A	C	A	A	A	A	C
Approach Vol, veh/h	239				71			415			1188	
Approach Delay, s/veh	36.5				28.9			5.5			24.0	
Approach LOS	D				C			A			C	
Timer - Assigned Phs	2			4			6		8			
Phs Duration (G+Y+R _c), s	63.2			19.9			63.2		19.9			
Change Period (Y+R _c), s	4.5			4.5			4.5		4.5			
Max Green Setting (Gmax), s	62.5			18.5			62.5		18.5			
Max Q Clear Time (g_c+l1), s	53.0			15.0			51.1		4.8			
Green Ext Time (p_c), s	1.8			0.4			7.6		0.2			
Intersection Summary												
HCM 6th Ctrl Delay				21.8								
HCM 6th LOS				C								

Intersection

Int Delay, s/veh 1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	2	16	3	3	4	13	348	10	12	832	4
Future Vol, veh/h	25	2	16	3	3	4	13	348	10	12	832	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	2	17	3	3	4	14	378	11	13	904	4

Major/Minor	Minor2	Minor1			Major1			Major2			
Conflicting Flow All	1347	1349	906	1354	1346	384	908	0	0	389	0
Stage 1	932	932	-	412	412	-	-	-	-	-	-
Stage 2	415	417	-	942	934	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-
Pot Cap-1 Maneuver	128	151	334	127	151	664	750	-	-	1170	-
Stage 1	320	345	-	617	594	-	-	-	-	-	-
Stage 2	615	591	-	316	345	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-
Mov Cap-1 Maneuver	121	144	334	115	144	664	750	-	-	1170	-
Mov Cap-2 Maneuver	121	144	-	115	144	-	-	-	-	-	-
Stage 1	312	337	-	602	580	-	-	-	-	-	-
Stage 2	593	577	-	291	337	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	36.5	25.2			0.3			0.1		
HCM LOS	E	D								
<hr/>										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	750	-	-	160	189	1170	-	-		
HCM Lane V/C Ratio	0.019	-	-	0.292	0.058	0.011	-	-		
HCM Control Delay (s)	9.9	0	-	36.5	25.2	8.1	0	-		
HCM Lane LOS	A	A	-	E	D	A	A	-		
HCM 95th %tile Q(veh)	0.1	-	-	1.1	0.2	0	-	-		

HCM 6th Signalized Intersection Summary
12: Calistoga Road (SR-29) & Highway 175/Main Street

Cumulative +Project AM

11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	25	113	26	16	13	36	262	7	8	623	152
Future Volume (veh/h)	142	25	113	26	16	13	36	262	7	8	623	152
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	154	27	123	28	17	14	39	285	8	9	677	165
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	279	54	155	251	148	92	139	894	24	73	831	201
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.57	0.57	0.57	0.57	0.57	0.57
Sat Flow, veh/h	690	214	614	588	585	365	107	1560	41	5	1449	350
Grp Volume(v), veh/h	304	0	0	59	0	0	332	0	0	851	0	0
Grp Sat Flow(s), veh/h/ln	1518	0	0	1539	0	0	1708	0	0	1804	0	0
Q Serve(g_s), s	8.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.6	0.0	0.0	1.3	0.0	0.0	4.8	0.0	0.0	19.7	0.0	0.0
Prop In Lane	0.51			0.40	0.47		0.24	0.12		0.02	0.01	0.19
Lane Grp Cap(c), veh/h	489	0	0	491	0	0	1057	0	0	1105	0	0
V/C Ratio(X)	0.62	0.00	0.00	0.12	0.00	0.00	0.31	0.00	0.00	0.77	0.00	0.00
Avail Cap(c_a), veh/h	845	0	0	839	0	0	1818	0	0	1997	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.0	0.0	0.0	15.0	0.0	0.0	5.7	0.0	0.0	8.9	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	3.2	0.0	0.0	0.5	0.0	0.0	1.4	0.0	0.0	5.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.3	0.0	0.0	15.1	0.0	0.0	5.9	0.0	0.0	10.1	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	B	A	A
Approach Vol, veh/h	304				59			332			851	
Approach Delay, s/veh	19.3				15.1			5.9			10.1	
Approach LOS	B				B			A			B	
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+R _c), s	34.2			17.6			34.2			17.6		
Change Period (Y+R _c), s	4.5			4.5			4.5			4.5		
Max Green Setting (Gmax), s	55.5			25.5			55.5			25.5		
Max Q Clear Time (g _{c+l1}), s	6.8			11.6			21.7			3.3		
Green Ext Time (p _c), s	2.6			1.6			8.1			0.2		
Intersection Summary												
HCM 6th Ctrl Delay				11.2								
HCM 6th LOS				B								

Intersection

Int Delay, s/veh 1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	17	6	8	22	8	296	12	36	709	46
Future Vol, veh/h	3	1	17	6	8	22	8	296	12	36	709	46
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	18	7	9	24	9	322	13	39	771	50

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1237	1227	796	1231	1246	329	821	0	0	335	0	0
Stage 1	874	874	-	347	347	-	-	-	-	-	-	-
Stage 2	363	353	-	884	899	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	153	178	387	154	174	712	808	-	-	1224	-	-
Stage 1	344	367	-	669	635	-	-	-	-	-	-	-
Stage 2	656	631	-	340	358	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	134	165	387	138	161	712	808	-	-	1224	-	-
Mov Cap-2 Maneuver	134	165	-	138	161	-	-	-	-	-	-	-
Stage 1	339	345	-	660	626	-	-	-	-	-	-	-
Stage 2	616	622	-	304	337	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	18.5	19.3			0.2			0.4		
HCM LOS	C	C								
<hr/>										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	808	-	-	290	290	1224	-	-		
HCM Lane V/C Ratio	0.011	-	-	0.079	0.135	0.032	-	-		
HCM Control Delay (s)	9.5	0	-	18.5	19.3	8	0	-		
HCM Lane LOS	A	A	-	C	C	A	A	-		
HCM 95th %tile Q(veh)	0	-	-	0.3	0.5	0.1	-	-		

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	2	8	4	0	1	1	278	3	9	719	8
Future Vol, veh/h	3	2	8	4	0	1	1	278	3	9	719	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	2	9	4	0	1	1	302	3	10	782	9

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1113	1114	787	1118	1117	304	791	0	0	305	0	0
Stage 1	807	807	-	306	306	-	-	-	-	-	-	-
Stage 2	306	307	-	812	811	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	186	208	392	184	207	736	829	-	-	1256	-	-
Stage 1	375	394	-	704	662	-	-	-	-	-	-	-
Stage 2	704	661	-	373	393	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	184	205	392	176	204	736	829	-	-	1256	-	-
Mov Cap-2 Maneuver	184	205	-	176	204	-	-	-	-	-	-	-
Stage 1	375	388	-	703	661	-	-	-	-	-	-	-
Stage 2	702	660	-	358	387	-	-	-	-	-	-	-

Approach	EB	WB			NB		SB	
HCM Control Delay, s	18.5	22.8			0		0.1	
HCM LOS	C	C						
<hr/>								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	829	-	-	280	208	1256	-	-
HCM Lane V/C Ratio	0.001	-	-	0.05	0.026	0.008	-	-
HCM Control Delay (s)	9.3	0	-	18.5	22.8	7.9	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-	-

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	1	2	0	3	0	286	0	6	722	3
Future Vol, veh/h	2	0	1	2	0	3	0	286	0	6	722	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	1	2	0	3	0	311	0	7	785	3

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1114	1112	787	1112	1113	311	788	0	0	311	0	0
Stage 1	801	801	-	311	311	-	-	-	-	-	-	-
Stage 2	313	311	-	801	802	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	185	209	392	186	208	729	831	-	-	1249	-	-
Stage 1	378	397	-	699	658	-	-	-	-	-	-	-
Stage 2	698	658	-	378	396	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	183	207	392	184	206	729	831	-	-	1249	-	-
Mov Cap-2 Maneuver	183	207	-	184	206	-	-	-	-	-	-	-
Stage 1	378	393	-	699	658	-	-	-	-	-	-	-
Stage 2	695	658	-	373	392	-	-	-	-	-	-	-

Approach	EB	WB			NB		SB	
HCM Control Delay, s	21.4	16			0		0.1	
HCM LOS	C	C						
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Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	831	-	-	223	334	1249	-	-
HCM Lane V/C Ratio	-	-	-	0.015	0.016	0.005	-	-
HCM Control Delay (s)	0	-	-	21.4	16	7.9	0	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		A	B		
Traffic Vol, veh/h	10	6	1	263	724	3
Future Vol, veh/h	10	6	1	263	724	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	7	1	286	787	3

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1077	789	790	0	-	0
Stage 1	789	-	-	-	-	-
Stage 2	288	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	242	391	830	-	-	-
Stage 1	448	-	-	-	-	-
Stage 2	761	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	242	391	830	-	-	-
Mov Cap-2 Maneuver	242	-	-	-	-	-
Stage 1	448	-	-	-	-	-
Stage 2	761	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s	18.6	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	830	-	282	-	-
HCM Lane V/C Ratio	0.001	-	0.062	-	-
HCM Control Delay (s)	9.3	0	18.6	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	8	10	1	254	706	8
Future Vol, veh/h	8	10	1	254	706	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	275	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	11	1	276	767	9

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	1050	772	776	0	-	0
Stage 1	772	-	-	-	-	-
Stage 2	278	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	252	400	840	-	-	-
Stage 1	456	-	-	-	-	-
Stage 2	769	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	252	400	840	-	-	-
Mov Cap-2 Maneuver	252	-	-	-	-	-
Stage 1	456	-	-	-	-	-
Stage 2	769	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	16.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
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Capacity (veh/h)	840	-	252	400	-	-
HCM Lane V/C Ratio	0.001	-	0.035	0.027	-	-
HCM Control Delay (s)	9.3	-	19.8	14.3	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.1	-	-

Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	229	15	3	160	0	10	0	7	1	0	0
Future Vol, veh/h	1	229	15	3	160	0	10	0	7	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	249	16	3	174	0	11	0	8	1	0	0

Major/Minor	Major1	Major2			Minor1			Minor2				
Conflicting Flow All	174	0	0	265	0	0	439	439	257	443	447	174
Stage 1	-	-	-	-	-	-	259	259	-	180	180	-
Stage 2	-	-	-	-	-	-	180	180	-	263	267	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1403	-	-	1299	-	-	528	512	782	525	506	869
Stage 1	-	-	-	-	-	-	746	694	-	822	750	-
Stage 2	-	-	-	-	-	-	822	750	-	742	688	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1403	-	-	1299	-	-	526	510	782	518	504	869
Mov Cap-2 Maneuver	-	-	-	-	-	-	526	510	-	518	504	-
Stage 1	-	-	-	-	-	-	745	693	-	821	748	-
Stage 2	-	-	-	-	-	-	820	748	-	734	687	-

Approach	EB	WB			NB			SB				
HCM Control Delay, s	0	0.1			11.1			12				
HCM LOS					B			B				
<hr/>												
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3	SBLn4	SBLn5
Capacity (veh/h)	608	1403	-	-	1299	-	-	518	-	-	-	-
HCM Lane V/C Ratio	0.03	0.001	-	-	0.003	-	-	0.002	-	-	-	-
HCM Control Delay (s)	11.1	7.6	0	-	7.8	0	-	12	-	-	-	-
HCM Lane LOS	B	A	A	-	A	A	-	B	-	-	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0	-	-	-	-

Intersection

Int Delay, s/veh 1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
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Lane Configurations						
Traffic Vol, veh/h	70	98	15	39	37	2
Future Vol, veh/h	70	98	15	39	37	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	76	107	16	42	40	2

Major/Minor	Major1	Major2	Minor1
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Conflicting Flow All	0	0	183	0	204	130
Stage 1	-	-	-	-	130	-
Stage 2	-	-	-	-	74	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1392	-	784	920
Stage 1	-	-	-	-	896	-
Stage 2	-	-	-	-	949	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1392	-	775	920
Mov Cap-2 Maneuver	-	-	-	-	775	-
Stage 1	-	-	-	-	896	-
Stage 2	-	-	-	-	938	-

Approach	EB	WB	NB
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HCM Control Delay, s	0	2.1	9.9
HCM LOS		A	

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
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Capacity (veh/h)	781	-	-	1392	-
HCM Lane V/C Ratio	0.054	-	-	0.012	-
HCM Control Delay (s)	9.9	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection						
Int Delay, s/veh	3.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		A	B		
Traffic Vol, veh/h	141	29	20	46	232	540
Future Vol, veh/h	141	29	20	46	232	540
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	153	32	22	50	252	587
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	640	546	839	0	-	0
Stage 1	546	-	-	-	-	-
Stage 2	94	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	440	538	796	-	-	-
Stage 1	580	-	-	-	-	-
Stage 2	930	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	428	538	796	-	-	-
Mov Cap-2 Maneuver	428	-	-	-	-	-
Stage 1	564	-	-	-	-	-
Stage 2	930	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	18.8	2.9	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	796	-	443	-	-	
HCM Lane V/C Ratio	0.027	-	0.417	-	-	
HCM Control Delay (s)	9.7	0	18.8	-	-	
HCM Lane LOS	A	A	C	-	-	
HCM 95th %tile Q(veh)	0.1	-	2	-	-	

Intersection

Int Delay, s/veh 57.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
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Lane Configurations						
Traffic Vol, veh/h	603	49	85	120	34	103
Future Vol, veh/h	603	49	85	120	34	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	655	53	92	130	37	112

Major/Minor	Minor1	Major1	Major2
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Conflicting Flow All	343	157	0	0	222	0
Stage 1	157	-	-	-	-	-
Stage 2	186	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	~ 653	889	-	-	1347	-
Stage 1	871	-	-	-	-	-
Stage 2	846	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 635	889	-	-	1347	-
Mov Cap-2 Maneuver	~ 635	-	-	-	-	-
Stage 1	871	-	-	-	-	-
Stage 2	823	-	-	-	-	-

Approach	WB	NB	SB
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HCM Control Delay, s	87.4	0	1.9
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HCM LOS	F
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Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	649	1347	-
HCM Lane V/C Ratio	-	-	1.092	0.027	-
HCM Control Delay (s)	-	-	87.4	7.7	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	20.5	0.1	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	198	135	1	1	10
Future Vol, veh/h	10	198	135	1	1	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	215	147	1	1	11
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	148	0	-	0	385	148
Stage 1	-	-	-	-	148	-
Stage 2	-	-	-	-	237	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1434	-	-	-	618	899
Stage 1	-	-	-	-	880	-
Stage 2	-	-	-	-	802	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1434	-	-	-	612	899
Mov Cap-2 Maneuver	-	-	-	-	612	-
Stage 1	-	-	-	-	872	-
Stage 2	-	-	-	-	802	-
Approach	EB	WB	SB			
HCM Control Delay, s	0.4	0	9.2			
HCM LOS			A			
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1434	-	-	-	862	
HCM Lane V/C Ratio	0.008	-	-	-	0.014	
HCM Control Delay (s)	7.5	0	-	-	9.2	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Intersection

Int Delay, s/veh 1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	174	5	1	111	2	5	0	1	2	0	20
Future Vol, veh/h	20	174	5	1	111	2	5	0	1	2	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	189	5	1	121	2	5	0	1	2	0	22

Major/Minor	Major1	Major2		Minor1		Minor2						
Conflicting Flow All	123	0	0	194	0	0	371	361	192	360	362	122
Stage 1	-	-	-	-	-	-	236	236	-	124	124	-
Stage 2	-	-	-	-	-	-	135	125	-	236	238	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1464	-	-	1379	-	-	586	566	850	596	565	929
Stage 1	-	-	-	-	-	-	767	710	-	880	793	-
Stage 2	-	-	-	-	-	-	868	792	-	767	708	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1464	-	-	1379	-	-	564	556	850	587	555	929
Mov Cap-2 Maneuver	-	-	-	-	-	-	564	556	-	587	555	-
Stage 1	-	-	-	-	-	-	754	698	-	865	792	-
Stage 2	-	-	-	-	-	-	847	791	-	753	696	-

Approach	EB	WB		NB		SB		
HCM Control Delay, s	0.8	0.1		11.1		9.2		
HCM LOS				B		A		
<hr/>								
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	598	1464	-	-	1379	-	-	882
HCM Lane V/C Ratio	0.011	0.015	-	-	0.001	-	-	0.027
HCM Control Delay (s)	11.1	7.5	0	-	7.6	0	-	9.2
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Intersection						
Int Delay, s/veh	3.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	63	114	51	8	8	63
Future Vol, veh/h	63	114	51	8	8	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	124	55	9	9	68
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	64	0	-	0	320	60
Stage 1	-	-	-	-	60	-
Stage 2	-	-	-	-	260	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1538	-	-	-	673	1005
Stage 1	-	-	-	-	963	-
Stage 2	-	-	-	-	783	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1538	-	-	-	641	1005
Mov Cap-2 Maneuver	-	-	-	-	641	-
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	783	-
Approach	EB	WB	SB			
HCM Control Delay, s	2.7	0	9.1			
HCM LOS			A			
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1538	-	-	-	945	
HCM Lane V/C Ratio	0.045	-	-	-	0.082	
HCM Control Delay (s)	7.5	0	-	-	9.1	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3	

HCM 6th Signalized Intersection Summary
1: SR-29 & Main Street & SR-53

Cumulative +Project PM
11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑		↑	↑	↑	↑↑	↑↑		↑	↑↑	↑
Traffic Volume (veh/h)	348	47	196	83	49	102	196	593	77	107	574	413
Future Volume (veh/h)	348	47	196	83	49	102	196	593	77	107	574	413
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	378	51	213	90	53	111	213	645	84	116	624	449
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	502	62	261	117	222	322	262	1313	171	150	1253	559
Arrive On Green	0.15	0.20	0.20	0.07	0.12	0.12	0.15	0.42	0.42	0.08	0.35	0.35
Sat Flow, veh/h	3456	316	1318	1781	1870	1585	1781	3162	411	1781	3554	1585
Grp Volume(v), veh/h	378	0	264	90	53	111	213	362	367	116	624	449
Grp Sat Flow(s), veh/h/ln	1728	0	1633	1781	1870	1585	1781	1777	1796	1781	1777	1585
Q Serve(g_s), s	8.0	0.0	11.8	3.8	2.0	4.6	8.8	11.4	11.4	4.9	10.5	19.5
Cycle Q Clear(g_c), s	8.0	0.0	11.8	3.8	2.0	4.6	8.8	11.4	11.4	4.9	10.5	19.5
Prop In Lane	1.00			1.00		1.00	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	502	0	323	117	222	322	262	738	746	150	1253	559
V/C Ratio(X)	0.75	0.00	0.82	0.77	0.24	0.35	0.81	0.49	0.49	0.77	0.50	0.80
Avail Cap(c_a), veh/h	977	0	569	316	455	519	597	1063	1074	386	1705	761
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.2	0.0	29.2	35.0	30.4	26.0	31.4	16.3	16.3	34.1	19.3	22.2
Incr Delay (d2), s/veh	2.3	0.0	5.1	10.0	0.6	0.6	6.0	0.5	0.5	8.1	0.3	4.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	3.4	0.0	4.9	1.9	0.9	1.7	4.1	4.4	4.5	2.4	4.1	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	33.5	0.0	34.2	45.0	31.0	26.6	37.4	16.8	16.8	42.2	19.6	26.7
LnGrp LOS	C	A	C	D	C	C	D	B	B	D	B	C
Approach Vol, veh/h						254			942			1189
Approach Delay, s/veh						34.0			21.5			24.5
Approach LOS						C			C			C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+R _c), s	10.9	36.1	9.5	19.6	15.7	31.3	15.5	13.5				
Change Period (Y+R _c), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	16.5	45.5	13.5	26.5	25.5	36.5	21.5	18.5				
Max Q Clear Time (g _{c+l1}), s	6.9	13.4	5.8	13.8	10.8	21.5	10.0	6.6				
Green Ext Time (p _c), s	0.2	5.2	0.1	1.3	0.5	5.4	1.1	0.4				
Intersection Summary												
HCM 6th Ctrl Delay				26.4								
HCM 6th LOS				C								

Intersection

Int Delay, s/veh 3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	0	21	0	54	0	843	26	88	805	2
Future Vol, veh/h	1	0	0	21	0	54	0	843	26	88	805	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	50	-	-	-	375	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	23	0	59	0	916	28	96	875	2

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	2028	2012	876	1998	1999	930	877	0	0	944	0	0
Stage 1	1068	1068	-	930	930	-	-	-	-	-	-	-
Stage 2	960	944	-	1068	1069	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	43	59	348	45	60	324	770	-	-	727	-	-
Stage 1	268	298	-	321	346	-	-	-	-	-	-	-
Stage 2	308	341	-	268	298	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	32	51	348	40	52	324	770	-	-	727	-	-
Mov Cap-2 Maneuver	32	51	-	40	52	-	-	-	-	-	-	-
Stage 1	268	259	-	321	346	-	-	-	-	-	-	-
Stage 2	252	341	-	233	259	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	121.4	63.4			0			1.1		
HCM LOS	F	F								
<hr/>										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR	
Capacity (veh/h)	770	-	-	32	40	324	727	-	-	
HCM Lane V/C Ratio	-	-	-	0.034	0.571	0.181	0.132	-	-	
HCM Control Delay (s)	0	-	-	121.4	178.5	18.6	10.7	-	-	
HCM Lane LOS	A	-	-	F	F	C	B	-	-	
HCM 95th %tile Q(veh)	0	-	-	0.1	2	0.7	0.5	-	-	

Intersection

Int Delay, s/veh 42.5

Movement WBL WBR NBT NBR SBL SBT

Lane Configurations						
Traffic Vol, veh/h	84	54	835	164	107	768
Future Vol, veh/h	84	54	835	164	107	768
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	91	59	908	178	116	835

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	2064	997	0	0	1086
Stage 1	997	-	-	-	-
Stage 2	1067	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	~ 60	296	-	-	642
Stage 1	357	-	-	-	-
Stage 2	331	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	~ 49	296	-	-	642
Mov Cap-2 Maneuver	~ 49	-	-	-	-
Stage 1	357	-	-	-	-
Stage 2	271	-	-	-	-

Approach WB NB SB

HCM Control Delay, \$s 610.9 0 1.4

HCM LOS F

Minor Lane/Major Mvmt	NBT	NBR	WB Ln1	SBL	SBT
Capacity (veh/h)	-	-	73	642	-
HCM Lane V/C Ratio	-	-	2.055	0.181	-
HCM Control Delay (s)	-	\$ 610.9	11.8	-	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	13.7	0.7	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 38.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	7	70	0	95	2	942	122	148	703	1
Future Vol, veh/h	3	1	7	70	0	95	2	942	122	148	703	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	50	-	-	50	275	-	275	375	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	8	76	0	103	2	1024	133	161	764	1

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	2232	2247	764	2119	2115	1024	765	0	0	1157	0	0
Stage 1	1086	1086	-	1028	1028	-	-	-	-	-	-	-
Stage 2	1146	1161	-	1091	1087	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	30	42	404	~ 37	51	286	848	-	-	604	-	-
Stage 1	262	292	-	283	311	-	-	-	-	-	-	-
Stage 2	242	270	-	260	292	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	15	31	404	~ 28	37	286	848	-	-	604	-	-
Mov Cap-2 Maneuver	15	31	-	~ 28	37	-	-	-	-	-	-	-
Stage 1	261	214	-	282	310	-	-	-	-	-	-	-
Stage 2	154	269	-	186	214	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB				
HCM Control Delay, s	110.1	\$ 469.6			0			2.3				
HCM LOS	F	F										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	848	-	-	17	404	28	286	604	-	-		
HCM Lane V/C Ratio	0.003	-	-	0.256	0.019	2.717	0.361	0.266	-	-		
HCM Control Delay (s)	9.3	-	-	278.2	14.1	1073.6	24.5	13.1	-	-		
HCM Lane LOS	A	-	-	F	B	F	C	B	-	-		
HCM 95th %tile Q(veh)	0	-	-	0.7	0.1	9.1	1.6	1.1	-	-		

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection			
Intersection Delay, s/veh	80.8		
Intersection LOS	F		
Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	269	1465	798
Demand Flow Rate, veh/h	274	1494	814
Vehicles Circulating, veh/h	1063	130	165
Vehicles Exiting, veh/h	561	849	1172
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	21.4	128.4	13.6
Approach LOS	C	F	B
Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	274	1494	814
Cap Entry Lane, veh/h	467	1209	1166
Entry HV Adj Factor	0.982	0.981	0.980
Flow Entry, veh/h	269	1465	798
Cap Entry, veh/h	458	1185	1143
V/C Ratio	0.587	1.236	0.698
Control Delay, s/veh	21.4	128.4	13.6
LOS	C	F	B
95th %tile Queue, veh	4	47	6

Intersection

Int Delay, s/veh 3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	0	3	6	0	11	2	1317	3	7	731	3
Future Vol, veh/h	17	0	3	6	0	11	2	1317	3	7	731	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	50	-	-	-	125	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	0	3	7	0	12	2	1432	3	8	795	3

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	2257	2252	797	2252	2252	1434	798	0	0	1435	0	0
Stage 1	813	813	-	1438	1438	-	-	-	-	-	-	-
Stage 2	1444	1439	-	814	814	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	29	41	387	29	41	164	824	-	-	473	-	-
Stage 1	372	392	-	165	198	-	-	-	-	-	-	-
Stage 2	164	198	-	372	391	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	26	40	387	28	40	164	824	-	-	473	-	-
Mov Cap-2 Maneuver	26	40	-	28	40	-	-	-	-	-	-	-
Stage 1	371	385	-	165	198	-	-	-	-	-	-	-
Stage 2	152	198	-	363	384	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB				
HCM Control Delay, s	256	89.7			0			0.1				
HCM LOS	F	F										
<hr/>												
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	824	-	-	26	387	60	473	-	-			
HCM Lane V/C Ratio	0.003	-	-	0.711	0.008	0.308	0.016	-	-			
HCM Control Delay (s)	9.4	-	-	298.6	14.4	89.7	12.7	-	-			
HCM Lane LOS	A	-	-	F	B	F	B	-	-			
HCM 95th %tile Q(veh)	0	-	-	2.2	0	1.1	0	-	-			

Intersection

Int Delay, s/veh 99.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
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Lane Configurations 

Traffic Vol, veh/h 132 251 999 152 181 408

Future Vol, veh/h 132 251 999 152 181 408

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 75 - - 325 -

Veh in Median Storage, # 0 - 0 - - 0

Grade, % 0 - 0 - - 0

Peak Hour Factor 92 92 92 92 92 92

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 143 273 1086 165 197 443

Major/Minor	Minor1	Major1	Major2
-------------	--------	--------	--------

Conflicting Flow All 2006 1169 0 0 1251 0

Stage 1 1169 - - - - -

Stage 2 837 - - - - -

Critical Hdwy 6.42 6.22 - - 4.12 -

Critical Hdwy Stg 1 5.42 - - - - -

Critical Hdwy Stg 2 5.42 - - - - -

Follow-up Hdwy 3.518 3.318 - - 2.218 -

Pot Cap-1 Maneuver ~ 65 ~ 235 - - 556 -

Stage 1 295 - - - - -

Stage 2 425 - - - - -

Platoon blocked, % - - - - -

Mov Cap-1 Maneuver ~ 42 ~ 235 - - 556 -

Mov Cap-2 Maneuver ~ 42 - - - - -

Stage 1 295 - - - - -

Stage 2 275 - - - - -

Approach	WB	NB	SB
----------	----	----	----

HCM Control Delay, \$ 544.2 0 4.6

HCM LOS F

Minor Lane/Major Mvmt	NBT	NBR	WB Ln1	WB Ln2	SBL	SBT
-----------------------	-----	-----	--------	--------	-----	-----

Capacity (veh/h) - - 42 235 556 -

HCM Lane V/C Ratio - - 3.416 1.161 0.354 -

HCM Control Delay (s) - - \$ 1288 153 15 -

HCM Lane LOS - - F F B -

HCM 95th %tile Q(veh) - - 16 12.8 1.6 -

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	344	3	2	408	4	1
Future Vol, veh/h	344	3	2	408	4	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	374	3	2	443	4	1

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	377	0	823
Stage 1	-	-	-	-	376
Stage 2	-	-	-	-	447
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1181	-	343
Stage 1	-	-	-	-	694
Stage 2	-	-	-	-	644
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1181	-	342
Mov Cap-2 Maneuver	-	-	-	-	342
Stage 1	-	-	-	-	694
Stage 2	-	-	-	-	643

Approach	EB	WB	NB	
HCM Control Delay, s	0	0	14.6	
HCM LOS			B	

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	379	-	-	1181	-
HCM Lane V/C Ratio	0.014	-	-	0.002	-
HCM Control Delay (s)	14.6	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↔	↔		
Traffic Vol, veh/h	334	3	1	381	2	0
Future Vol, veh/h	334	3	1	381	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	363	3	1	414	2	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	366	0	781	365
Stage 1	-	-	-	-	365	-
Stage 2	-	-	-	-	416	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1193	-	363	680
Stage 1	-	-	-	-	702	-
Stage 2	-	-	-	-	666	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1193	-	363	680
Mov Cap-2 Maneuver	-	-	-	-	363	-
Stage 1	-	-	-	-	702	-
Stage 2	-	-	-	-	665	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0	15			
HCM LOS			C			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	363	-	-	1193	-	
HCM Lane V/C Ratio	0.006	-	-	0.001	-	
HCM Control Delay (s)	15	-	-	8	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

HCM 6th Signalized Intersection Summary
10: Calistoga Road (SR-29)/SR-29 & Wardlaw Street

Cumulative +Project PM

11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	3	40	40	11	47	16	1082	15	9	495	136
Future Volume (veh/h)	142	3	40	40	11	47	16	1082	15	9	495	136
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00			1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	154	3	43	43	12	51	17	1176	16	10	538	148
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	277	4	52	153	58	129	508	1315	18	199	1008	277
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.71	0.71	0.71	0.71	0.71	0.71
Sat Flow, veh/h	1175	24	328	512	361	809	756	1841	25	470	1412	388
Grp Volume(v), veh/h	200	0	0	106	0	0	17	0	1192	10	0	686
Grp Sat Flow(s), veh/h/ln	1527	0	0	1682	0	0	756	0	1866	470	0	1800
Q Serve(g_s), s	4.8	0.0	0.0	0.0	0.0	0.0	0.8	0.0	36.0	1.2	0.0	12.5
Cycle Q Clear(g_c), s	8.8	0.0	0.0	3.9	0.0	0.0	13.3	0.0	36.0	37.2	0.0	12.5
Prop In Lane	0.77		0.21	0.41			0.48	1.00		0.01	1.00	0.22
Lane Grp Cap(c), veh/h	333	0	0	339	0	0	508	0	1332	199	0	1286
V/C Ratio(X)	0.60	0.00	0.00	0.31	0.00	0.00	0.03	0.00	0.89	0.05	0.00	0.53
Avail Cap(c_a), veh/h	469	0	0	487	0	0	634	0	1644	277	0	1586
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.6	0.0	0.0	26.8	0.0	0.0	7.8	0.0	8.1	22.8	0.0	4.7
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.5	0.0	0.0	0.0	0.0	5.8	0.1	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	3.3	0.0	0.0	1.6	0.0	0.0	0.1	0.0	11.3	0.1	0.0	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	30.3	0.0	0.0	27.3	0.0	0.0	7.8	0.0	13.9	22.9	0.0	5.0
LnGrp LOS	C	A	A	C	A	A	A	A	B	C	A	A
Approach Vol, veh/h	200			106			1209			696		
Approach Delay, s/veh	30.3			27.3			13.8			5.3		
Approach LOS	C			C			B			A		
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+R _c), s	55.3		15.8		55.3		15.8					
Change Period (Y+R _c), s	4.5		4.5		4.5		4.5					
Max Green Setting (Gmax), s	62.7		18.3		62.7		18.3					
Max Q Clear Time (g_c+l1), s	38.0		10.8		39.2		5.9					
Green Ext Time (p_c), s	12.8		0.6		5.4		0.4					
Intersection Summary												
HCM 6th Ctrl Delay			13.3									
HCM 6th LOS			B									

Intersection

Int Delay, s/veh 0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	1	6	3	0	4	6	1082	15	10	603	7
Future Vol, veh/h	7	1	6	3	0	4	6	1082	15	10	603	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	1	7	3	0	4	7	1176	16	11	655	8

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1881	1887	659	1883	1883	1184	663	0	0	1192	0	0
Stage 1	681	681	-	1198	1198	-	-	-	-	-	-	-
Stage 2	1200	1206	-	685	685	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	54	70	464	54	71	230	926	-	-	586	-	-
Stage 1	440	450	-	227	259	-	-	-	-	-	-	-
Stage 2	226	257	-	438	448	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	51	66	464	50	67	230	926	-	-	586	-	-
Mov Cap-2 Maneuver	51	66	-	50	67	-	-	-	-	-	-	-
Stage 1	430	437	-	222	253	-	-	-	-	-	-	-
Stage 2	217	251	-	418	435	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB				
HCM Control Delay, s	56.4	48.7			0			0.2				
HCM LOS	F	E										
<hr/>												
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	926	-	-	85	90	586	-	-				
HCM Lane V/C Ratio	0.007	-	-	0.179	0.085	0.019	-	-				
HCM Control Delay (s)	8.9	0	-	56.4	48.7	11.3	0	-				
HCM Lane LOS	A	A	-	F	E	B	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.6	0.3	0.1	-	-				

HCM 6th Signalized Intersection Summary
12: Calistoga Road (SR-29) & Highway 175/Main Street

Cumulative +Project PM

11/27/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	261	13	78	26	26	13	62	820	9	2	447	176
Future Volume (veh/h)	261	13	78	26	26	13	62	820	9	2	447	176
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	284	14	85	28	28	14	67	891	10	2	486	191
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	391	15	93	226	217	95	99	992	11	46	765	300
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.60	0.60	0.60	0.60	0.60	0.60
Sat Flow, veh/h	1083	53	324	566	756	330	84	1656	18	1	1278	500
Grp Volume(v), veh/h	383	0	0	70	0	0	968	0	0	679	0	0
Grp Sat Flow(s), veh/h/ln	1461	0	0	1652	0	0	1758	0	0	1779	0	0
Q Serve(g_s), s	17.7	0.0	0.0	0.0	0.0	0.0	18.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	19.9	0.0	0.0	2.3	0.0	0.0	38.1	0.0	0.0	19.6	0.0	0.0
Prop In Lane	0.74			0.22	0.40		0.20	0.07		0.01	0.00	0.28
Lane Grp Cap(c), veh/h	499	0	0	538	0	0	1102	0	0	1111	0	0
V/C Ratio(X)	0.77	0.00	0.00	0.13	0.00	0.00	0.88	0.00	0.00	0.61	0.00	0.00
Avail Cap(c_a), veh/h	549	0	0	592	0	0	1276	0	0	1293	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	26.9	0.0	0.0	20.9	0.0	0.0	13.6	0.0	0.0	10.3	0.0	0.0
Incr Delay (d2), s/veh	5.9	0.0	0.0	0.1	0.0	0.0	6.6	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	7.4	0.0	0.0	0.9	0.0	0.0	14.3	0.0	0.0	6.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	32.9	0.0	0.0	21.0	0.0	0.0	20.2	0.0	0.0	10.9	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	C	A	A	B	A	A
Approach Vol, veh/h	383				70			968			679	
Approach Delay, s/veh	32.9				21.0			20.2			10.9	
Approach LOS	C				C			C			B	
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+R _c), s	51.9			27.2			51.9			27.2		
Change Period (Y+R _c), s	4.5			4.5			4.5			4.5		
Max Green Setting (Gmax), s	55.5			25.5			55.5			25.5		
Max Q Clear Time (g_c+l1), s	40.1			21.9			21.6			4.3		
Green Ext Time (p_c), s	7.2			0.8			5.7			0.3		
Intersection Summary												
HCM 6th Ctrl Delay				19.5								
HCM 6th LOS				B								

Intersection

Int Delay, s/veh 2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	4	21	7	8	30	25	897	12	22	433	67
Future Vol, veh/h	7	4	21	7	8	30	25	897	12	22	433	67
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	4	23	8	9	33	27	975	13	24	471	73

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1613	1598	508	1605	1628	982	544	0	0	988	0	0
Stage 1	556	556	-	1036	1036	-	-	-	-	-	-	-
Stage 2	1057	1042	-	569	592	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	84	106	565	85	102	302	1025	-	-	699	-	-
Stage 1	515	513	-	280	309	-	-	-	-	-	-	-
Stage 2	272	307	-	507	494	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	64	95	565	72	91	302	1025	-	-	699	-	-
Mov Cap-2 Maneuver	64	95	-	72	91	-	-	-	-	-	-	-
Stage 1	485	487	-	263	291	-	-	-	-	-	-	-
Stage 2	221	289	-	458	469	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	31.5	37.7			0.2			0.4		
HCM LOS	D	E								
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Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	1025	-	-	170	158	699	-	-		
HCM Lane V/C Ratio	0.027	-	-	0.205	0.31	0.034	-	-		
HCM Control Delay (s)	8.6	0	-	31.5	37.7	10.3	0	-		
HCM Lane LOS	A	A	-	D	E	B	A	-		
HCM 95th %tile Q(veh)	0.1	-	-	0.7	1.2	0.1	-	-		

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	1	2	1	10	3	990	8	10	436	6
Future Vol, veh/h	1	0	1	2	1	10	3	990	8	10	436	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	1	2	1	11	3	1076	9	11	474	7

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1593	1591	478	1587	1590	1081	481	0	0	1085	0	0
Stage 1	500	500	-	1087	1087	-	-	-	-	-	-	-
Stage 2	1093	1091	-	500	503	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	86	107	587	87	108	265	1082	-	-	643	-	-
Stage 1	553	543	-	262	292	-	-	-	-	-	-	-
Stage 2	260	291	-	553	541	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	80	104	587	85	105	265	1082	-	-	643	-	-
Mov Cap-2 Maneuver	80	104	-	85	105	-	-	-	-	-	-	-
Stage 1	549	531	-	260	290	-	-	-	-	-	-	-
Stage 2	247	289	-	539	529	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	30.9	26.2			0			0.2		
HCM LOS	D	D								
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Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	1082	-	-	141	184	643	-	-		
HCM Lane V/C Ratio	0.003	-	-	0.015	0.077	0.017	-	-		
HCM Control Delay (s)	8.3	0	-	30.9	26.2	10.7	0	-		
HCM Lane LOS	A	A	-	D	D	B	A	-		
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0.1	-	-		

Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	2	4	0	10	9	982	8	0	415	5
Future Vol, veh/h	3	1	2	4	0	10	9	982	8	0	415	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	2	4	0	11	10	1067	9	0	451	5

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	1551	1550	454	1547	1548	1072	456	0	0	1076	0	0
Stage 1	454	454	-	1092	1092	-	-	-	-	-	-	-
Stage 2	1097	1096	-	455	456	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	92	114	606	93	114	268	1105	-	-	648	-	-
Stage 1	586	569	-	260	291	-	-	-	-	-	-	-
Stage 2	258	289	-	585	568	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	87	111	606	90	111	268	1105	-	-	648	-	-
Mov Cap-2 Maneuver	87	111	-	90	111	-	-	-	-	-	-	-
Stage 1	573	569	-	254	284	-	-	-	-	-	-	-
Stage 2	242	282	-	582	568	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Control Delay, s	34.6	28.1			0.1			0		
HCM LOS	D	D								
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Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	1105	-	-	128	171	648	-	-		
HCM Lane V/C Ratio	0.009	-	-	0.051	0.089	-	-	-		
HCM Control Delay (s)	8.3	0	-	34.6	28.1	0	-	-		
HCM Lane LOS	A	A	-	D	D	A	-	-		
HCM 95th %tile Q(veh)	0	-	-	0.2	0.3	0	-	-		

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		A	B		
Traffic Vol, veh/h	7	4	3	966	418	12
Future Vol, veh/h	7	4	3	966	418	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	4	3	1050	454	13
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1517	461	467	0	-	0
Stage 1	461	-	-	-	-	-
Stage 2	1056	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	131	600	1094	-	-	-
Stage 1	635	-	-	-	-	-
Stage 2	335	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	130	600	1094	-	-	-
Mov Cap-2 Maneuver	130	-	-	-	-	-
Stage 1	631	-	-	-	-	-
Stage 2	335	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	26.2	0		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1094	-	182	-	-	
HCM Lane V/C Ratio	0.003	-	0.066	-	-	
HCM Control Delay (s)	8.3	0	26.2	-	-	
HCM Lane LOS	A	A	D	-	-	
HCM 95th %tile Q(veh)	0	-	0.2	-	-	

Intersection

Int Delay, s/veh 0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	12	3	39	987	385	14
Future Vol, veh/h	12	3	39	987	385	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	275	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	3	42	1073	418	15

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	1583	426	433	0	-
Stage 1	426	-	-	-	-
Stage 2	1157	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	120	628	1127	-	-
Stage 1	659	-	-	-	-
Stage 2	299	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	116	628	1127	-	-
Mov Cap-2 Maneuver	116	-	-	-	-
Stage 1	635	-	-	-	-
Stage 2	299	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	34.1	0.3	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1127	-	116	628	-	-
HCM Lane V/C Ratio	0.038	-	0.112	0.005	-	-
HCM Control Delay (s)	8.3	-	39.9	10.8	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	0	-	-

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	330	9	24	271	4	20	1	18	2	0	1
Future Vol, veh/h	1	330	9	24	271	4	20	1	18	2	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	359	10	26	295	4	22	1	20	2	0	1
Major/Minor												
Major1		Major2			Minor1			Minor2				
Conflicting Flow All	299	0	0	369	0	0	716	717	364	726	720	297
Stage 1	-	-	-	-	-	-	366	366	-	349	349	-
Stage 2	-	-	-	-	-	-	350	351	-	377	371	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1262	-	-	1190	-	-	345	355	681	340	354	742
Stage 1	-	-	-	-	-	-	653	623	-	667	633	-
Stage 2	-	-	-	-	-	-	666	632	-	644	620	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1262	-	-	1190	-	-	337	345	681	323	344	742
Mov Cap-2 Maneuver	-	-	-	-	-	-	337	345	-	323	344	-
Stage 1	-	-	-	-	-	-	652	622	-	666	617	-
Stage 2	-	-	-	-	-	-	648	616	-	624	619	-
Approach												
EB			WB			NB			SB			
HCM Control Delay, s	0			0.6			14.1			14.1		
HCM LOS							B			B		
Minor Lane/Major Mvmt												
Capacity (veh/h)	440	1262	-	-	1190	-	-	-	398			
HCM Lane V/C Ratio	0.096	0.001	-	-	0.022	-	-	-	0.008			
HCM Control Delay (s)	14.1	7.9	0	-	8.1	0	-	-	14.1			
HCM Lane LOS	B	A	A	-	A	A	-	-	B			
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	-	0			

Intersection						
Int Delay, s/veh	3.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↔	↔		
Traffic Vol, veh/h	52	54	12	83	106	3
Future Vol, veh/h	52	54	12	83	106	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	57	59	13	90	115	3
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	116	0	203	87
Stage 1	-	-	-	-	87	-
Stage 2	-	-	-	-	116	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1473	-	786	971
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	909	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1473	-	779	971
Mov Cap-2 Maneuver	-	-	-	-	779	-
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	901	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0.9	10.4			
HCM LOS			B			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	783	-	-	1473	-	
HCM Lane V/C Ratio	0.151	-	-	0.009	-	
HCM Control Delay (s)	10.4	-	-	7.5	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.5	-	-	0	-	

Intersection

Int Delay, s/veh 306

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	698	37	92	297	87	236
Future Vol, veh/h	698	37	92	297	87	236
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	759	40	100	323	95	257

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	747	224	352	0	-	0
Stage 1	224	-	-	-	-	-
Stage 2	523	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 381	815	1207	-	-	-
Stage 1	813	-	-	-	-	-
Stage 2	~ 595	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 343	815	1207	-	-	-
Mov Cap-2 Maneuver	~ 343	-	-	-	-	-
Stage 1	~ 731	-	-	-	-	-
Stage 2	~ 595	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s\$	601.4	2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1207	-	353	-	-
HCM Lane V/C Ratio	0.083	-	2.263	-	-
HCM Control Delay (s)	8.3	0\$	601.4	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.3	-	60.7	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 93.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
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Lane Configurations						
Traffic Vol, veh/h	371	57	67	542	147	132
Future Vol, veh/h	371	57	67	542	147	132
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	403	62	73	589	160	143

Major/Minor	Minor1	Major1	Major2
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Conflicting Flow All	831	368	0	0	662	0
Stage 1	368	-	-	-	-	-
Stage 2	463	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	~ 340	677	-	-	927	-
Stage 1	700	-	-	-	-	-
Stage 2	634	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 281	677	-	-	927	-
Mov Cap-2 Maneuver	~ 281	-	-	-	-	-
Stage 1	700	-	-	-	-	-
Stage 2	524	-	-	-	-	-

Approach	WB	NB	SB
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HCM Control Delay, s	283.6	0	5.1
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HCM LOS	F
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Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	305	927	-
HCM Lane V/C Ratio	-	-	1.525	0.172	-
HCM Control Delay (s)	-	-	283.6	9.7	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	26.6	0.6	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	302	353	3	3	20
Future Vol, veh/h	27	302	353	3	3	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	328	384	3	3	22
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	387	0	-	0	772	386
Stage 1	-	-	-	-	386	-
Stage 2	-	-	-	-	386	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1171	-	-	-	368	662
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	687	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1171	-	-	-	357	662
Mov Cap-2 Maneuver	-	-	-	-	357	-
Stage 1	-	-	-	-	666	-
Stage 2	-	-	-	-	687	-
Approach	EB	WB	SB			
HCM Control Delay, s	0.7	0	11.3			
HCM LOS			B			
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1171	-	-	-	596	
HCM Lane V/C Ratio	0.025	-	-	-	0.042	
HCM Control Delay (s)	8.2	0	-	-	11.3	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	

Intersection

Int Delay, s/veh 1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	54	237	14	2	306	7	10	0	1	5	0	40
Future Vol, veh/h	54	237	14	2	306	7	10	0	1	5	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	59	258	15	2	333	8	11	0	1	5	0	43

Major/Minor	Major1	Major2		Minor1		Minor2						
Conflicting Flow All	341	0	0	273	0	0	747	729	266	725	732	337
Stage 1	-	-	-	-	-	-	384	384	-	341	341	-
Stage 2	-	-	-	-	-	-	363	345	-	384	391	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1218	-	-	1290	-	-	329	350	773	340	348	705
Stage 1	-	-	-	-	-	-	639	611	-	674	639	-
Stage 2	-	-	-	-	-	-	656	636	-	639	607	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1218	-	-	1290	-	-	295	329	773	324	327	705
Mov Cap-2 Maneuver	-	-	-	-	-	-	295	329	-	324	327	-
Stage 1	-	-	-	-	-	-	603	576	-	636	638	-
Stage 2	-	-	-	-	-	-	614	635	-	602	572	-

Approach	EB	WB		NB		SB		
HCM Control Delay, s	1.4	0		17		11.3		
HCM LOS				C		B		
<hr/>								
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	313	1218	-	-	1290	-	-	624
HCM Lane V/C Ratio	0.038	0.048	-	-	0.002	-	-	0.078
HCM Control Delay (s)	17	8.1	0	-	7.8	0	-	11.3
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	0.3

Intersection						
Int Delay, s/veh	5.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	177	66	185	22	16	130
Future Vol, veh/h	177	66	185	22	16	130
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	192	72	201	24	17	141
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	225	0	-	0	669	213
Stage 1	-	-	-	-	213	-
Stage 2	-	-	-	-	456	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1344	-	-	-	423	827
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	638	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1344	-	-	-	360	827
Mov Cap-2 Maneuver	-	-	-	-	360	-
Stage 1	-	-	-	-	700	-
Stage 2	-	-	-	-	638	-
Approach	EB	WB	SB			
HCM Control Delay, s	5.9	0	11.4			
HCM LOS			B			
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1344	-	-	-	724	
HCM Lane V/C Ratio	0.143	-	-	-	0.219	
HCM Control Delay (s)	8.1	0	-	-	11.4	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.5	-	-	-	0.8	

HCM 6th Signalized Intersection Summary
3: SR-29 & Spruce Grove Road (South)

Cumulative +Project AM Mitigated

12/02/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (veh/h)	129	72	558	67	25	519
Future Volume (veh/h)	129	72	558	67	25	519
Initial Q (Q _b), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1870	1870	1870	1870
Adj Flow Rate, veh/h	140	78	607	73	27	564
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	190	106	869	105	430	993
Arrive On Green	0.17	0.17	0.53	0.53	0.53	0.53
Sat Flow, veh/h	1091	608	1638	197	760	1870
Grp Volume(v), veh/h	219	0	0	680	27	564
Grp Sat Flow(s), veh/h/ln	1706	0	0	1835	760	1870
Q Serve(g_s), s	3.7	0.0	0.0	8.4	0.8	6.2
Cycle Q Clear(g_c), s	3.7	0.0	0.0	8.4	9.3	6.2
Prop In Lane	0.64	0.36		0.11	1.00	
Lane Grp Cap(c), veh/h	297	0	0	974	430	993
V/C Ratio(X)	0.74	0.00	0.00	0.70	0.06	0.57
Avail Cap(c_a), veh/h	1314	0	0	3458	1458	3525
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.9	0.0	0.0	5.3	8.8	4.8
Incr Delay (d2), s/veh	3.6	0.0	0.0	0.9	0.1	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.3	0.0	0.0	1.4	0.1	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	15.5	0.0	0.0	6.3	8.8	5.3
LnGrp LOS	B	A	A	A	A	A
Approach Vol, veh/h	219		680		591	
Approach Delay, s/veh	15.5		6.3		5.5	
Approach LOS	B		A		A	
Timer - Assigned Phs		2		6		8
Phs Duration (G+Y+R _c), s		20.7		20.7		9.8
Change Period (Y+R _c), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		57.5		57.5		23.5
Max Q Clear Time (g_c+l1), s		10.4		11.3		5.7
Green Ext Time (p_c), s		5.8		4.6		0.6
Intersection Summary						
HCM 6th Ctrl Delay			7.3			
HCM 6th LOS			A			

HCM 6th Signalized Intersection Summary
4: SR-29 & Hidden Valley Road

Cumulative +Project AM Mitigated

12/02/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	0	1	122	0	150	1	594	43	47	626	1
Future Volume (veh/h)	3	0	1	122	0	150	1	594	43	47	626	1
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	0	1	133	0	163	1	646	47	51	680	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	10	0	9	272	0	242	3	822	697	90	914	774
Arrive On Green	0.01	0.00	0.01	0.15	0.00	0.15	0.00	0.44	0.44	0.05	0.49	0.49
Sat Flow, veh/h	1781	0	1585	1781	0	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	3	0	1	133	0	163	1	646	47	51	680	1
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.1	0.0	0.0	3.5	0.0	5.0	0.0	15.1	0.9	1.4	14.9	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0	3.5	0.0	5.0	0.0	15.1	0.9	1.4	14.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	10	0	9	272	0	242	3	822	697	90	914	774
V/C Ratio(X)	0.31	0.00	0.12	0.49	0.00	0.67	0.29	0.79	0.07	0.57	0.74	0.00
Avail Cap(c_a), veh/h	627	0	558	627	0	558	174	2104	1783	296	2232	1891
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.3	0.0	25.3	19.8	0.0	20.5	25.5	12.3	8.3	23.7	10.5	6.7
Incr Delay (d2), s/veh	17.3	0.0	5.9	1.4	0.0	3.3	40.0	1.7	0.0	5.5	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	1.4	0.0	1.9	0.0	5.4	0.3	0.7	5.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.7	0.0	31.2	21.2	0.0	23.7	65.4	14.0	8.3	29.3	11.7	6.7
LnGrp LOS	D	A	C	C	A	C	E	B	A	C	B	A
Approach Vol, veh/h		4			296			694			732	
Approach Delay, s/veh	39.8			22.6				13.7			12.9	
Approach LOS	D			C			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	27.0		4.8	4.6	29.5		12.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax)	5.5	57.5		18.0	5.0	61.0		18.0				
Max Q Clear Time (g_c+l3)	13.4	17.1		2.1	2.0	16.9		7.0				
Green Ext Time (p_c), s	0.0	5.4		0.0	0.0	5.6		1.0				
Intersection Summary												
HCM 6th Ctrl Delay		14.9										
HCM 6th LOS		B										

HCM 6th Signalized Intersection Summary
5: SR-29 & Hartmann Road

Cumulative +Project AM Mitigated
12/02/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖ ↗ ↘ ↙ ↖ ↙	↖ ↗ ↘ ↙ ↖ ↙	↑ ↗ ↘ ↙ ↖ ↙	↖ ↗ ↘ ↙ ↖ ↙	↖ ↗ ↘ ↙ ↖ ↙	↑ ↗ ↘ ↙ ↖ ↙
Traffic Volume (veh/h)	369	115	504	189	97	684
Future Volume (veh/h)	369	115	504	189	97	684
Initial Q (Q _b), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	401	125	548	205	105	743
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	499	444	721	611	138	1026
Arrive On Green	0.28	0.28	0.39	0.39	0.08	0.55
Sat Flow, veh/h	1781	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	401	125	548	205	105	743
Grp Sat Flow(s), veh/h/ln	1781	1585	1870	1585	1781	1870
Q Serve(g_s), s	11.0	3.2	13.4	4.8	3.0	15.6
Cycle Q Clear(g_c), s	11.0	3.2	13.4	4.8	3.0	15.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	499	444	721	611	138	1026
V/C Ratio(X)	0.80	0.28	0.76	0.34	0.76	0.72
Avail Cap(c_a), veh/h	1375	1224	1832	1553	496	2513
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.6	14.8	14.0	11.4	23.7	8.9
Incr Delay (d2), s/veh	3.1	0.3	1.7	0.3	8.4	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	4.4	1.1	5.0	1.5	1.5	4.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	20.7	15.1	15.7	11.7	32.1	9.9
LnGrp LOS	C	B	B	B	C	A
Approach Vol, veh/h	526		753			848
Approach Delay, s/veh	19.3		14.6			12.6
Approach LOS	B		B			B
Timer - Assigned Phs	1	2		6		8
Phs Duration (G+Y+R _c), s	8.6	24.7		33.3		19.2
Change Period (Y+R _c), s	4.5	4.5		4.5		4.5
Max Green Setting (G _{max})	14.6	51.4		70.5		40.5
Max Q Clear Time (g_c+l _q)	15.4			17.6		13.0
Green Ext Time (p _c), s	0.2	4.9		6.6		1.7
Intersection Summary						
HCM 6th Ctrl Delay		15.0				
HCM 6th LOS		B				

HCM 6th Signalized Intersection Summary
7: SR-29 & Butts Canyon Road

Cumulative +Project AM Mitigated
12/02/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖ ↗ ↘ ↗ ↙ ↘					
Traffic Volume (veh/h)	60	86	399	70	140	901
Future Volume (veh/h)	60	86	399	70	140	901
Initial Q (Q _b), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	93	434	76	152	979
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	181	343	849	719	204	1269
Arrive On Green	0.10	0.10	0.45	0.45	0.11	0.68
Sat Flow, veh/h	1781	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	65	93	434	76	152	979
Grp Sat Flow(s), veh/h/ln	1781	1585	1870	1585	1781	1870
Q Serve(g_s), s	1.4	2.0	6.8	1.1	3.4	14.5
Cycle Q Clear(g_c), s	1.4	2.0	6.8	1.1	3.4	14.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	181	343	849	719	204	1269
V/C Ratio(X)	0.36	0.27	0.51	0.11	0.74	0.77
Avail Cap(c_a), veh/h	805	898	3082	2612	892	4224
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	13.4	8.0	6.4	17.5	4.4
Incr Delay (d2), s/veh	1.2	0.4	0.5	0.1	5.3	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.6	2.0	0.3	1.5	1.9	
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	18.3	13.8	8.4	6.5	22.8	5.5
LnGrp LOS	B	B	A	A	C	A
Approach Vol, veh/h	158		510		1131	
Approach Delay, s/veh	15.7		8.1		7.8	
Approach LOS	B		A		A	
Timer - Assigned Phs	1	2		6		8
Phs Duration (G+Y+Rc), s	9.2	23.1		32.3		8.7
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax)	20.5	67.5		92.5		18.5
Max Q Clear Time (g_c+l _q)	13.6	8.8		16.5		4.0
Green Ext Time (p_c), s	0.3	3.3		11.3		0.4
Intersection Summary						
HCM 6th Ctrl Delay			8.6			
HCM 6th LOS			A			

HCM 6th Signalized Intersection Summary
20: Lake County Highway (SR-29) & Tubbs Lane

Cumulative +Project AM Mitigated

12/02/2019



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	141	29	20	46	232	540
Future Volume (veh/h)	141	29	20	46	232	540
Initial Q (Q _b), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No		No
Adj Sat Flow, veh/h/ln	1900	1900	1870	1870	1870	1870
Adj Flow Rate, veh/h	153	32	22	50	252	587
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	203	43	213	429	318	741
Arrive On Green	0.14	0.14	0.64	0.64	0.64	0.64
Sat Flow, veh/h	1435	300	153	672	499	1162
Grp Volume(v), veh/h	186	0	72	0	0	839
Grp Sat Flow(s), veh/h/ln	1745	0	825	0	0	1661
Q Serve(g_s), s	4.2	0.0	0.7	0.0	0.0	15.1
Cycle Q Clear(g_c), s	4.2	0.0	15.8	0.0	0.0	15.1
Prop In Lane	0.82	0.17	0.31			0.70
Lane Grp Cap(c), veh/h	247	0	642	0	0	1059
V/C Ratio(X)	0.75	0.00	0.11	0.00	0.00	0.79
Avail Cap(c_a), veh/h	800	0	1705	0	0	2539
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	16.8	0.0	4.2	0.0	0.0	5.4
Incr Delay (d2), s/veh	4.6	0.0	0.1	0.0	0.0	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.7	0.0	0.1	0.0	0.0	2.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	21.4	0.0	4.3	0.0	0.0	6.8
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	186			72	839	
Approach Delay, s/veh	21.4			4.3	6.8	
Approach LOS	C			A	A	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+R _c), s	30.5			10.3	30.5	
Change Period (Y+R _c), s	4.5			4.5	4.5	
Max Green Setting (Gmax), s	62.3			18.7	62.3	
Max Q Clear Time (g_c+l1), s	17.8			6.2	17.1	
Green Ext Time (p_c), s	0.5			0.4	8.9	
Intersection Summary						
HCM 6th Ctrl Delay			9.1			
HCM 6th LOS			A			

HCM 6th Signalized Intersection Summary
21: Foothill Blvd (Hwy-128) & Tubbs Lane

Cumulative +Project AM Mitigated

12/02/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (veh/h)	603	49	85	120	34	103
Future Volume (veh/h)	603	49	85	120	34	103
Initial Q (Q _b), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No	
Adj Sat Flow, veh/h/ln	1900	1900	1870	1870	1870	1870
Adj Flow Rate, veh/h	655	53	92	130	37	112
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	802	65	155	219	349	413
Arrive On Green	0.49	0.49	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1631	132	701	991	1159	1870
Grp Volume(v), veh/h	709	0	0	222	37	112
Grp Sat Flow(s), veh/h/ln	1765	0	0	1692	1159	1870
Q Serve(g_s), s	10.7	0.0	0.0	3.7	0.9	1.6
Cycle Q Clear(g_c), s	10.7	0.0	0.0	3.7	4.6	1.6
Prop In Lane	0.92	0.07		0.59	1.00	
Lane Grp Cap(c), veh/h	868	0	0	374	349	413
V/C Ratio(X)	0.82	0.00	0.00	0.59	0.11	0.27
Avail Cap(c_a), veh/h	3240	0	0	1269	963	1403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.8	0.0	0.0	10.9	13.0	10.1
Incr Delay (d2), s/veh	1.9	0.0	0.0	1.5	0.1	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.3	0.0	0.0	1.2	0.2	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	8.7	0.0	0.0	12.5	13.1	10.5
LnGrp LOS	A	A	A	B	B	B
Approach Vol, veh/h	709		222		149	
Approach Delay, s/veh	8.7		12.5		11.1	
Approach LOS	A		B		B	
Timer - Assigned Phs		2		6		8
Phs Duration (G+Y+R _c), s		11.4		11.4		19.9
Change Period (Y+R _c), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		23.5		23.5		57.5
Max Q Clear Time (g_c+l1), s		5.7		6.6		12.7
Green Ext Time (p_c), s		1.2		0.6		2.8
Intersection Summary						
HCM 6th Ctrl Delay		9.8				
HCM 6th LOS		A				

HCM 6th Signalized Intersection Summary
3: SR-29 & Spruce Grove Road (South)

Cumulative +Project PM Mitigated

12/02/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (veh/h)	84	54	835	164	107	768
Future Volume (veh/h)	84	54	835	164	107	768
Initial Q (Q _b), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1870	1870	1870	1870
Adj Flow Rate, veh/h	91	59	908	178	116	835
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	117	76	1126	221	301	1387
Arrive On Green	0.11	0.11	0.74	0.74	0.74	0.74
Sat Flow, veh/h	1024	664	1519	298	519	1870
Grp Volume(v), veh/h	151	0	0	1086	116	835
Grp Sat Flow(s), veh/h/ln	1700	0	0	1817	519	1870
Q Serve(g_s), s	5.4	0.0	0.0	23.9	11.5	13.0
Cycle Q Clear(g_c), s	5.4	0.0	0.0	23.9	35.4	13.0
Prop In Lane	0.60	0.39		0.16	1.00	
Lane Grp Cap(c), veh/h	194	0	0	1347	301	1387
V/C Ratio(X)	0.78	0.00	0.00	0.81	0.39	0.60
Avail Cap(c_a), veh/h	491	0	0	1838	442	1893
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	0.0	0.0	5.2	16.6	3.8
Incr Delay (d2), s/veh	6.6	0.0	0.0	1.9	0.8	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.4	0.0	0.0	5.0	1.3	2.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	33.5	0.0	0.0	7.1	17.4	4.2
LnGrp LOS	C	A	A	A	B	A
Approach Vol, veh/h	151		1086			951
Approach Delay, s/veh	33.5		7.1			5.8
Approach LOS	C		A			A
Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+R _c), s		50.7			50.7	11.6
Change Period (Y+R _c), s		4.5			4.5	4.5
Max Green Setting (Gmax), s		63.0			63.0	18.0
Max Q Clear Time (g_c+l1), s		25.9			37.4	7.4
Green Ext Time (p_c), s		13.0			8.7	0.3
Intersection Summary						
HCM 6th Ctrl Delay			8.4			
HCM 6th LOS			A			

HCM 6th Signalized Intersection Summary
4: SR-29 & Hidden Valley Road

Cumulative +Project PM Mitigated
12/02/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	1	7	70	0	95	2	942	122	148	703	1
Future Volume (veh/h)	3	1	7	70	0	95	2	942	122	148	703	1
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	1	8	76	0	103	2	1024	133	161	764	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	19	6	23	160	0	143	5	1098	931	190	1293	1095
Arrive On Green	0.01	0.01	0.01	0.09	0.00	0.09	0.00	0.59	0.59	0.11	0.69	0.69
Sat Flow, veh/h	1352	451	1585	1781	0	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	4	0	8	76	0	103	2	1024	133	161	764	1
Grp Sat Flow(s),veh/h/ln1803	0	1585	1781	0	1585	1781	1870	1585	1781	1870	1585	
Q Serve(g_s), s	0.2	0.0	0.4	3.6	0.0	5.6	0.1	44.5	3.4	7.9	19.0	0.0
Cycle Q Clear(g_c), s	0.2	0.0	0.4	3.6	0.0	5.6	0.1	44.5	3.4	7.9	19.0	0.0
Prop In Lane	0.75		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	26	0	23	160	0	143	5	1098	931	190	1293	1095
V/C Ratio(X)	0.15	0.00	0.35	0.47	0.00	0.72	0.41	0.93	0.14	0.85	0.59	0.00
Avail Cap(c_a), veh/h	364	0	320	360	0	320	100	1185	1004	190	1293	1095
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.4	0.0	43.5	38.6	0.0	39.5	44.4	16.8	8.3	39.1	7.2	4.3
Incr Delay (d2), s/veh	2.7	0.0	8.9	2.2	0.0	6.7	48.2	12.6	0.1	28.5	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.2	1.7	0.0	2.4	0.1	20.5	1.1	4.9	6.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.1	0.0	52.4	40.7	0.0	46.2	92.6	29.4	8.4	67.7	7.9	4.3
LnGrp LOS	D	A	D	D	A	D	F	C	A	E	A	A
Approach Vol, veh/h		12			179			1159			926	
Approach Delay, s/veh	50.3			43.9				27.1			18.3	
Approach LOS	D			D			C			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.0	56.9		5.8	4.7	66.1		12.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5	56.5		18.0	5.0	61.0		18.0				
Max Q Clear Time (g_c+l), s	9.5	46.5		2.4	2.1	21.0		7.6				
Green Ext Time (p_c), s	0.0	5.8		0.0	0.0	6.7		0.5				
Intersection Summary												
HCM 6th Ctrl Delay		24.9										
HCM 6th LOS		C										

HCM 6th Signalized Intersection Summary
5: SR-29 & Hartmann Road

Cumulative +Project PM Mitigated
12/02/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖ ↗ ↘ ↙ ↖ ↘	↖ ↗ ↘ ↙ ↖ ↘	↑ ↗ ↘ ↙ ↖ ↘	↖ ↗ ↘ ↙ ↖ ↘	↖ ↗ ↘ ↙ ↖ ↘	↑ ↗ ↘ ↙ ↖ ↘
Traffic Volume (veh/h)	149	98	959	389	117	617
Future Volume (veh/h)	149	98	959	389	117	617
Initial Q (Q _b), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	162	107	1042	423	127	671
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	209	186	1193	1011	160	1458
Arrive On Green	0.12	0.12	0.64	0.64	0.09	0.78
Sat Flow, veh/h	1781	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	162	107	1042	423	127	671
Grp Sat Flow(s), veh/h/ln	1781	1585	1870	1585	1781	1870
Q Serve(g_s), s	7.7	5.6	39.6	11.5	6.1	10.7
Cycle Q Clear(g_c), s	7.7	5.6	39.6	11.5	6.1	10.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	209	186	1193	1011	160	1458
V/C Ratio(X)	0.78	0.58	0.87	0.42	0.79	0.46
Avail Cap(c_a), veh/h	369	328	1644	1394	248	2002
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.3	36.3	12.9	7.8	38.8	3.3
Incr Delay (d2), s/veh	6.1	2.8	4.1	0.3	9.3	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	3.6	2.3	15.1	3.4	3.0	2.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	43.4	39.1	17.0	8.0	48.1	3.5
LnGrp LOS	D	D	B	A	D	A
Approach Vol, veh/h	269		1465			798
Approach Delay, s/veh	41.7		14.4			10.6
Approach LOS	D		B			B
Timer - Assigned Phs	1	2		6		8
Phs Duration (G+Y+Rc), s	2.3	59.9		72.2		14.7
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	76.4			93.0		18.0
Max Q Clear Time (g_c+l), s	41.6			12.7		9.7
Green Ext Time (p_c), s	0.1	13.8		5.6		0.5
Intersection Summary						
HCM 6th Ctrl Delay		16.1				
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary
7: SR-29 & Butts Canyon Road

Cumulative +Project PM Mitigated
12/02/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖ ↗ ↘ ↗ ↙ ↘					
Traffic Volume (veh/h)	132	251	999	152	181	408
Future Volume (veh/h)	132	251	999	152	181	408
Initial Q (Q _b), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	143	273	1086	165	197	443
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	274	440	1136	963	220	1439
Arrive On Green	0.15	0.15	0.61	0.61	0.12	0.77
Sat Flow, veh/h	1781	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	143	273	1086	165	197	443
Grp Sat Flow(s),veh/h/ln	1781	1585	1870	1585	1781	1870
Q Serve(g_s), s	8.7	17.6	63.7	5.3	12.8	8.4
Cycle Q Clear(g_c), s	8.7	17.6	63.7	5.3	12.8	8.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	274	440	1136	963	220	1439
V/C Ratio(X)	0.52	0.62	0.96	0.17	0.89	0.31
Avail Cap(c_a), veh/h	274	440	1181	1001	220	1485
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	36.9	21.5	10.1	50.6	4.1
Incr Delay (d2), s/veh	1.8	2.7	16.4	0.1	33.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	7.1	30.8	1.8	7.7	2.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	47.4	39.6	38.0	10.2	84.1	4.2
LnGrp LOS	D	D	D	B	F	A
Approach Vol, veh/h	416		1251			640
Approach Delay, s/veh	42.3		34.3			28.8
Approach LOS	D		C			C
Timer - Assigned Phs	1	2		6		8
Phs Duration (G+Y+Rc), s	9.0	75.7		94.7		22.5
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	74.0			93.0		18.0
Max Q Clear Time (g_c+mt), s	65.7			10.4		19.6
Green Ext Time (p_c), s	0.0	5.5		3.2		0.0
Intersection Summary						
HCM 6th Ctrl Delay			34.2			
HCM 6th LOS			C			

HCM 6th Signalized Intersection Summary
20: Lake County Highway (SR-29) & Tubbs Lane

Cumulative +Project PM Mitigated

12/02/2019



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			Y	Y	
Traffic Volume (veh/h)	698	37	92	297	87	236
Future Volume (veh/h)	698	37	92	297	87	236
Initial Q (Q _b), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No		No
Adj Sat Flow, veh/h/ln	1900	1900	1870	1870	1870	1870
Adj Flow Rate, veh/h	759	40	100	323	95	257
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	819	43	144	404	173	467
Arrive On Green	0.49	0.49	0.39	0.39	0.39	0.39
Sat Flow, veh/h	1680	89	212	1045	446	1207
Grp Volume(v), veh/h	800	0	423	0	0	352
Grp Sat Flow(s), veh/h/ln	1770	0	1257	0	0	1653
Q Serve(g_s), s	30.3	0.0	11.9	0.0	0.0	11.9
Cycle Q Clear(g_c), s	30.3	0.0	23.8	0.0	0.0	11.9
Prop In Lane	0.95	0.05	0.24			0.73
Lane Grp Cap(c), veh/h	863	0	548	0	0	639
V/C Ratio(X)	0.93	0.00	0.77	0.00	0.00	0.55
Avail Cap(c_a), veh/h	1123	0	718	0	0	818
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	17.2	0.0	21.4	0.0	0.0	17.1
Incr Delay (d2), s/veh	10.9	0.0	3.8	0.0	0.0	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	3.3	0.0	6.9	0.0	0.0	4.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	28.0	0.0	25.2	0.0	0.0	17.9
LnGrp LOS	C	A	C	A	A	B
Approach Vol, veh/h	800			423	352	
Approach Delay, s/veh	28.0			25.2	17.9	
Approach LOS	C			C	B	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+R _c), s	32.2			39.5	32.2	
Change Period (Y+R _c), s	4.5			4.5	4.5	
Max Green Setting (Gmax), s	35.5			45.5	35.5	
Max Q Clear Time (g_c+l1), s	25.8			32.3	13.9	
Green Ext Time (p_c), s	2.0			2.7	2.3	
Intersection Summary						
HCM 6th Ctrl Delay			25.0			
HCM 6th LOS			C			

HCM 6th Signalized Intersection Summary
21: Foothill Blvd (Hwy-128) & Tubbs Lane

Cumulative +Project PM Mitigated

12/02/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (veh/h)	371	57	67	542	147	132
Future Volume (veh/h)	371	57	67	542	147	132
Initial Q (Q _b), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No	
Adj Sat Flow, veh/h/ln	1900	1900	1870	1870	1870	1870
Adj Flow Rate, veh/h	403	62	73	589	160	143
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	460	71	99	801	305	1045
Arrive On Green	0.30	0.30	0.56	0.56	0.56	0.56
Sat Flow, veh/h	1516	233	178	1434	773	1870
Grp Volume(v), veh/h	466	0	0	662	160	143
Grp Sat Flow(s), veh/h/ln	1753	0	0	1612	773	1870
Q Serve(g_s), s	16.4	0.0	0.0	20.0	12.7	2.4
Cycle Q Clear(g_c), s	16.4	0.0	0.0	20.0	32.8	2.4
Prop In Lane	0.86	0.13		0.89	1.00	
Lane Grp Cap(c), veh/h	531	0	0	901	305	1045
V/C Ratio(X)	0.88	0.00	0.00	0.74	0.53	0.14
Avail Cap(c_a), veh/h	848	0	0	1226	461	1422
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.5	0.0	0.0	10.8	23.0	6.9
Incr Delay (d2), s/veh	6.4	0.0	0.0	1.5	1.4	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	7.1	0.0	0.0	6.1	2.3	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	27.9	0.0	0.0	12.3	24.4	6.9
LnGrp LOS	C	A	A	B	C	A
Approach Vol, veh/h	466		662		303	
Approach Delay, s/veh	27.9		12.3		16.2	
Approach LOS	C		B		B	
Timer - Assigned Phs		2		6		8
Phs Duration (G+Y+R _c), s		40.9		40.9		24.2
Change Period (Y+R _c), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		49.5		49.5		31.5
Max Q Clear Time (g_c+l1), s		22.0		34.8		18.4
Green Ext Time (p_c), s		5.7		1.6		1.3
Intersection Summary						
HCM 6th Ctrl Delay		18.2				
HCM 6th LOS		B				

HCM 6th Signalized Intersection Summary
3: SR-29 & Spruce Grove Road (South)

Cumulative +Project AM Phase2 Mitigated

12/02/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (veh/h)	133	72	736	76	25	610
Future Volume (veh/h)	133	72	736	76	25	610
Initial Q (Q _b), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1870	1870	1870	1870
Adj Flow Rate, veh/h	145	78	800	83	27	663
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	191	103	1022	106	333	1147
Arrive On Green	0.17	0.17	0.61	0.61	0.61	0.61
Sat Flow, veh/h	1106	595	1666	173	629	1870
Grp Volume(v), veh/h	224	0	0	883	27	663
Grp Sat Flow(s), veh/h/ln	1708	0	0	1839	629	1870
Q Serve(g_s), s	5.3	0.0	0.0	15.0	1.4	8.9
Cycle Q Clear(g_c), s	5.3	0.0	0.0	15.0	16.4	8.9
Prop In Lane	0.65	0.35		0.09	1.00	
Lane Grp Cap(c), veh/h	295	0	0	1128	333	1147
V/C Ratio(X)	0.76	0.00	0.00	0.78	0.08	0.58
Avail Cap(c_a), veh/h	914	0	0	2559	822	2602
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.6	0.0	0.0	6.0	12.1	4.9
Incr Delay (d2), s/veh	4.0	0.0	0.0	1.2	0.1	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.1	0.0	0.0	3.2	0.2	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	20.6	0.0	0.0	7.3	12.2	5.3
LnGrp LOS	C	A	A	A	B	A
Approach Vol, veh/h	224		883		690	
Approach Delay, s/veh	20.6		7.3		5.6	
Approach LOS	C		A		A	
Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+R _c), s		30.3			30.3	11.8
Change Period (Y+R _c), s		4.5			4.5	4.5
Max Green Setting (Gmax), s		58.5			58.5	22.5
Max Q Clear Time (g_c+l1), s		17.0			18.4	7.3
Green Ext Time (p_c), s		8.8			5.7	0.6
Intersection Summary						
HCM 6th Ctrl Delay			8.3			
HCM 6th LOS			A			

HCM 6th Signalized Intersection Summary
4: SR-29 & Hidden Valley Road

Cumulative +Project AM Phase2 Mitigated
12/02/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	0	1	129	0	150	1	781	56	47	721	1
Future Volume (veh/h)	3	0	1	129	0	150	1	781	56	47	721	1
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	0	1	140	0	163	1	849	61	51	784	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	10	0	8	253	0	225	3	1000	847	82	1083	918
Arrive On Green	0.01	0.00	0.01	0.14	0.00	0.14	0.00	0.53	0.53	0.05	0.58	0.58
Sat Flow, veh/h	1781	0	1585	1781	0	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	3	0	1	140	0	163	1	849	61	51	784	1
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.1	0.0	0.0	4.8	0.0	6.5	0.0	25.6	1.2	1.9	20.1	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0	4.8	0.0	6.5	0.0	25.6	1.2	1.9	20.1	0.0
Prop In Lane	1.00			1.00	1.00		1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	10	0	8	253	0	225	3	1000	847	82	1083	918
V/C Ratio(X)	0.31	0.00	0.12	0.55	0.00	0.73	0.37	0.85	0.07	0.62	0.72	0.00
Avail Cap(c_a), veh/h	485	0	432	485	0	432	135	1624	1376	232	1726	1463
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.8	0.0	32.7	26.4	0.0	27.1	33.0	13.1	7.4	31.0	10.1	5.9
Incr Delay (d2), s/veh	17.7	0.0	6.0	1.9	0.0	4.4	68.6	2.5	0.0	7.5	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	2.1	0.0	2.6	0.1	9.5	0.4	0.9	6.8	0.0	
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.4	0.0	38.7	28.3	0.0	31.5	101.5	15.6	7.5	38.5	11.0	5.9
LnGrp LOS	D	A	D	C	A	C	F	B	A	D	B	A
Approach Vol, veh/h		4			303			911			836	
Approach Delay, s/veh	47.5				30.1			15.1			12.7	
Approach LOS		D			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+R _c), s	7.5	39.8		4.9	4.6	42.8		13.9				
Change Period (Y+R _c), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax _s)	57.4		18.0	5.0	61.0		18.0					
Max Q Clear Time (g_c+l _q)	27.6		2.1	2.0	22.1			8.5				
Green Ext Time (p _c), s	0.0	7.8		0.0	0.0	7.0		0.9				
Intersection Summary												
HCM 6th Ctrl Delay			16.4									
HCM 6th LOS			B									



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖ ↗ ↘ ↗ ↙ ↘					
Traffic Volume (veh/h)	369	115	704	189	97	786
Future Volume (veh/h)	369	115	704	189	97	786
Initial Q (Q _b), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	401	125	765	205	105	854
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	468	416	898	761	137	1154
Arrive On Green	0.26	0.26	0.48	0.48	0.08	0.62
Sat Flow, veh/h	1781	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	401	125	765	205	105	854
Grp Sat Flow(s),veh/h/ln	1781	1585	1870	1585	1781	1870
Q Serve(g_s), s	16.0	4.7	26.9	5.8	4.3	24.1
Cycle Q Clear(g_c), s	16.0	4.7	26.9	5.8	4.3	24.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	468	416	898	761	137	1154
V/C Ratio(X)	0.86	0.30	0.85	0.27	0.77	0.74
Avail Cap(c_a), veh/h	870	774	1386	1175	348	1864
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.2	22.1	17.1	11.6	33.9	10.1
Incr Delay (d2), s/veh	4.7	0.4	3.3	0.2	8.7	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	1.7	11.1	1.9	2.1	8.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.9	22.5	20.4	11.8	42.6	11.0
LnGrp LOS	C	C	C	B	D	B
Approach Vol, veh/h	526		970			959
Approach Delay, s/veh	28.9		18.5			14.5
Approach LOS	C		B			B
Timer - Assigned Phs	1	2		6		8
Phs Duration (G+Y+Rc), s	0.2	40.4		50.6		24.1
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	55.4			74.5		36.5
Max Q Clear Time (g_c+l), s	28.9			26.1		18.0
Green Ext Time (p_c), s	0.1	7.0		8.3		1.6
Intersection Summary						
HCM 6th Ctrl Delay		19.2				
HCM 6th LOS		B				

HCM 6th Signalized Intersection Summary
7: SR-29 & Butts Canyon Road

Cumulative +Project AM Phase2 Mitigated
12/02/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖ ↗ ↘ ↗ ↙ ↘					
Traffic Volume (veh/h)	228	286	399	156	242	901
Future Volume (veh/h)	228	286	399	156	242	901
Initial Q (Q _b), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	248	311	434	170	263	979
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	367	623	689	584	333	1188
Arrive On Green	0.21	0.21	0.37	0.37	0.19	0.63
Sat Flow, veh/h	1781	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	248	311	434	170	263	979
Grp Sat Flow(s),veh/h/ln	1781	1585	1870	1585	1781	1870
Q Serve(g_s), s	7.3	8.4	10.8	4.3	8.0	22.7
Cycle Q Clear(g_c), s	7.3	8.4	10.8	4.3	8.0	22.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	367	623	689	584	333	1188
V/C Ratio(X)	0.68	0.50	0.63	0.29	0.79	0.82
Avail Cap(c_a), veh/h	582	814	1635	1385	1211	3054
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.7	13.0	14.7	12.6	22.0	7.9
Incr Delay (d2), s/veh	2.2	0.6	1.0	0.3	4.2	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	2.7	4.2	1.4	3.4	6.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.9	13.6	15.7	12.9	26.2	9.4
LnGrp LOS	C	B	B	B	C	A
Approach Vol, veh/h	559		604		1242	
Approach Delay, s/veh	17.7		14.9		13.0	
Approach LOS	B		B		B	
Timer - Assigned Phs	1	2		6		8
Phs Duration (G+Y+Rc), s	5.1	25.4		40.5		16.2
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax)	38.5	49.5		92.5		18.5
Max Q Clear Time (g_c+mt), s	12.8			24.7		10.4
Green Ext Time (p_c), s	0.8	3.6		11.3		1.3
Intersection Summary						
HCM 6th Ctrl Delay		14.6				
HCM 6th LOS		B				

HCM 6th Signalized Intersection Summary
20: Lake County Highway (SR-29) & Tubbs Lane

Cumulative +Project AM Phase2 Mitigated

12/02/2019



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	169	29	20	58	255	596
Future Volume (veh/h)	169	29	20	58	255	596
Initial Q (Q _b), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No		No
Adj Sat Flow, veh/h/ln	1900	1900	1870	1870	1870	1870
Adj Flow Rate, veh/h	184	32	22	63	277	648
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	238	41	164	424	330	771
Arrive On Green	0.16	0.16	0.66	0.66	0.66	0.66
Sat Flow, veh/h	1484	258	113	640	497	1164
Grp Volume(v), veh/h	217	0	85	0	0	925
Grp Sat Flow(s), veh/h/ln	1750	0	753	0	0	1661
Q Serve(g_s), s	6.0	0.0	1.2	0.0	0.0	21.6
Cycle Q Clear(g_c), s	6.0	0.0	22.8	0.0	0.0	21.6
Prop In Lane	0.85	0.15	0.26			0.70
Lane Grp Cap(c), veh/h	280	0	588	0	0	1101
V/C Ratio(X)	0.77	0.00	0.14	0.00	0.00	0.84
Avail Cap(c_a), veh/h	726	0	1213	0	0	1956
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	20.5	0.0	5.7	0.0	0.0	6.5
Incr Delay (d2), s/veh	4.6	0.0	0.1	0.0	0.0	1.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/lr	2.6	0.0	0.2	0.0	0.0	4.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	25.0	0.0	5.8	0.0	0.0	8.3
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	217			85	925	
Approach Delay, s/veh	25.0			5.8	8.3	
Approach LOS	C			A	A	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+R _c), s	38.2		12.6		38.2	
Change Period (Y+R _c), s	4.5		4.5		4.5	
Max Green Setting (Gmax), s	59.9		21.1		59.9	
Max Q Clear Time (g_c+l1), s	24.8		8.0		23.6	
Green Ext Time (p_c), s	0.6		0.5		10.2	
Intersection Summary						
HCM 6th Ctrl Delay		11.1				
HCM 6th LOS		B				

HCM 6th Signalized Intersection Summary
21: Foothill Blvd (Hwy-128) & Tubbs Lane

Cumulative +Project AM Phase2 Mitigated

12/02/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (veh/h)	650	58	85	143	39	103
Future Volume (veh/h)	650	58	85	143	39	103
Initial Q (Q _b), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No	
Adj Sat Flow, veh/h/ln	1900	1900	1870	1870	1870	1870
Adj Flow Rate, veh/h	707	63	92	155	42	112
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	836	74	147	247	315	438
Arrive On Green	0.52	0.52	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1617	144	626	1055	1133	1870
Grp Volume(v), veh/h	771	0	0	247	42	112
Grp Sat Flow(s), veh/h/ln	1764	0	0	1681	1133	1870
Q Serve(g_s), s	13.6	0.0	0.0	4.8	1.2	1.8
Cycle Q Clear(g_c), s	13.6	0.0	0.0	4.8	6.0	1.8
Prop In Lane	0.92	0.08		0.63	1.00	
Lane Grp Cap(c), veh/h	911	0	0	394	315	438
V/C Ratio(X)	0.85	0.00	0.00	0.63	0.13	0.26
Avail Cap(c_a), veh/h	2755	0	0	1139	817	1267
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.5	0.0	0.0	12.4	15.1	11.3
Incr Delay (d2), s/veh	2.3	0.0	0.0	1.6	0.2	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	3.3	0.0	0.0	1.6	0.3	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	9.8	0.0	0.0	14.1	15.3	11.6
LnGrp LOS	A	A	A	B	B	B
Approach Vol, veh/h	771		247		154	
Approach Delay, s/veh	9.8		14.1		12.6	
Approach LOS	A		B		B	
Timer - Assigned Phs		2		6		8
Phs Duration (G+Y+R _c), s		13.0		13.0		23.2
Change Period (Y+R _c), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		24.5		24.5		56.5
Max Q Clear Time (g_c+l1), s		6.8		8.0		15.6
Green Ext Time (p_c), s		1.4		0.6		3.1
Intersection Summary						
HCM 6th Ctrl Delay		11.0				
HCM 6th LOS		B				

HCM 6th Signalized Intersection Summary
3: SR-29 & Spruce Grove Road (South)

Cumulative +Project PM Phase2 Mitigated

12/02/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (veh/h)	95	54	989	171	107	990
Future Volume (veh/h)	95	54	989	171	107	990
Initial Q (Q _b), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1870	1870	1870	1870
Adj Flow Rate, veh/h	103	59	1075	186	116	1076
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	127	73	1199	207	202	1443
Arrive On Green	0.12	0.12	0.77	0.77	0.77	0.77
Sat Flow, veh/h	1078	617	1553	269	440	1870
Grp Volume(v), veh/h	163	0	0	1261	116	1076
Grp Sat Flow(s), veh/h/ln	1705	0	0	1822	440	1870
Q Serve(g_s), s	7.6	0.0	0.0	41.9	21.1	25.2
Cycle Q Clear(g_c), s	7.6	0.0	0.0	41.9	63.0	25.2
Prop In Lane	0.63	0.36		0.15	1.00	
Lane Grp Cap(c), veh/h	201	0	0	1406	202	1443
V/C Ratio(X)	0.81	0.00	0.00	0.90	0.57	0.75
Avail Cap(c_a), veh/h	376	0	0	1406	202	1443
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1	0.0	0.0	6.9	30.5	5.0
Incr Delay (d2), s/veh	7.6	0.0	0.0	8.0	3.9	2.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	3.5	0.0	0.0	12.5	2.4	6.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	42.7	0.0	0.0	14.9	34.4	7.2
LnGrp LOS	D	A	A	B	C	A
Approach Vol, veh/h	163		1261		1192	
Approach Delay, s/veh	42.7		14.9		9.8	
Approach LOS	D		B		A	
Timer - Assigned Phs		2		6		8
Phs Duration (G+Y+R _c), s		67.5		67.5		14.1
Change Period (Y+R _c), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		63.0		63.0		18.0
Max Q Clear Time (g_c+l1), s		43.9		65.0		9.6
Green Ext Time (p_c), s		12.0		0.0		0.3
Intersection Summary						
HCM 6th Ctrl Delay			14.3			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary
4: SR-29 & Hidden Valley Road

Cumulative +Project PM Phase2 Mitigated
12/02/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	1	7	86	0	95	2	1103	133	148	936	1
Future Volume (veh/h)	3	1	7	86	0	95	2	1103	133	148	936	1
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	1	8	93	0	103	2	1199	145	161	1017	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	19	6	23	160	0	142	5	1147	972	161	1311	1111
Arrive On Green	0.01	0.01	0.01	0.09	0.00	0.09	0.00	0.61	0.61	0.09	0.70	0.70
Sat Flow, veh/h	1352	451	1585	1781	0	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	4	0	8	93	0	103	2	1199	145	161	1017	1
Grp Sat Flow(s),veh/h/ln1803	0	1585	1781	0	1585	1781	1870	1585	1781	1870	1585	
Q Serve(g_s), s	0.2	0.0	0.5	4.7	0.0	5.9	0.1	57.5	3.7	8.5	33.4	0.0
Cycle Q Clear(g_c), s	0.2	0.0	0.5	4.7	0.0	5.9	0.1	57.5	3.7	8.5	33.4	0.0
Prop In Lane	0.75		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	26	0	23	160	0	142	5	1147	972	161	1311	1111
V/C Ratio(X)	0.16	0.00	0.35	0.58	0.00	0.72	0.41	1.05	0.15	1.00	0.78	0.00
Avail Cap(c_a), veh/h	346	0	304	342	0	304	95	1147	972	161	1311	1111
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.7	0.0	45.8	41.0	0.0	41.5	46.7	18.1	7.7	42.6	9.2	4.2
Incr Delay (d2), s/veh	2.7	0.0	9.1	3.3	0.0	6.8	48.3	39.2	0.1	69.9	3.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.2	2.2	0.0	0.3	0.1	33.8	1.2	6.8	12.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.4	0.0	54.8	44.3	0.0	48.3	95.0	57.4	7.8	112.5	12.2	4.2
LnGrp LOS	D	A	D	D	A	D	F	F	A	F	B	A
Approach Vol, veh/h		12			196			1346			1179	
Approach Delay, s/veh		52.7			46.4			52.1			25.9	
Approach LOS		D			D			D			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.0	62.0		5.8	4.8	70.2		12.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	57.5		18.0	5.0	61.0		18.0				
Max Q Clear Time (g_c+M), s	5.5	59.5		2.5	2.1	35.4		7.9				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	9.7		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			40.4									
HCM 6th LOS			D									

HCM 6th Signalized Intersection Summary
5: SR-29 & Hartmann Road

Cumulative +Project PM Phase2 Mitigated
12/02/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖ ↗ ↘ ↗ ↙ ↘					
Traffic Volume (veh/h)	149	98	1131	389	117	866
Future Volume (veh/h)	149	98	1131	389	117	866
Initial Q (Q _b), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	162	107	1229	423	127	941
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	197	175	1284	1089	146	1513
Arrive On Green	0.11	0.11	0.69	0.69	0.08	0.81
Sat Flow, veh/h	1781	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	162	107	1229	423	127	941
Grp Sat Flow(s),veh/h/ln	1781	1585	1870	1585	1781	1870
Q Serve(g_s), s	10.0	7.2	67.2	12.8	7.9	21.6
Cycle Q Clear(g_c), s	10.0	7.2	67.2	12.8	7.9	21.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	197	175	1284	1089	146	1513
V/C Ratio(X)	0.82	0.61	0.96	0.39	0.87	0.62
Avail Cap(c_a), veh/h	286	255	1324	1122	146	1553
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.7	47.5	16.0	7.5	50.8	4.1
Incr Delay (d2), s/veh	11.8	3.4	15.4	0.2	38.8	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	3.0	30.1	4.0	5.1	6.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	60.5	50.9	31.4	7.7	89.6	4.9
LnGrp LOS	E	D	C	A	F	A
Approach Vol, veh/h	269		1652		1068	
Approach Delay, s/veh	56.7		25.3		14.9	
Approach LOS	E		C		B	
Timer - Assigned Phs	1	2		6		8
Phs Duration (G+Y+Rc), s	3.7	81.4		95.1		16.9
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	79.3			93.0		18.0
Max Q Clear Time (g_c+l), s	69.2			23.6		12.0
Green Ext Time (p_c), s	0.0	7.7		10.3		0.4
Intersection Summary						
HCM 6th Ctrl Delay			24.4			
HCM 6th LOS			C			

HCM 6th Signalized Intersection Summary
7: SR-29 & Butts Canyon Road

Cumulative +Project PM Phase2 Mitigated
12/02/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖ ↗ ↘ ↗ ↙ ↘					
Traffic Volume (veh/h)	280	423	999	363	430	408
Future Volume (veh/h)	280	423	999	363	430	408
Initial Q (Q _b), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	304	460	1086	395	467	443
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	275	594	959	1057	393	1442
Arrive On Green	0.15	0.15	0.51	0.51	0.22	0.77
Sat Flow, veh/h	1781	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	304	460	1086	395	467	443
Grp Sat Flow(s),veh/h/ln	1781	1585	1870	1585	1781	1870
Q Serve(g_s), s	18.5	18.5	61.5	13.3	26.5	8.5
Cycle Q Clear(g_c), s	18.5	18.5	61.5	13.3	26.5	8.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	275	594	959	1057	393	1442
V/C Ratio(X)	1.11	0.77	1.13	0.37	1.19	0.31
Avail Cap(c_a), veh/h	275	594	959	1057	393	1442
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.8	33.0	29.3	8.9	46.8	4.1
Incr Delay (d2), s/veh	86.1	6.3	73.0	0.2	107.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	12.7	45.7	7.1	23.3	2.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	136.8	39.3	102.2	9.1	153.8	4.2
LnGrp LOS	F	D	F	A	F	A
Approach Vol, veh/h	764		1481			910
Approach Delay, s/veh	78.1		77.4			81.0
Approach LOS	E		E			F
Timer - Assigned Phs	1	2		6		8
Phs Duration (G+Y+Rc), s	31.0	66.0		97.0		23.0
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	26.5	61.5		92.5		18.5
Max Q Clear Time (g_c+Dq), s	20.5	63.5		10.5		20.5
Green Ext Time (p_c), s	0.0	0.0		3.2		0.0
Intersection Summary						
HCM 6th Ctrl Delay		78.6				
HCM 6th LOS		E				

HCM 6th Signalized Intersection Summary
20: Lake County Highway (SR-29) & Tubbs Lane

Cumulative +Project PM Phase2 Mitigated

12/02/2019



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	768	37	92	325	107	284
Future Volume (veh/h)	768	37	92	325	107	284
Initial Q (Q _b), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No		No
Adj Sat Flow, veh/h/ln	1900	1900	1870	1870	1870	1870
Adj Flow Rate, veh/h	835	40	100	353	116	309
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	842	40	115	355	181	482
Arrive On Green	0.50	0.50	0.40	0.40	0.40	0.40
Sat Flow, veh/h	1688	81	165	885	451	1202
Grp Volume(v), veh/h	876	0	453	0	0	425
Grp Sat Flow(s), veh/h/ln	1771	0	1050	0	0	1654
Q Serve(g_s), s	44.1	0.0	17.5	0.0	0.0	18.6
Cycle Q Clear(g_c), s	44.1	0.0	36.1	0.0	0.0	18.6
Prop In Lane	0.95	0.05	0.22			0.73
Lane Grp Cap(c), veh/h	884	0	470	0	0	663
V/C Ratio(X)	0.99	0.00	0.96	0.00	0.00	0.64
Avail Cap(c_a), veh/h	884	0	470	0	0	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	22.4	0.0	30.4	0.0	0.0	21.7
Incr Delay (d2), s/veh	28.0	0.0	32.3	0.0	0.0	2.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh	13.6	0.0	14.0	0.0	0.0	7.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	50.4	0.0	62.7	0.0	0.0	23.8
LnGrp LOS	D	A	E	A	A	C
Approach Vol, veh/h	876			453	425	
Approach Delay, s/veh	50.4			62.7	23.8	
Approach LOS	D			E	C	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+R _c), s	40.6			49.4		40.6
Change Period (Y+R _c), s	4.5			4.5		4.5
Max Green Setting (Gmax), s	36.1			44.9		36.1
Max Q Clear Time (g_c+l1), s	38.1			46.1		20.6
Green Ext Time (p_c), s	0.0			0.0		2.5
Intersection Summary						
HCM 6th Ctrl Delay			47.1			
HCM 6th LOS			D			

HCM 6th Signalized Intersection Summary
21: Foothill Blvd (Hwy-128) & Tubbs Lane

Cumulative +Project PM Phase2 Mitigated

12/02/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (veh/h)	411	65	67	601	158	132
Future Volume (veh/h)	411	65	67	601	158	132
Initial Q (Q _b), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No	
Adj Sat Flow, veh/h/ln	1900	1900	1870	1870	1870	1870
Adj Flow Rate, veh/h	447	71	73	653	172	143
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	480	76	94	838	252	1083
Arrive On Green	0.32	0.32	0.58	0.58	0.58	0.58
Sat Flow, veh/h	1509	240	162	1448	728	1870
Grp Volume(v), veh/h	519	0	0	726	172	143
Grp Sat Flow(s), veh/h/ln	1752	0	0	1610	728	1870
Q Serve(g_s), s	25.0	0.0	0.0	30.2	20.3	3.0
Cycle Q Clear(g_c), s	25.0	0.0	0.0	30.2	50.5	3.0
Prop In Lane	0.86	0.14		0.90	1.00	
Lane Grp Cap(c), veh/h	557	0	0	932	252	1083
V/C Ratio(X)	0.93	0.00	0.00	0.78	0.68	0.13
Avail Cap(c_a), veh/h	613	0	0	932	252	1083
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.8	0.0	0.0	14.1	33.6	8.4
Incr Delay (d2), s/veh	20.3	0.0	0.0	4.3	7.3	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	3.2	0.0	0.0	10.8	4.0	1.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	49.1	0.0	0.0	18.3	40.9	8.4
LnGrp LOS	D	A	A	B	D	A
Approach Vol, veh/h	519		726			315
Approach Delay, s/veh	49.1		18.3			26.1
Approach LOS	D		B			C
Timer - Assigned Phs		2		6		8
Phs Duration (G+Y+R _c), s		55.0		55.0		32.2
Change Period (Y+R _c), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		50.5		50.5		30.5
Max Q Clear Time (g_c+l1), s		32.2		52.5		27.0
Green Ext Time (p_c), s		5.6		0.0		0.7
Intersection Summary						
HCM 6th Ctrl Delay			30.2			
HCM 6th LOS			C			