Draft Traffic Impact Analysis Report

10780 East Bennett Street

Residential and Light Industrial Development

City of Grass Valley, California

June 29, 2022

TJKM

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EXECUTIVE SUMMARY

This report summarizes the results of the Traffic Impact Study (TIS) conducted for the proposed residential and light industrial development located at 10780 East Bennett Street in the City of Grass Valley. The street name changes along the frontage of this development; on the western side it is officially named East Bennett Street, then changing to East Bennett Road. For the purposes of this study report East Bennett Street is used throughout. The proposed project would construct 258 dwelling units: 130 single-family homes and 128 townhomes and in addition, a light industrial area of approximately 4.3 acers would be constructed on a site that is currently wooded and grasslands. Access to the project site would be provided by connections to East Bennett Street and Union Jack Street. On East Bennett Street there would be one connection each for residential and for light industrial but no interconnection on-site between residential and industrial uses. Residential uses would also have an access connection to Union Jack Street. The applicant is willing to provide an emergency access to adjacent his property line north of the project site such that emergency vehicles could also access via Railroad Avenue.

The purpose of this report is to provide summaries of changes in vehicle miles traveled (VMT) and traffic impacts on the surrounding transportation system with the proposed project. The VMT analysis is based on the methodology adopted by the City of Grass Valley and Nevada County. To evaluate the effects on the transportation infrastructure due to the addition of traffic from the proposed project, an LOS analysis was conducted to determine consistency with City of Grass Valley and Nevada County plans and standards.

Vehicle Miles Traveled

The existing base year per capita VMT is 0 since currently there are no housing developments in either of the TAZs. The insignificance threshold for VMT in Grass Valley is 12.8 for VMT per capita, and 15.9 for VMT per job. These values are derived from the 2018 base year NCTC model and is calculated by reducing the Grass Valley average of 14.8 and 18.6 respectively. Adding 325 housing units and 530 residents increased the per capita residential VMT in TAZ #453 from 0 to 6.02, and in TAZ #455 from 0 to 16.1. Taking the average of the two TAZs results in a final VMT per capita value of **11.06**. Although there is an increase in residential VMT per capita once the project is added in the TAZ, 11.06 is still lower than the 14.3 % VMT threshold of the Grass Valley average, which is 12.8. The proposed E Bennett Street development is expected to have a **less-than-significant** VMT impact for the residential portion.

The existing base year per job VMT for TAZ #453 is 3.0. Adding in 187,000 square feet of light industrial usage increases the per job VMT to 4.8. Although there is an increase in commercial VMT per job once the project is added in the TAZ, 4.8 is still lower than the 14.3 % VMT threshold of the Grass Valley average, which is 15.9. The proposed E Bennett Street development is expected to have a **less-than-significant** VMT impact for the commercial portion (light industrial land use).

Project Trip Generation

TJKM developed estimated project trip generation for the proposed project based on published trip generation rates from the ITE publication *Trip Generation (11th Edition)*. TJKM used published trip rates for

the ITE land use Single Family Detached Housing (ITE Code 210), Multifamily Townhomes (ITE Code 220) and General Light Industrial (ITE Code 110) for this project and evaluated a project size of 258 dwelling units and 187,310 square feet of industrial building area. The proposed project is expected to generate 3,000 total daily trips, including 281a.m. peak hour trips (158 in, 123 out) and 309 p.m. peak hour trips (135 in, 174 out).

Existing Conditions

Under this scenario, all of the study intersections operate within applicable jurisdictional standards during both peak hours except for the Idaho Maryland Road/EB SR 20 Ramps, which is operating at LOS E during the p.m. peak hour.

Existing plus Project Conditions

Under this scenario, all of the study intersections would continue to operate within applicable jurisdictional standards during both a.m. and p.m. peak hours except for the intersections of Idaho Maryland Road/EB SR 20 Ramps and Bennett Street/Tinloy Street-SR 20 WB Ramps.

Cumulative Conditions

The Cumulative No-Project Conditions analysis forecasts how the study area's transportation system would operate with the growth and changes of the surrounding community by the year 2035. Under this scenario, all of the study intersections operate within applicable jurisdictional standards during both a.m. and p.m. peak hours.

Cumulative plus Project Conditions

Under this scenario, all of the study intersections would continue to operate within applicable jurisdictional standards during both a.m. and p.m. peak. The project would be consistent with level of service standards set forth under the City of Grass Valley General Plan and Nevada County Transportation Commission policy.

Site Access and On-Site Circulation

TJKM concluded that the site plan will operate acceptably and provide adequate connection to existing streets and circulation within the site. The proposed project does not conflict with existing and planned pedestrian or bicycle facilities. Site access and circulation for vehicles, pedestrians, and bicycles are considered **adequate**.

Parking

The proposed project would construct two-car garages for Single Family homes and townhomes with driveway aprons for each dwelling unit, satisfying City requirements. For industrial land use, one parking space for each 200 square feet of office area would be provided. The new internal roadways would not provide on-street parking spaces. The proposed parking supply would therefore be more than **adequate** under City of Grass Valley requirements and would not produce any parking impacts on surrounding parcels or roadways.

Recommendations

TJKM recommends the following:

- Build sidewalk along the north side of East Bennett Street to form a pedestrian connection between the proposed development and existing established residential areas adjacent and nearby.
- On signing and striping plan, include marked crosswalks at internal intersections with curb ramps.

1.0 INTRODUCTION

This report summarizes the results of the Traffic Impact Study (TIS) conducted for the proposed residential and light industrial development located at 10780 East Bennett Street in the City of Grass Valley. The proposed project would construct 258 dwelling units and 187,310 square feet of light industrial uses on a site that is currently wooded and grassland. Access to the project site would be provided by two connections to East Bennett Street and one to Union Jack Street. An additional access that would be only for emergency vehicles is possible via Railroad Street, assuming the cooperation of an adjacent property owner.

The western portion of the project site is currently within the city limits of Grass Valley while the remainder is in the near term Grass Valley sphere of influence area in unincorporated Nevada County.

This chapter discusses the TIS purpose, project study area, and analysis scenarios. **Figure 1** shows the study area and project site location. **Figure 2** shows the project site plan, dated May 18, 2022.

1.1 Study Purpose

The purpose of this report is to provide summaries of changes in vehicle miles traveled (VMT) and traffic impacts on the surrounding transportation system with the proposed project. The VMT analysis is based on the methodology adopted by the Nevada County Transportation Commission (NCTC), the City of Grass Valley and Nevada County. To evaluate the effects on the transportation infrastructure due to the addition of traffic from the proposed project, an LOS analysis was conducted to determine consistency with NCTC, the City of Grass Valley and Nevada County plans and standards.

1.2 Study Intersections and Roadway Segments

TJKM evaluated traffic conditions at nine study intersections during the a.m. and p.m. peak hours for a typical weekday. The study intersections were selected based on TJKM's working knowledge of the area with input and approval from City of Grass Valley staff. The peak periods observed were between 7:00-9:00 a.m. and 4:00-6:00 p.m. Roads that have dual names or state route numbers are indicated with a "/". The study intersections and associated traffic controls are as follows:

1. Railroad Avenue & Idaho Maryland Road (All-way stop control)
2. Idaho Maryland Road & Eastbound State Route (SR) 20 On & Off-Ramps (All-way stop control)
3. Bennett Street & Ophir Street (Two-way stop on eastbound & westbound approaches)
4. Bennett Street & Hansen Way & Eastbound SR 20 On-ramp (All-way Stop control)
5. Bennett Street & Tinloy Street & Westbound SR 20 Off-ramp (Stop on westbound ramp and northbound Bennett Street approaches)
6. Ophir Street & SR 174 / Colfax Avenue (Stop on Ophir Street approach only)
7. Neal Street / Colfax Avenue / SR 174 & Hansen Way (Stop on westbound and northbound approaches only)

8. Neal Street & Tinloy Street (traffic signal control)
9. Neal Street & South Auburn Street (traffic signal control)
10. East Bennett Street & (proposed) Residential Site Access (One-way Stop control) [Project Driveway]
11. East Bennett Street & (proposed) Light Industrial Site Access (One-way Stop control) [Project Driveway]

For intersections 1, 2, 4, and 5, existing a.m. and p.m. peak period traffic counts were utilized from the Idaho-Maryland Mine Project's traffic study. The traffic counts for Idaho-Maryland project were done in August 2019. The City had concurred that counts at these intersections collected in 2019 are acceptable to use for this project. For the remaining intersections 3, 6, 7, 8 and 9, TJKM conducted new a.m. and p.m. peak period traffic counts in February 2022.

TJKM also collected one-day Average Daily Traffic (ADT) counts in February 2022 at the following locations:

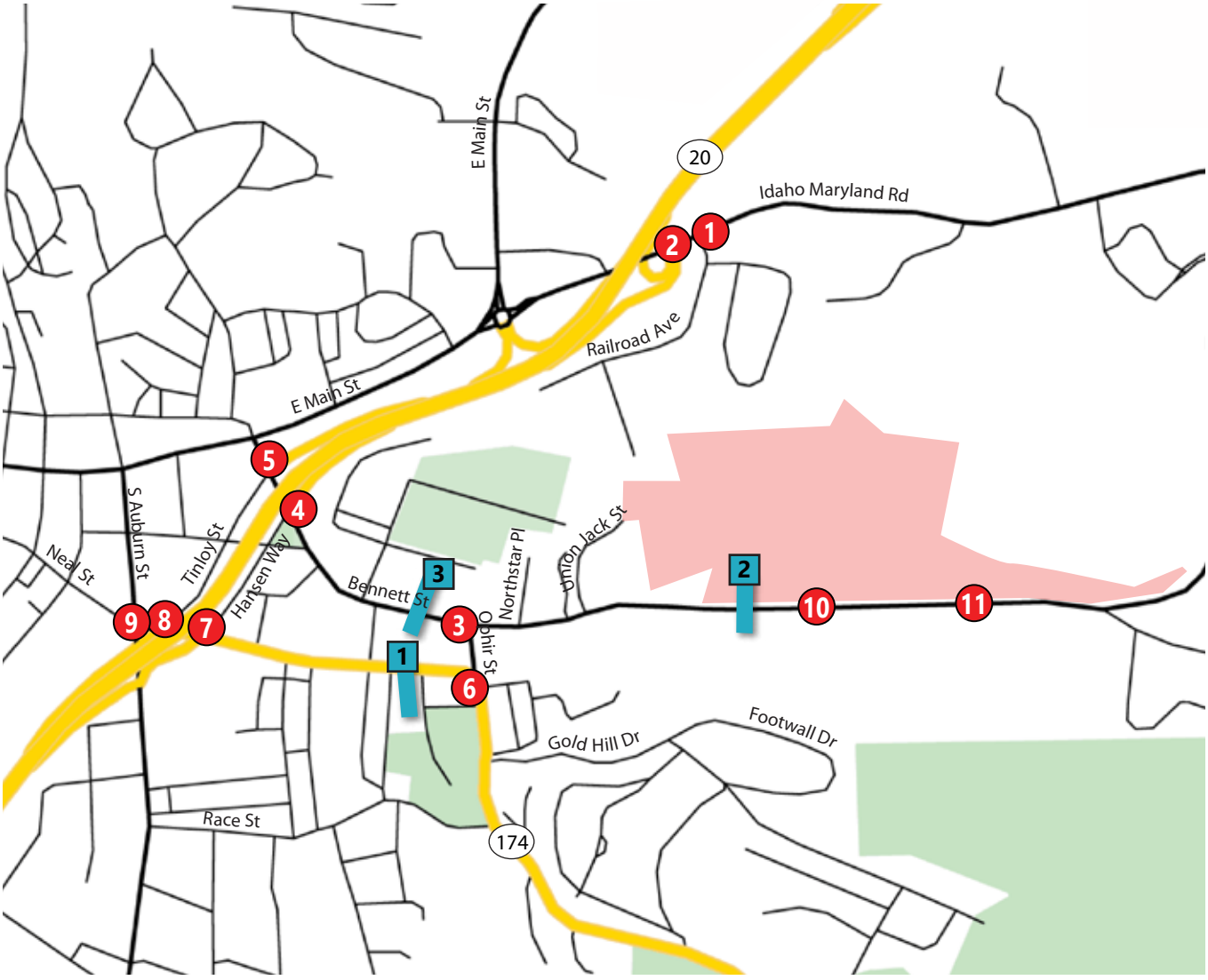
1. SR 174 between Hansen Way & Ophir Street
2. Bennett Street East of Durham School Services
3. Bennett Street between Ophir Street & Hansen Way

1.3 Study Scenarios

The roadway operations analysis addresses the following six traffic scenarios:

- **Existing Conditions** – This scenario evaluates the study intersections based on adjusted existing traffic volumes, lane geometry and traffic controls.
- **Existing plus Project Conditions** – This scenario is identical to Existing Conditions, but with the addition of traffic from the proposed project.
- **Cumulative Conditions (2035)** – This scenario considers the development of the city and surrounding communities to the year 2035, projecting existing traffic volumes to the year 2035 using a compounding annual growth factor of 1% percent per year. This growth factor was derived from 2035 volumes in the immediate study area, using the current Nevada County travel demand model for baseline year 2018 and horizon year 2035.
- **Cumulative plus Project Conditions** – This scenario is identical to Cumulative Conditions, but with the addition of traffic from the proposed project.

Figure 1: Vicinity Map



LEGEND

- Project Site
- Study Intersection
- Study Segment

TJKM

Figure 2: Site Plan

2.0 STUDY METHODOLOGY

Traffic impacts related to the proposed project were evaluated for both compliance with applicable regulatory documents and environmental significance as defined in the California Environmental Quality Act (CEQA). The CEQA analysis was conducted in accordance with the *Technical Advisory On Evaluating Transportation Impacts In CEQA* published by the Governor's Office of Planning and Research (OPR) describing the VMT methodology adopted by the Nevada County Transportation Commission (NCTC). As of July 1, 2020, intersection level of service (LOS) can no longer be used to determine significant CEQA impacts. However, an LOS analysis was conducted to determine consistency with City of Grass Valley, Nevada County and NCTC plans and standards.

2.1 Vehicle Miles Traveled

This study evaluates project-related VMT as outlined in the adopted NCTC VMT methodology. The methodology and implementation guidelines were adopted by NCTC in September 2019. Since the City of Grass Valley has not adopted VMT procedures or standards, NCTC standards were used.

The OPR *Technical Advisory* (December 2018) provides guidance to analysts and local jurisdictions for implementing VMT as a metric for determining the transportation impact for land use projects. The OPR guidelines state that for analysis purposes, "VMT" refers to automobile VMT, specifically passenger vehicles and light trucks. Heavy truck traffic is typically excluded.

The NCTC guidelines include a screening process that describes five scenarios in which a project would be exempted from a VMT analysis requirement: 1) projects exempt from CEQA analysis, 2) small projects, 3) local serving projects, 4) projects in transit priority areas, and 5) projects in low VMT areas. It should be noted that even if a project satisfies one or more of the screening criteria, lead agencies may still require a VMT analysis if there is evidence that the project has characteristics that might lead to a significant amount of VMT. The project does not satisfy the requirements for screening criteria 1-4. A project or plan's VMT is considered less than significant if:

- The project or plan total weekday VMT per service population is equal to or less than 14.3% below the subarea mean under baseline conditions, or the project reduces the total VMT per service population for the subarea; AND
- The project or plan is consistent with the General Plan and the Nevada County Regional Transportation Plan.

2.2 Level of Service Analysis Methodology

Although Level of Service (LOS) is no longer relevant to CEQA, LOS can be used to determine conformity with an adopted general plan or congestion management program. LOS is a qualitative measure that describes operational conditions as they relate to the traffic stream and perceptions by motorists and passengers. The LOS generally describes these conditions in terms of such factors as speed and travel time, delays, freedom to maneuver, traffic interruptions, comfort, convenience, and safety. The operational LOS are given letter designations from A to F, with A representing the best operating conditions (free-

flow) and F the worst (severely congested flow with high delays). Intersections generally are the capacity-controlling locations with respect to traffic operations on arterial and collector streets in urban areas.

Signalized Intersections

The study intersections under traffic signal control were analyzed using the 6th Edition Highway Capacity Manual (HCM) Operations Methodology for signalized intersections described in Chapter 18 (HCM 6th Ed.). This methodology determines LOS based on average control delay per vehicle for the overall intersection during peak hour intersection operating conditions. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The average control delay for signalized intersections was calculated using Synchro 11 analysis software and was correlated to a LOS designation as shown in **Table 1**.

Unsignalized Intersections

The study intersections under stop control (unsignalized) were analyzed using the 6th Edition HCM Operations Methodology for unsignalized intersections described in Chapter 20 (HCM 6th Ed.). LOS ratings for stop-sign controlled intersections are based on the average control delay expressed in seconds per vehicle. At the side street, one-way or two-way stop controlled intersections, the control delay is calculated for each movement, not for the intersection as a whole. For approaches composed of a single lane, the control delay is computed as the average of all movements in that lane. The weighted average delay for the entire intersections is presented for all-way stop controlled intersections. The average control delay for unsignalized intersections was calculated using Synchro/SimTraffic 11 analysis software depending on the intersection characteristics and was correlated to a LOS designation as shown in **Table 2**.

SimTraffic simulation software was utilized at the following intersections for the analysis based on the non-standard traffic control conditions that Synchro cannot analyze:

- Bennett Street & Ophir Street (Two-way stop on eastbound & westbound approaches)
- Bennett Street & Tinloy Street & Westbound SR 20 Off-ramp (Stop on westbound ramp and northbound Bennett Street approaches) [Under Existing and Existing plus Project Conditions Only]
- Ophir Street & SR 174 / Colfax Avenue (Stop on Ophir Street approach only)
- Neal Street / Colfax Avenue / SR 174 & Hansen Way (Stop on westbound and northbound approaches only)

The Synchro/SimTraffic software is a stochastic model, i.e. randomness is present when running the simulations. The results will vary within each scenario and between scenarios. This may result in some intersections having lower delays in the 'Plus Project' scenarios than in the 'No Project' scenarios. This is a normal occurrence for stochastic models, and it is not unexpected that delays or queues could improve at one intersection while increasing at other intersections. The changes typically should be reasonable; a substantial reduction in delay should not be anticipated.

Table 1: Signalized Intersection Delay and LOS Definitions

Level of Service	Description	Average Control Delay
A	Signal progression is extremely favorable. Most vehicles arrive during the green phase and do not stop at all. Short cycle lengths may also contribute to the very low vehicle delay.	10.0 or less
B	Operations characterized by good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average vehicle delay.	10.1 to 20.0
C	Higher delays may result from fair signal progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, though may still pass through the intersection without stopping.	20.1 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable signal progression, long cycle lengths, or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	This is considered to be the limit of acceptable delay. These high delay values generally indicate poor signal progression, long cycle lengths, and high volume-to-capacity (V/C) ratios. Individual cycle failures occur frequently.	55.1 to 80.0
F	This level of delay is considered unacceptable by most drivers. This condition often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major-contributing causes of such delay levels.	greater than 80.0

Source: Highway Capacity Manual 6th Ed., Chapter 18 (Transportation Research Board, 2010)
Average Control Delay per Vehicle in seconds

Table 2: Unsignalized Intersection Delay and LOS Definitions

Level of Service	Description	Average Control Delay
A	Little or no traffic delay	≤10
B	Short Traffic delays	>10 – 15
C	Average traffic delays	>15 – 25
D	Long traffic delays	>25 – 35
E	Very long traffic delays	>35 – 50
F	Extreme traffic delays	>50

Source: Highway Capacity Manual 6th Ed., Chapter 20 (Transportation Research Board, 2010)
Average Control Delay per Vehicle in seconds

2.3 Level of Service Standards

Although level of service is no longer used for identifying impacts under CEQA, level of service analysis is still used for determining consistency with adopted agency plans and standards. Where standards refer to significant environmental impacts, this analysis instead identifies these as significant inconsistencies with adopted plans.

Nevada County

Nevada County identifies LOS D or better as the acceptable Level of Service at intersections and roadways in community regions and LOS C in rural regions. All intersections and roadways are within the Grass Valley Community Region as identified in the County's General Plan.

Under project conditions, a traffic impact is considered to adversely affect an intersection or roadway segment if the conditions change from acceptable to unacceptable Levels of Service or a project adds traffic to an intersection or roadway segment already operating at unacceptable LOS.

The Nevada County General Plan Policy LU-4.1.6 states "Relative to the State highway system, Nevada County recognizes the major funding limitations that exist within the State system and finds that as a matter of policy, additional growth and development may be allowed within the County, notwithstanding the adverse impacts which may result in the short term by this growth and development."

Grass Valley

The City of Grass Valley identifies LOS D or better as the acceptable Level of Service at intersections and roadways. Under project conditions, a traffic impact is considered to adversely affect an intersection if the conditions change from acceptable to unacceptable Levels of Service or a project adds traffic to an intersection already operating at unacceptable LOS. The City allows LOS E conditions at the SR 49 SB Ramp / Bennett Road intersection.

Caltrans

The Caltrans Guide for the Preparation of Traffic Impact Studies (December 2002) states the following: "Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on State highway facilities. Caltrans acknowledges that this may not be always feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. Based on the recently

approved Idaho-Maryland Mine traffic study in Grass Valley the LOS D threshold was used as the acceptable LOS and will be used for Caltrans facilities.

Intersection Queuing Analysis

The quality of traffic flow can also be affected by queuing at signalized intersections. For this study, the lengths of peak period queues have been identified and compared to available storage in order to determine whether spillover from turn lanes can affect adjoining travel or extend through adjacent intersections. 95th percentile queue lengths are reported as part of the Synchro, Synchro/SimTraffic analysis. Those locations where the 95th percentile queue exceeds the available storage have also been noted.

Traffic Signal Warrants

The extent to which existing or projected traffic volumes may justify signalization at unsignalized intersections has been determined based on consideration of traffic signal warrant presented in the Manual of Uniform Traffic Control Devices, 2014. For this analysis, the volume thresholds associated with Warrant 3 (Peak Hour Volume) have been assessed. The meeting of a traffic signal warrant does not, in itself, require installation of a traffic signal but serves as a method to identify a location where further analysis is required.

3.0 EXISTING CONDITIONS

This section describes existing conditions in the immediate project site vicinity, including roadway facilities, bicycle and pedestrian facilities, and available transit service. In addition, existing traffic volumes and operations are presented for the study intersections, including the results of LOS calculations.

3.1 Existing Setting and Roadway System

Relevant roadways in the project vicinity are discussed below and shown in **Figure 1**:

East Bennett Street is a two to three-lane, east-west major collector street. It has sidewalks on the north side and a two-way center left-turn in some places. Lanes are generally 12-feet wide with varying width paved and unpaved shoulders. The roadway is classified as a Class III Highway with rolling terrain and is posted at 35 mph. Average Daily Traffic (ADT) volumes between Hansen Way and Ophir Street is approximately 3,158 bi-directionally and ADT between union Jack Street and Project Driveway is approximately 1,819 bi-directionally .

Colfax Avenue / SR 174 is a two-lane, east-west "other principal arterial" street. It has sidewalks and on-street parking is permitted on both sides. The posted speed limit is 25 mph.

State Route 20 is a four-lane, median-divided, east-west "other principal arterial" highway with a posted speed limit of 60 mph. Access is limited to on and off ramps. To and from the east on SR 20, project traffic is most likely to use the on and off-ramps at East Bennett Street. From the west, SR 20 traffic destined for the project site is most likely to exit at Colfax Avenue State Route 174, then remain on Hansen Way to East Bennett Street, Bank Street or they may turn right on Colfax Avenue, then left on Ophir Street to East Bennett Street. Project site traffic destined westbound on SR 20 may turn left from East Bennett Street to Ophir Street, then right on Colfax Avenue to access the SR 20 westbound on-ramp there.

Hansen Way is a one-way northbound, two-lane "other principal arterial" street. It forms part of the ramp connection network for SR 20 since the ramps are split between different cross streets. The posted speed limit is 30 mph. There are no sidewalks and access to abutting parcels of land is not permitted.

Tinloy Street is a one-way southbound, two-lane "other principal arterial" street. Like Hansen Way, Tinloy Street forms part of the ramp connection network for SR 20. The posted speed limit is 30 mph. There is a sidewalk and on-street parking to serve and support a multi-bay transit hub (transit transfer facility) owned by Nevada County Transit for the operation of Gold State Transit bus service.

Ophir Street is a short, two-lane, north-south "local" street that connects East Bennett Street and the project site to State Route 174 / Colfax Avenue. The posted speed limit is 25 mph, sidewalk exists on both sides, and parking is permitted on Ophir Street.

Idaho Maryland Road is a two to three-lane, east-west major collector street serving areas north of the project site. The posted speed limit is 30 mph, and sidewalk is provided on the north side of the street.

3.2 Existing Pedestrian Facilities

Walkability is defined as the ability to travel easily and safely between various origins and destinations without having to rely on automobiles or other motorized travel. The ideal "walkable" community includes wide sidewalks, a mix of land uses such as residential, employment, and shopping opportunities, a limited number of conflict points with vehicle traffic, and easy access to transit facilities and services.

Pedestrian facilities consist of crosswalks, sidewalks, pedestrian signals, and off-street paths, which provide safe and convenient routes for pedestrians to access the destinations such as institutions, businesses, public transportation, and recreation facilities.

In the project vicinity, most of the relevant streets have sidewalk on at least one side. There are marked crosswalks in some locations, but not all. Each of the signalized study intersections is equipped with Walk / Don't Walk pedestrian signal heads, pedestrian push buttons and marked crosswalks.

3.3 Existing Bicycle Facilities

Bicycle paths, lanes and routes are typical examples of bicycle transportation facilities, which are defined by Caltrans as being in one of the following four classes:

1. Class I Multiuse Trail – a completely separated facility designed for the exclusive use of bicyclists and pedestrians with crossing points minimized.
2. Class II Bike Lane –a 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.
3. Class III Bike Route –a route designated by signs or pavement markings and shared with pedestrians and motorists.
4. Class IV Separated Bikeway – an on-street facility reserved for use by bicyclists, with physical separation between the bikeway and travel lanes. Physical separation consists of vertical elements that may include curbs, landscaping, bollards, or parking lanes.

None of the study intersections or segments between study intersections have bikeways as described above. Some streets have edge striping that leaves a few feet of pavement outside the edge line, but none are marked for bicycles; some are used for on-street parking.

3.4 Existing Transit Facilities and Service

The County of Nevada directly operates Gold Country Stage, a fixed-route bus service available to the general public. The service operates within Grass Valley, Nevada City, and surrounding communities. Regional service is available to Auburn. Service is available on weekdays from 7:15 a.m. through 8:00 p.m. and limited Saturday service from 7:15 a.m. through 5:30 p.m. The service does not operate on Sunday or designated holidays.

All seven bus routes serve the Transit Transfer Center on Tinloy Street at East Bennett Street where passengers can transfer to other routes. Route 3 provides hourly service with a bus stop that is close to

the project site. The existing bus stop is at the intersection of East Bennett Street & Ophir Street, approximately one-quarter of a mile from the project site. **Table 3** summarizes existing bus service in the project vicinity.

Table 3: Existing Bus Services

Route #	From	To	Weekdays		Saturday	
			Operating Hours	Headway (minutes)	Operating Hours	Headway (minutes)
1	Tinloy Street/Bank street	Nevada County Government Center	7:00 a.m. – 7:25 p.m.	60	8:00 a.m. - 4:25 p.m.	60
2	Tinloy Street/Bank street	Tinloy Street/Bank street	7:30 am. – 6:55 p.m.	120	7:30 am. – 2:55 p.m.	120
3	Tinloy Street/Bank street	Tinloy Street/Bank Street	7:00 am. – 7:26 p.m.	60	8:00 am. – 4:26 p.m.	60
4	Tinloy Street/Bank street	Nevada City Highway at Fowler Center	6:30 a.m. – 7:02 p.m.	60	7:30 a.m. – 5:02 p.m.	60
5	Tinloy Street/Bank street	Nevada St./Auburn, Amtrak Station (Arrive)	6:00 a.m. – 5:50 p.m.	60	-	-
6	Tinloy Street/Bank street	Wildwood Center (Arrive)	9:00 a.m. – 7:24 p.m.	60	10:00 a.m. – 4:24 p.m.	60
7	North Columbia Cultural Center	Tinloy Transit Center, Grass Valley	7:00 a.m. – 7:31 p.m.	390	-	-
AS	Tinloy Street/Bank street	Tinloy Street/Bank street	8:30 a.m. – 4:54 p.m.	120 to 180	-	-

Source: Nevada County Transit website https://www.nevadacountyca.gov/2258/Route-Schedules-and-Maps accessed June 2022

3.5 Existing Traffic Conditions

TJKM evaluated existing traffic conditions at selected study intersections during the a.m. and p.m. peak hours on a typical weekday. Intersection turning movement counts of vehicles, bicycles, and pedestrians were collected during weekday a.m. peak period (7:00-9:00 a.m.) and p.m. peak period (4:00-6:00 p.m.) on February 17, 2022 for the following study intersections:

- Bennett Street & Ophir Street
- Ophir Street & SR 174 / Colfax Avenue
- Neal Street / Colfax Avenue / SR 174 & Hansen Way
- Neal Street & Tinloy Street
- Neal Street & South Auburn Street

For the following intersections, existing a.m. and p.m. peak period traffic counts were utilized from the traffic study for the Idaho-Maryland Mine Project. For these intersections, a.m. and p.m. peak period intersection turning movement counts of vehicles, bicycles, and pedestrians were collected on August 28, 2019

- Railroad Avenue & Idaho Maryland Road
- Idaho Maryland Road & Eastbound State Route (SR) 20 On & Off-Ramps
- Bennett Street & Hansen Way & Eastbound SR 20 On-ramp
- Bennett Street & Tinloy Street & Westbound SR 20 Off-ramp

TJKM also collected one-day Average Daily Traffic (ADT) in February 2022 at the following locations:

- SR 174 between Hansen Way & Ophir Street
- Bennett Street East of Durham School Services
- Bennett Street between Ophir Street & Hansen Way

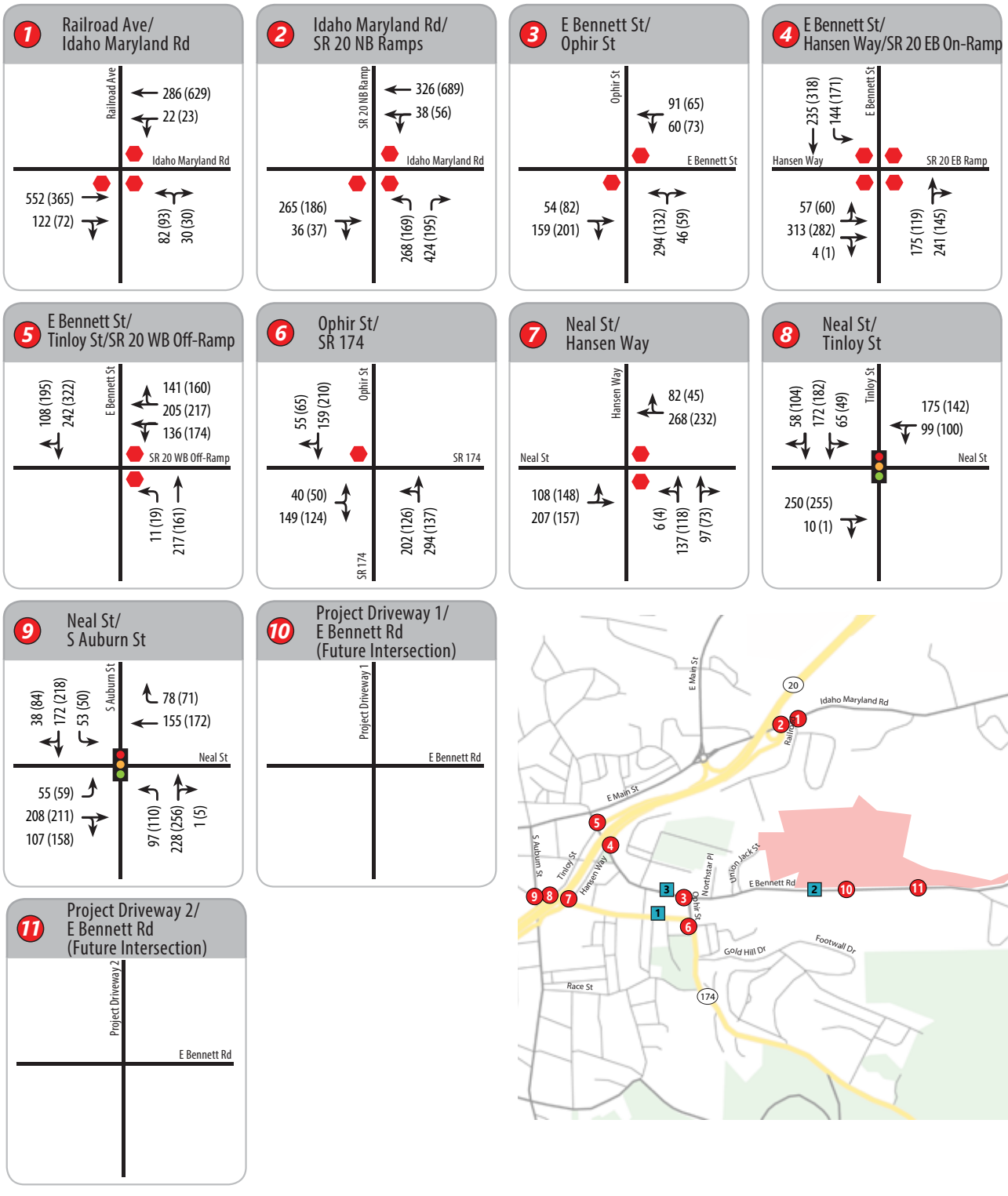
The traffic count data are included in **Appendix A**. The existing average daily traffic at the study roadway segments are illustrated in **Figure 3**. The existing lane geometries and traffic control and intersection turning movement volumes at each study intersection are illustrated on **Figure 4**.

Figure 3: Existing Average Daily Traffic

LEGEND

- Project Site
- Study Intersection
- Study Segment
- XX Existing Average Daily Traffic

Figure 4 – Existing Conditions Intersection Lane Geometry, Traffic Control, & Turning Movement Counts



3.6 Intersection Level of Service Analysis – Existing Conditions

This scenario evaluates the study intersections based on adjusted existing traffic volumes, and existing lane geometry and traffic controls, as described above. The peak hour factors calculated from the existing turning movement counts were used for the study intersections for the Existing Conditions analysis. The results of the LOS analysis using the HCM 6th Edition methodology and Synchro 11/SimTraffic software program for Existing Conditions are summarized in **Table 4**.

Under this scenario, all of the study intersections operate within applicable jurisdictional standards during both peak hours except for the Idaho Maryland Road/EB SR 20 Ramps, which is operating at LOS E with a delay of 37.8 seconds during the p.m. peak hour. This intersection currently meets the peak-hour signal warrant and based on the Nevada County, Grass Valley and Caltrans project lists, this intersection is proposed to be signalized in the future. **Appendix B** contains detailed LOS, Delay and signal warrant calculations worksheets for Existing Conditions.

Table 4: Intersection Level of Service Analysis – Existing Conditions

#	Study Intersection	Control	Existing Conditions			
			AM Peak Hour		PM Peak Hour	
			Delay[1]	LOS[2]	Delay[1]	LOS[2]
1	Railroad Avenue/Idaho Maryland Road	AWSC[3]	13.9	B	18.5	C
2	Idaho Maryland Road/EB SR 20 ramps	AWSC[3]	24.2	C	**37.8**	**E**
3	Bennett Street/Ophir Street[4]	EB/WB Stop	12.1	B	11.4	B
4	Bennett Street/Hansen Way-SR 20 EB ramps	AWSC[3]	20.8	C	15.8	C
5	Bennett Street/Tinloy Street-SR 20 WB Ramps[4]	EB/SB Stop	11.2	B	27.6	D
6	Ophir Street/SR 174[4]	SB Stop	7.6	A	11.4	B
7	Neal Street/Hansen Way[4]	WB/NB Stop	8.5	A	11.0	B
8	Neal Street/Tinloy Street	Signal	7.9	A	7.4	A
9	Neal Street/S. Auburn Street	Signal	7.5	A	9.0	A
10	Project Driveway 1/E. Bennett Road	SB Stop	N/A	N/A	N/A	N/A
11	Project Driveway 2/E. Bennett Road	SB Stop	N/A	N/A	N/A	N/A

Notes:
AM – morning peak hour, PM – evening peak hour
1. Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all-way stop controlled intersections. Total control delay for the worst movement is presented for side-street stop – controlled intersections.
2. LOS = Level of Service
3. AWSC - All Way Stop Control
4. Intersection Delay reported using SimTraffic due to limitations in Synchro for intersections 3, 5, 6 & 7
Bold indicates unacceptable operational conditions based on applicable jurisdictional standards.

3.7 Intersection 95th Percentile Queuing Analysis – Existing Conditions

The quality of traffic flow can also be affected by queuing. **Table 5** summarizes 95th percentile queue results at each study intersections where turn lanes exist, or spillback may cause a queue to extend beyond an adjacent intersection. Those 95th percentile queues exceeding the available storage have been bolded. For this study, the lengths of turning lane queues and stop controlled approach lanes at unsignalized intersections were identified and compared to available storage in order to determine

whether spillover from turn lanes can affect adjoining travel or extend through adjacent intersections. The available storage is presented along with the 95th percentile queue lengths. On multiple lane approaches the longest queue is identified unless noted. Queuing worksheets for Existing Conditions are provided in **Appendix B**.

The 95th percentile queue exceeds available storage in four locations at the following three intersections:

- The intersections of E Bennett Street Hansen Way/SR 20 EB On-Ramp has queues exceeding the available storage length for SBL turn movement during a.m. and p.m. peak hours.
- The intersections of E Bennett Way & Tinloy Street/SR 20 WB Off-Ramp has queues exceeding the available storage length for WBLT movement during a.m. and p.m. peak hour.
- S Auburn Street/Neal Street has queues exceeding the available storage length for EBL and WBR turn movements during a.m. and p.m. peak hours.

Table 5: Intersection 95th Percentile Queuing Analysis – Existing Conditions

#	Intersection	Lane Group	Storage (feet)	Existing	
				AM Peak Hour (feet)	PM Peak Hour (feet)
1	Railroad Avenue/Idaho Maryland Road	EBT	-	55	55
		EBTR	-	77	65
		WBLT	-	45	98
		WBT	-	73	135
		NBLR	-	64	71
2	SR 20 EB Ramps/Idaho Maryland Road	EBTR	-	81	103
		WBLT	-	44	88
		WBT	-	66	90
		NBL	360	89	55
		NBR	-	96	69
3	Ophir Street/E Bennett Street	EBTR	-	76	73
		WBLT	-	80	70
		NBLR	-	-	10
4	E Bennett Street & Hansen Way/SR 20 EB On-Ramp	EBLT	-	55	51
		EBTR	-	63	65

#	Intersection	Lane Group	Storage (feet)	Existing	
				AM Peak Hour (feet)	PM Peak Hour (feet)
		NBTR	-	125	87
		SBL	40	**69**	**90**
		SBT	-	93	136
5	E Bennett Way & Tinloy Street/SR 20 WB Off-Ramp	WBLT	110	**112**	**177**
		WBTR	-	111	383
		NBL	50	29	34
		NBT	-	68	63
		SBLTR	-	16	19
6	SR 174/Ophir Street	EBLR	-	38	32
		NBLT	-	12	-
		SBTR	-	93	141
7	Hansen Way/Neal Street/SR 174	EBLT	-	-	-
		WBTR	-	113	112
		NBLT	-	61	56
		NBTR	-	50	46
8	Tinloy Street/Neal Street	EBTR	-	100	102
		WBLT	-	136	127
		SBLT	-	80	74
		SBTR	-	57	73
9	S Auburn Street/Neal Street	EBL	60	**77**	**99**
		EBTR	-	153	213
		WBT	-	110	121
		WBR	70	**77**	**83**
		NBL	-	84	85
		NBTR	-	89	95

#	Intersection	Lane Group	Storage (feet)	Existing	
				AM Peak Hour (feet)	PM Peak Hour (feet)
		SBL	110	52	90
		SBTR	-	110	240

Notes:
1. 95th percentile queue results summarized using SimTraffic Analysis Software
2. **Bold** value Indicates queue length exceeding the available storage length

4.0 EXISTING PLUS PROJECT CONDITIONS

This analysis scenario presents the impacts of the proposed project at the study intersections and surrounding roadway system. This scenario is identical to Existing Conditions, but with the addition of traffic from the proposed project. The proposed project would construct 258 dwelling units and 187,310 square feet of light industrial space on a site that is mostly vacant.

4.1 Vehicle Miles Traveled

Compliance with Senate Bill (SB) 743 will include replacement of LOS with VMT for purposes of assessing traffic impacts under the California Environmental Quality Act (CEQA) described in new Section 15064.3 of the CEQA Guidelines that will be applied statewide that began on July 1, 2020. Lead agencies will have discretion to choose the most appropriate methodology to evaluate a project's vehicles miles traveled, including whether to express the change in absolute terms, per capita, per household or any other measure. VMT refers to the amount and distance of automobile travel "attributable to a project". Nevada County, where the City of Grass Valley is located formally adopted CEQA Transportation Analysis Guidelines in July 2020. In addition, the Nevada County Transportation Commission (NCTC) prepared a SB 743 VMT Implementation guidelines, which general guide in assessing the potential transportation impacts of proposed projects under CEQA VMT rules.

4.1.1 Screening Criteria

The NCTC SB743 guidelines provide standards for identifying which types of projects should be expected to not result in a significant VMT impact, and a detailed CEQA analysis would not be required to evaluate the project VMT. The location of the proposed development falls in a TAZ that currently have no residential use, and thus is not screened out and requires a detailed CEQA analysis for VMT. Since this project is a mixed use with both residential and commercial uses, the preferred significance threshold metrics were VMT per resident and VMT per job (employee).

4.2.2 VMT Forecasting

TJKM has prepared this VMT analysis for the E Bennett project, which consists of a total of 85 single family dwelling units, 120 senior housing units, 120 multi-family housing units, and 187,000 square feet of light industrial commercial usage. For VMT forecasting, the NCTC SB 743 (July 2020, page 26) recommends that the estimated VMT for a proposed project be obtained by inserting the proposed project into the latest NCTC Travel Demand Model and extract VMT per capita and VMT per job data. Since the project is not screened out from the maps in the NCTC SB743 VMT Tool, a base year plus project model run was performed.

The E Bennett project is located in TAZ #453 and #455 of the NCTC model. Currently, TAZs #453 and #455 have no households or population coded. In TAZ #453 there are currently 125,000 square feet of light industrial land use coded. The project will add a total of 325 housing units with a population of 718. The residents to household ratio of 2.21 was determined using the existing NCTC model ratio. **Table 6** shows the land use changes for the base year plus project run.

Table 6: Land Use Changes for Base Year

TAZ	*Households*	*Population*	*Single Family Dwelling Units*	*Multi Family Dwelling Units*	*Senior Housing Units*	*Light Industrial*
453	240	530	0	120	120	+187ksf
455	85	188	85	0	0	0

A base year plus project model run was conducted with the land use changes added. The results are summarized in **Table 7 and 8**.

Table 7: Home Based VMT Per Capita Comparison (for Residential Uses)

TAZ	*Base Year Average Daily VMT per Resident (per NCTC Model)*	*Grass Valley Average (per NCTC Model)*	*14.3% Below Regional Average (per NCTC Model)*	*Base Year Plus Project Average Daily VMT per Resident (per Model run)*
453	0*	14.8	12.8	6.02
455	0*	14.8	12.8	16.1

Notes:

*Base year no project average VMT per resident is 0 due to the TAZ having no residents coded in there.

The average VMT per capita for the project model run in TAZs #453 and #455 is **11.06**.

Table 8: Home Based VMT Per Job Comparison (for Commercial Uses)

TAZ	*Base Year Average Daily VMT per Job (per NCTC Model)*	*Grass Valley Average (per NCTC Model)*	*14.3% Below Regional Average (per NCTC Model)*	*Base Year Plus Project Average Daily VMT per Job (per Model run)*
453	3	18.6	15.9	4.8

The average VMT per job for the project model run in TAZ #453 is **4.8**.

The existing base year per capita VMT is 0 since currently there are no housing developments in either of the TAZs. The insignificance threshold for VMT in Grass Valley is 12.8 for VMT per capita, and 15.9 for VMT per job. These values are derived from the 2018 base year NCTC model and is calculated by reducing the

Grass Valley average of 14.8 and 18.6 respectively. Adding 325 housing units and 530 residents increased the per capita residential VMT in TAZ #453 from 0 to 6.02, and in TAZ #455 from 0 to 16.1. Taking the average of the two TAZs results in a final VMT per capita value of **11.06**. Although there is an increase in residential VMT per capita once the project is added in the TAZ, 11.06 is still lower than the 14.3% VMT threshold of the Grass Valley average, which is 12.8. The proposed E Bennett Street development is expected to have a **less-than-significant** VMT impact for the residential portion.

The existing base year per job VMT for TAZ #453 is 3.0. Adding in 187,000 square feet of light industrial usage increases the per job VMT to 4.8. Although there is an increase in commercial VMT per job once the project is added in the TAZ, 4.8 is still lower than the 14.3% VMT threshold of the Grass Valley average, which is 15.9. The proposed E Bennett Street development is expected to have a **less-than-significant** VMT impact for the commercial portion (light industrial land use).

4.2 Project Trip Generation

TJKM developed estimated project trip generation for the proposed project based on published trip generation rates from the ITE publication *Trip Generation (11th Edition)*. TJKM used published trip rates for the ITE land use Single Family Detached Housing (ITE Code 210), Multi-family Townhomes (ITE Code 220), and General Light Industrial (ITE Code 110) for this project. The proposed project is expected to generate 3,000 total daily trips, including 281 a.m. peak hour trips (158 in, 123 out) and 309 p.m. peak hour trips (135 in, 174 out).

Table 9 shows the trips expected to be generated by the proposed project.

Table 9: Project Trip Generation

Land Use[2]	*Size*[2]		*Daily*		*AM Peak*					*PM Peak*				
			Rate	*Trips*	*Rate*	*In:Out*	*In*	*Out*	*Total*	*Rate*	*In:Out*	*In*	*Out*	*Total*
Proposed Uses														
Single-Family Detached Housing (210)	130	DU	9.43	1,226	0.7	26:74	24	67	91	0.94	63:37	77	45	122
Multi-Family Attached Townhomes (220)	128	DU	6.74	863	0.4	24:76	12	39	51	0.51	63:37	41	24	65
General Light Industrial (110)	187.31	KSF	4.87	912	0.74	88:12	122	17	139	0.65	14:86	17	105	122
Total				**3,000**			**158**	**123**	**281**			**135**	**174**	**309**

Notes:
1. *Trip Generation, 11th Edition*, Institute of Transportation Engineers (ITE), 2021
2. DU: dwelling unit. KSF: one thousand square feet of building space

4.3 Project Trip Distribution and Assignment

Trip distribution is a process that determines in what proportion vehicles would be expected to travel between the project site and various destinations outside the project study area. Assignment determines the various routes that vehicles would take from the project site to each destination using the calculated trip distribution. Trip distribution assumptions for the proposed development project were developed based on the existing travel patterns and TJKM's knowledge of the study area. The distribution assumptions for the proposed project are as follows:

- 10 percent to/from SR 20 East/SR 49 North
- 30 percent to/from SR 20 West/SR 49 South
- 5 percent to/from Idaho Maryland Road
- 10 percent to/from E Main Street west of the Project site
- 5 percent to/from E Main Street north of the Project site
- 20 percent to/from SR 174
- 10 percent to/from Neal Street west of the Project site
- 10 percent to/from E Bennett Road east of the Project site

Figure 5 illustrates the trip distribution and **Figure 6 illustrates** trip assignment at the study intersections. The project trips were then added to traffic volumes under Existing Conditions to generate Existing plus Project Conditions traffic volumes.

Figure 5 – Project Trip Distributions

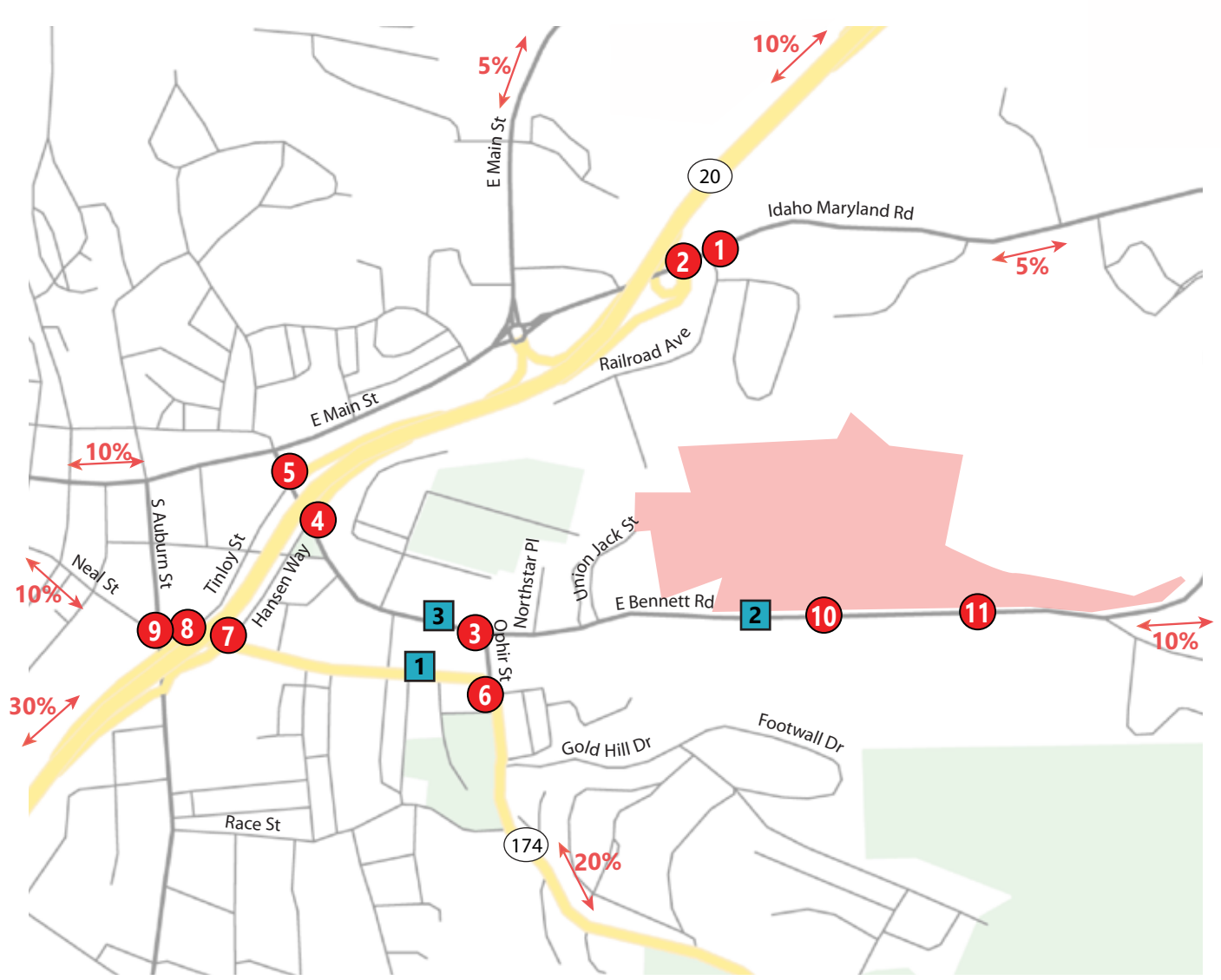
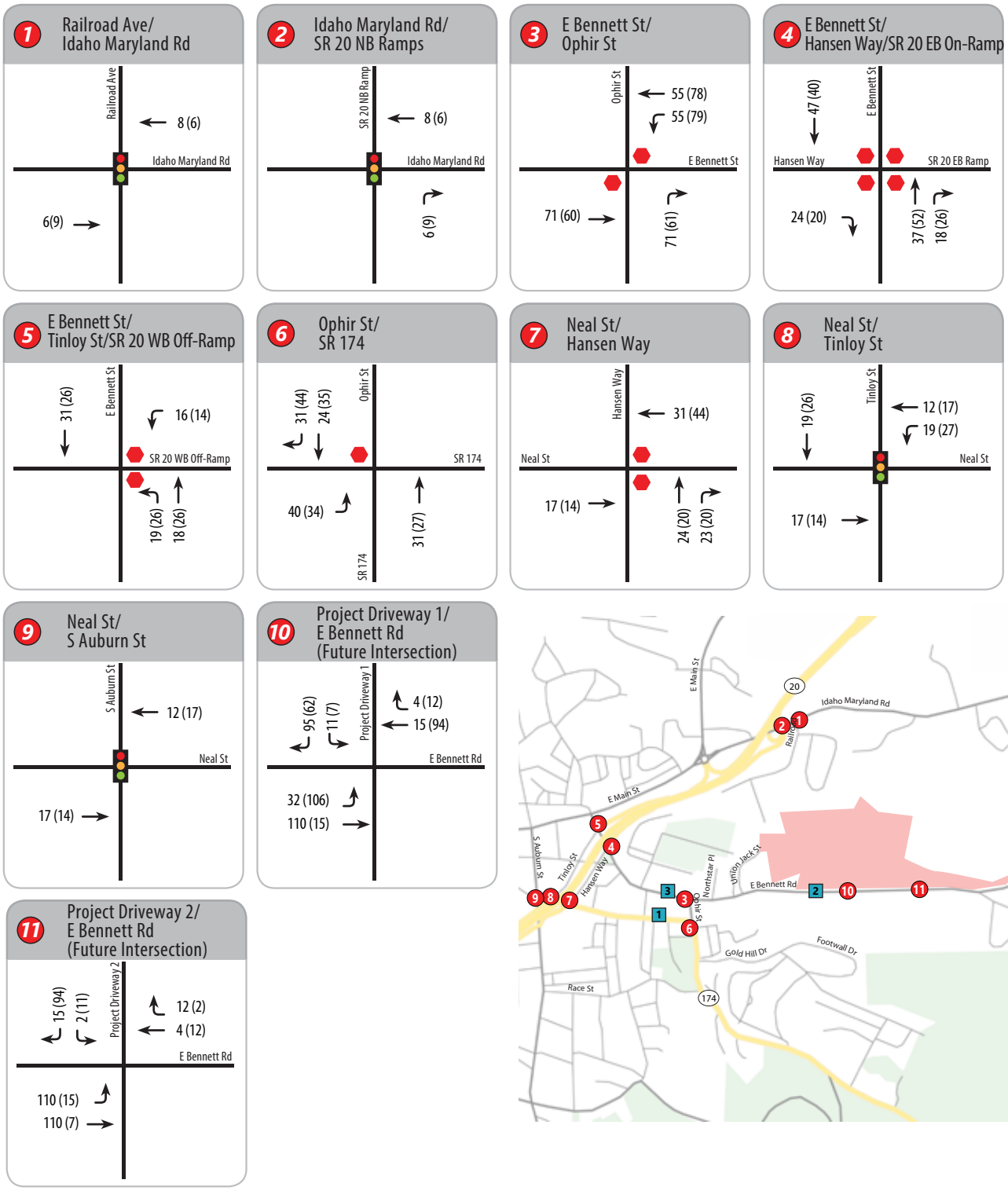


Figure 6 – Project Trip Assignment



4.4 Intersection Level of Service Analysis – Existing plus Project Conditions

The intersection LOS analysis results for Existing plus Project Conditions are summarized in **Table 10**.

Under this scenario, all of the study intersections would continue to operate within applicable jurisdictional standards during both a.m. and p.m. peak hours except for the intersections of Idaho Maryland Road/EB SR 20 Ramps and Bennett Street/Tinloy Street-SR 20 WB Ramps. The intersection of Idaho Maryland Road/EB SR 20 Ramps continues to operate at LOS E during p.m. peak hour with a delay of 39.6 seconds and the intersection of Bennett Street/Tinloy Street-SR 20 WB Ramps is projected to operate at LOS E during p.m. peak hour under Existing plus Project Conditions. A peak hour signal warrant analysis was also conducted for both the unsignalized intersections, to determine if a traffic signal is warranted. Both intersection meet peak-hour signal warrants and based on the Nevada County, Grass Valley and Caltrans project lists, these intersection are proposed to be signalized in the future. For the remaining study intersections, the project would be consistent with level of service standards set forth under the City of Grass Valley General Plan and Nevada County Transportation Commission policy.

Figure 7 shows projected turning movement volumes at all the study intersections for Existing plus Project Conditions. Detailed LOS, Delay and peak hour signal warrant calculations worksheets for Existing Plus Project Conditions are provided in **Appendix C**.

Table 10: Intersection Level of Service Analysis – Existing plus Project Conditions

#	Study Intersection	Control	Existing Conditions				Existing Plus Conditions			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
1	Railroad Avenue/Idaho Maryland Road	AWSC[3]	13.9	B	18.5	C	14.0	B	18.9	C
2	Idaho Maryland Road/EB SR 20 Ramps	AWSC[3]	24.2	C	**37.8**	**E**	24.9	C	**39.6**	**E**
3	Bennett Street/Ophir Street[4]	EB/WB Stop	12.1	B	11.4	B	25.1	D	10.6	B
4	Bennett Street/Hansen Way-SR 20 EB Ramps	AWSC[3]	20.8	C	15.8	C	30.3	D	19.9	C
5	Bennett Street/Tinloy Street-SR 20 WB Ramps[4]	EB/SB Stop	11.2	B	27.6	D	16.6	C	**42.6**	**E**
6	Ophir Street/SR 174[4]	SB Stop	7.6	A	11.4	B	22.0	C	14.0	B
7	Neal Street/Hansen Way[4]	WB/NB Stop	8.5	A	11.0	B	31.2	D	9.7	A
8	Neal Street/Tinloy Street	Signal	7.9	A	7.4	A	8.3	A	7.9	A
9	Neal Street/S. Auburn Street	Signal	7.5	A	9.0	A	7.6	A	9.2	A
10	Project Driveway 1/E. Bennett Road	SB Stop	N/A	N/A	N/A	N/A	10.2	B	10.7	B

#	Study Intersection	Control	Existing Conditions				Existing Plus Conditions			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
11	Project Driveway 2/E. Bennett Road	SB Stop	N/A	N/A	N/A	N/A	9.9	A	9.9	A

Notes:
AM – morning peak hour, PM – evening peak hour
1. Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all-way stop controlled intersections. Total control delay for the worst movement is presented for side-street stop – controlled intersections.
2. LOS = Level of Service
3. AWSC - All Way Stop Control
4. Intersection Delay reported using SimTraffic due to limitations in Synchro for intersections 3, 5, 6 & 7
Bold indicates unacceptable operational conditions based on applicable jurisdictional standards.
Change in average delay between Existing and Existing plus Project Conditions. Average delay may be reduced with the addition of project traffic to non-critical movements.

4.5 Intersection Queuing Analysis

The 95th percentile queue lengths were calculated at the study intersections under Existing and Existing plus Project Conditions. **Table 11** details the information regarding 95th percentile queuing at each study intersection under Existing Plus Project Conditions. Those 95th percentile queues exceeding the available storage have been bolded. Under Existing Plus Project Conditions, the 95th percentile queue exceeds available storage in six locations at the following three intersections:

- The intersections of E Bennett Street Hansen Way/SR 20 EB On-Ramp have queues that will continue to exceed the available storage length for SBL turn movement during a.m. and p.m. peak hours.
- The intersections of E Bennett Way & Tinloy Street/SR 20 WB Off-Ramp have queues that will continue to exceed the available storage length for WBLT movement during a.m. and p.m. peak hour.
- S Auburn Street/Neal Street has queues that will continue to exceed the available storage length for EBL and WBR turn movements during a.m. and p.m. peak hours and the SBL turn movement queue is projected to exceed the available storage length during the p.m. peak hour with the addition of project.

Queuing worksheets for each scenario are provided in **Appendix B** and **Appendix C**.

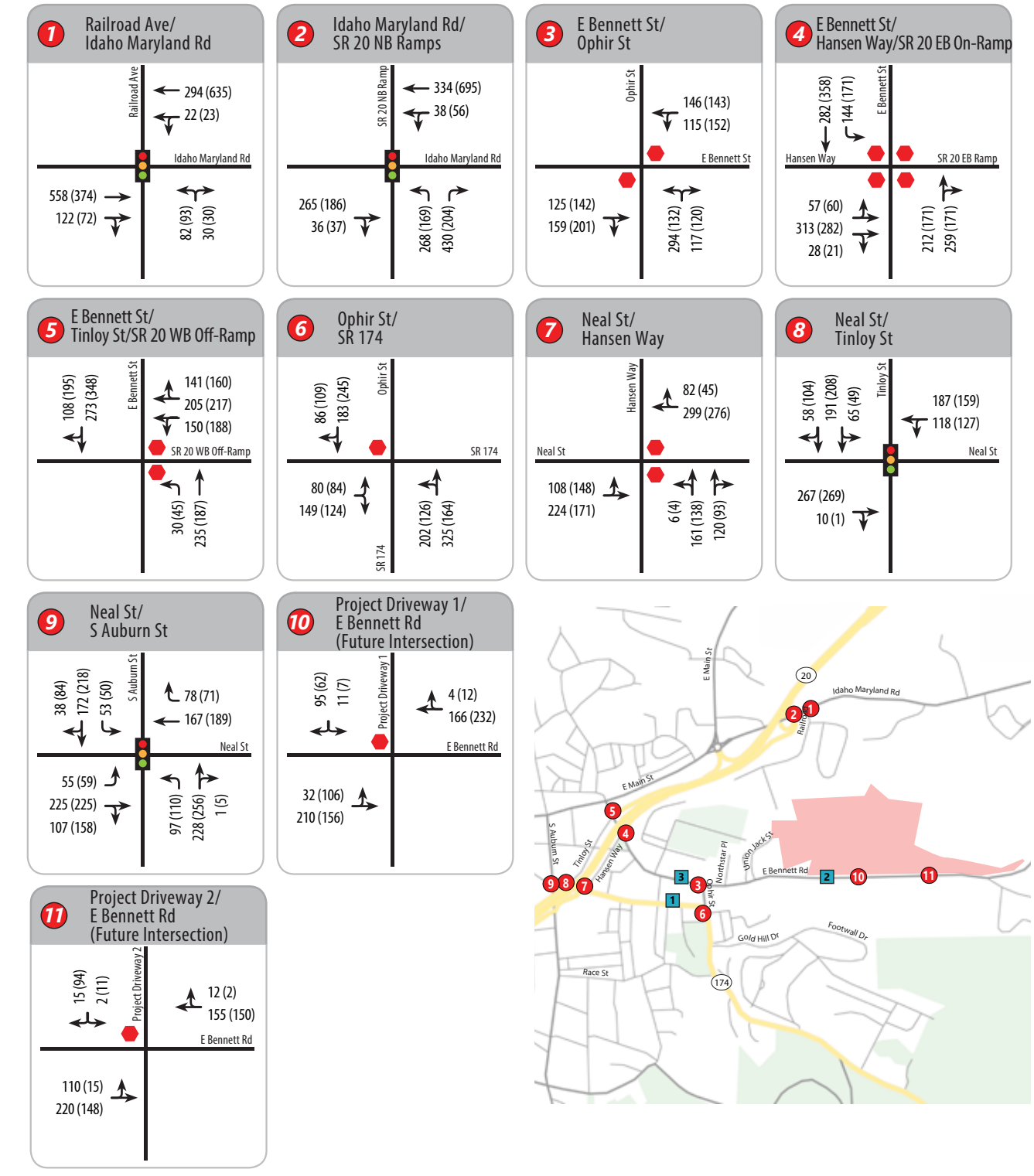
Table 11. 95th Percentile Queue Lengths– Existing plus Project Conditions

#	Intersection	Lane Group	Storage (feet)	Existing		Existing Plus Project Conditions		Difference	
				AM Peak Hour (feet) [A]	PM Peak Hour (feet) [B]	AM Peak Hour (feet) [C]	PM Peak Hour (feet) [D]	[A-C]	[B-D]
1	Railroad Avenue/Idaho Maryland Road	EBT	-	55	55	68	54	13	-1
		EBTR	-	77	65	74	67	-3	2
		WBLT	-	45	98	46	93	1	-5
		WBT	-	73	135	79	156	6	21
		NBLR	-	64	71	75	67	11	-4
2	SR 20 EB Ramps/Idaho Maryland Road	EBTR	-	81	103	120	83	39	-20
		WBLT	-	44	88	55	91	11	3
		WBT	-	66	90	67	112	1	22
		NBL	360	89	55	95	58	6	3
		NBR	-	96	69	124	62	28	-7
3	Ophir Street/E Bennett Street	EBTR	-	76	73	256	102	180	29
		WBLT	-	80	70	224	125	144	55
		NBLR	-	-	10	39	9	27	-1
4	E Bennett Street & Hansen Way/SR 20 EB On-Ramp	EBLT	-	55	51	63	62	8	11
		EBTR	-	63	65	72	71	9	6
		NBTR	-	125	87	244	122	119	35
		SBL	40	**69**	**90**	**74**	**96**	5	6
		SBT	-	93	136	95	151	2	15
5	E Bennett Way & Tinloy Street/SR 20 WB Off-Ramp	WBLT	110	**112**	**177**	**146**	**184**	34	7
		WBTR	-	111	383	163	440	52	57
		NBL	50	29	34	43	**61**	14	27
		NBT	-	68	63	71	95	3	32
		SBLTR	-	16	19	20	15	4	-4
6	SR 174/Ophir Street	EBLR	-	38	32	87	31	49	-1

#	Intersection	Lane Group	Storage (feet)	Existing		Existing Plus Project Conditions		Difference	
				AM Peak Hour (feet) [A]	PM Peak Hour (feet) [B]	AM Peak Hour (feet) [C]	PM Peak Hour (feet) [D]	[A-C]	[B-D]
		NBLT	-	12	-	51	-	39	-
		SBTR	-	93	141	196	185	103	44
7	Hansen Way/Neal Street/SR 174	EBLT	-	-	-	-	-	6	-
		WBTR	-	113	112	366	170	253	58
		NBLT	-	61	56	79	78	18	22
		NBTR	-	50	46	75	50	25	4
8	Tinloy Street/Neal Street	EBTR	-	100	102	100	105	0	3
		WBLT	-	136	127	178	161	42	34
		SBLT	-	80	74	114	84	34	10
		SBTR	-	57	73	103	85	46	12
9	S Auburn Street/Neal Street	EBL	60	**77**	**99**	**83**	**114**	6	15
		EBTR	-	153	213	330	562	177	349
		WBT	-	110	121	127	129	17	8
		WBR	70	**77**	**83**	**88**	**94**	11	11
		NBL	-	84	85	87	87	3	2
		NBTR	-	89	95	88	94	-1	-1
		SBL	110	52	90	53	**117**	1	27
		SBTR	-	110	240	108	269	-2	29
10	E Bennett Street/Project Driveway 1	EBLT	-	-	-	33	76	60	76
		WBTR	-	-	-	-	84	38	84
		SBLR	-	-	-	58	53	52	53
11	E Bennett Street/Project Driveway 2	EBLT	-	-	-	60	15	14	15
		SBLR	-	-	-	43	71	34	71

Notes:
1. 95th percentile queue results summarized using SimTraffic Analysis Software
2. **Bold** value Indicates queue length exceeding the available storage length

Figure 7 - Existing Plus Project Conditions Intersection Lane Geometry, Traffic Control, & Turning Movement Counts



5.0 CUMULATIVE NO-PROJECT CONDITIONS (2035)

The Cumulative No-Project Conditions analysis forecasts how the study area's transportation system would operate with the growth and changes of the surrounding community by the year 2035.

Year 2035 traffic forecasts were based on the most recent Traffic Impact Study Conducted for the traffic study for the Idaho Maryland Road Mines project. In the analysis for Idaho Maryland Road Mines project, the year 2035 traffic forecast were determined using the Nevada County Transportation Commission (NCTC) regional travel demand model. Year 2035 traffic demands for the following intersections were directly obtained from the Idaho Maryland Road Mines project:

- Railroad Avenue & Idaho Maryland Road
- Idaho Maryland Road & Eastbound SR 20 On & Off-Ramps
- Bennett Street & Hansen Way & Eastbound SR 20 On-Ramp
- Bennett Street & Tinloy Street & Westbound SR 20 Off-Ramp
- Neal Street & Tinloy Street

For the remaining intersections, an annual compounding growth rate of 1% was applied to existing traffic counts to project future 2035 traffic demands during a.m. and p.m. peak hour. This growth rate was estimated from the intersections studied in the Idaho Maryland Road Mines project based on the existing traffic counts and cumulative traffic conditions.

5.1 Intersection Improvements

The intersections studied for this project are generally projected to remain with their current lane configurations in 2035. The following changes to the projected 2035 study area network were identified based on Nevada County, Grass Valley and Caltrans project lists:

- SR 49/20 Eastbound On-Ramp / E. Bennett Road – *Install traffic signal*
- SR 49/20 Westbound Off-Ramp / E. Bennett Road – *Install traffic signal*
- Idaho Maryland Road / SR 49/20 Ramps – *Install traffic signal with NB overlap*
- Idaho Maryland Road / Railroad Avenue – *Install traffic signal*

Based on the growth in these corridor volumes, an annual compounding growth rate of 1 percent was applied to adjusted Existing Conditions to project future 2035 traffic volumes.

Figure 8 shows projected turning movement volumes at the study intersections for Cumulative (2035) Conditions for a.m. and p.m. peak hours.

5.2 Intersections Level of Service Analysis – Cumulative No-Project Conditions

The intersection LOS analysis results for Cumulative No-Project Conditions are summarized in **Table 12**. Under this scenario, all of the study intersections operate within applicable jurisdictional standards during both a.m. and p.m. peak hours. As mentioned above, intersections 1, 2, 4 & 5 are studied as signalized intersections under Cumulative Conditions based on the Nevada County, Grass Valley and Caltrans project

list. Detailed LOS and Delay calculations worksheets for Cumulative No-Project Conditions are provided in **Appendix D**.

Table 12: Intersection Level of Service Analysis – Cumulative Conditions

#	Study Intersection	Control	Cumulative Conditions			
			AM Peak Hour		PM Peak Hour	
			Delay[1]	LOS[2]	Delay[1]	LOS[2]
1	Railroad Avenue/Idaho Maryland Road[5]	Signal	4.9	A	5.0	A
2	Idaho Maryland Road/EB SR 20 Ramps[5]	Signal	11.2	B	7.9	A
3	Bennett Street/Ophir Street[4]	EB/WB Stop	10.7	B	9.7	A
4	Bennett Street/Hansen Way-SR 20 EB Ramps[5]	Signal	9.5	A	7.7	A
5	Bennett Street/Tinloy Street-SR 20 WB Ramps[5]	Signal	8.6	A	11.9	B
6	Ophir Street/SR 174[4]	SB Stop	11.1	B	11.9	B
7	Neal Street/Hansen Way[4]	WB/NB Stop	13.3	B	10.5	B
8	Neal Street/Tinloy Street	Signal	8.5	A	8.1	A
9	Neal Street/S. Auburn Street	Signal	8.1	A	10.8	B
10	Project Driveway 1/E. Bennett Road	SB Stop	N/A	N/A	N/A	N/A
11	Project Driveway 2/E. Bennett Road	SB Stop	N/A	N/A	N/A	N/A

Notes:
AM – morning peak hour, PM – evening peak hour
1. Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all-way stop controlled intersections. Total control delay for the worst movement is presented for side-street stop – controlled intersections.
2. LOS = Level of Service
3. AWSC - All Way Stop Control
4. Intersection Delay reported using SimTraffic due to limitations in Synchro for intersections 3, 6 & 7
5. Intersection 1, 2, 4 & 5 are analyzed as signalized intersection under cumulative no project and cumulative plus project conditions
Bold indicates unacceptable operational conditions based on applicable jurisdictional standards.

5.2 Intersection 95th Percentile Queuing Analysis – Cumulative No-Project Conditions

Table 13 summarizes 95th percentile queue results at each study intersections where turn lanes exist, or spillback may cause a queue to extend beyond an adjacent intersection. Those 95th percentile queues with length exceeding the available storage have been bolded. For this study, the lengths of turning lane queues and stop controlled approach lanes at unsignalized intersections were identified and compared to available storage in order to determine whether spillover from turn lanes can affect adjoining travel or extend through adjacent intersections under Cumulative (2035) Conditions. The available storage is presented along with the 95th percentile queue lengths. On multiple lane approaches the longest queue is identified unless noted.

The 95th percentile queue exceeds available storage in six locations at the following three intersections:

- The intersections of E Bennett Street Hansen Way/SR 20 EB On-Ramp have queues exceeding the available storage length for SBL turn movement during a.m. and p.m. peak hour.
- The intersection of E Bennett Way & Tinloy Street/SR 20 WB Off-Ramp has queues exceeding the available storage length for WBLT movement during a.m. and p.m. peak hour and for NBL turn movement during p.m. peak hour.
- The intersection of S Auburn Street/Neal Street has queues exceeding the available storage length for EBL and WBR turn movements during a.m. and p.m. peak hour and for SBL during p.m. peak hour.

Queuing worksheets for Cumulative No-Project Conditions are provided in **Appendix D**.

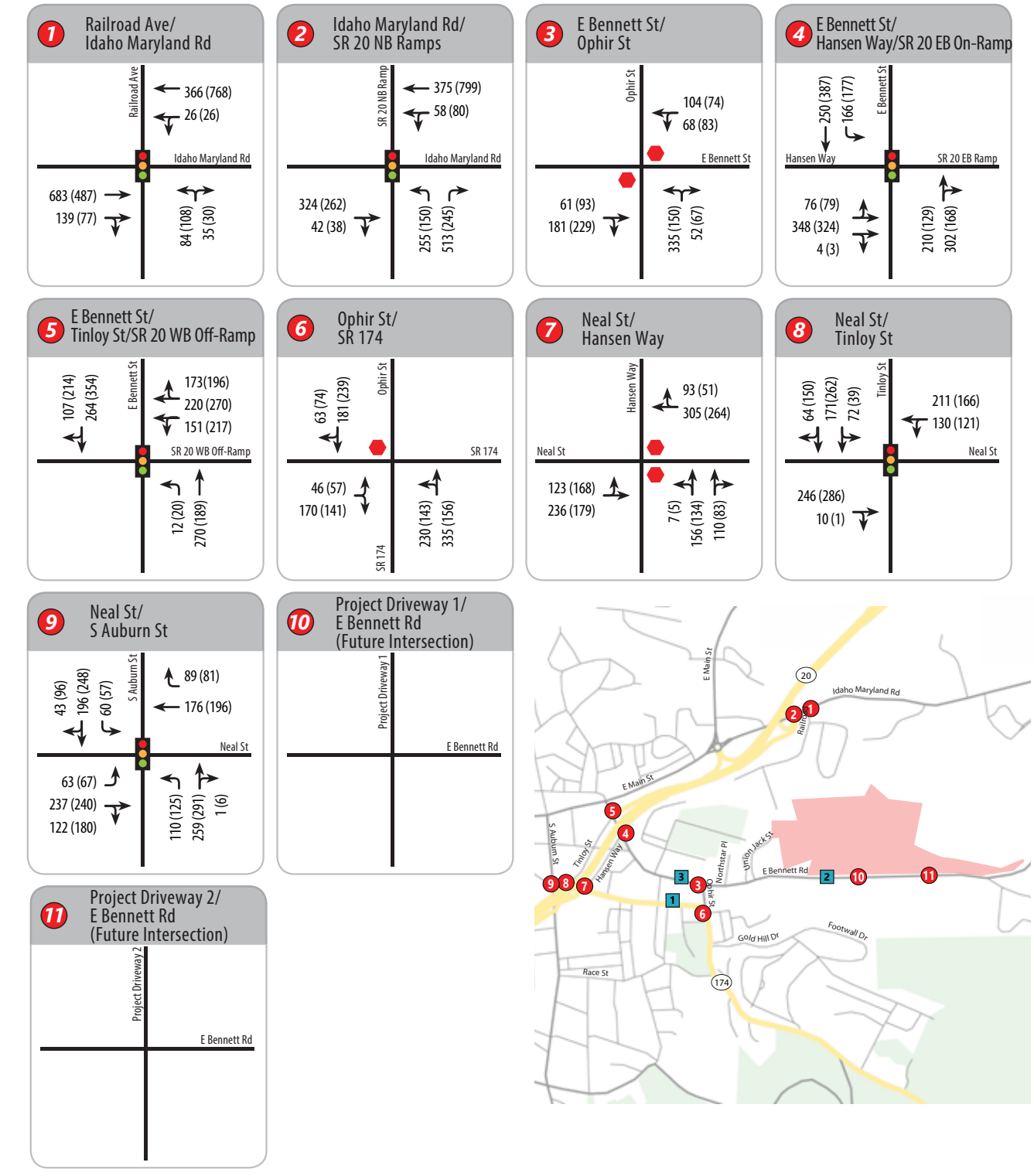
Table 13: Intersection 95th Percentile Queuing Analysis – Cumulative No-Project Conditions

#	Intersection	Lane Group	Storage (feet)	Cumulative (2035) Conditions	
				AM Peak Hour (feet)	PM Peak Hour (feet)
1	Railroad Avenue & Idaho Maryland Road	EBT	-	138	122
		EBTR	-	144	127
		WBLT	-	123	256
		WBT	-	208	327
		NBLR	-	106	100
2	SR 20 EB Ramps & Idaho Maryland Road	EBTR	-	252	181
		WBLT	-	134	143
		WBT	-	149	153
		NBL	360	192	114
		NBR	-	243	127
3	Ophir Street & E Bennett Street	EBTR	-	138	124
		WBLT	-	85	76
		NBLR	-	10	12
4	E Bennett Street & Hansen Way/SR 20 EB On-Ramp	EBLT	-	110	107
		EBTR	-	104	108
		NBTR	-	184	104
		SBL	40	**90**	**92**

#	Intersection	Lane Group	Storage (feet)	Cumulative (2035) Conditions	
				AM Peak Hour (feet)	PM Peak Hour (feet)
		SBT	-	184	203
5	E Bennett Way & Tinloy Street/SR 20 WB Off-Ramp	WBLT	110	**146**	**171**
		WBTR	-	144	235
		NBL	50	44	**53**
		NBT	-	145	129
		SBTR	-	180	339
6	SR 174 & Ophir Street	EBLR	-	52	35
		NBLT	-	-	10
		SBTR	-	128	119
7	Hansen Way & Neal Street/SR 174	EBLT	-	-	12
		WBTR	-	161	170
		NBLT	-	68	86
		NBTR	-	64	50
8	Tinloy Street & Neal Street	EBTR	-	99	105
		WBLT	-	177	175
		SBLT	-	109	97
		SBTR	-	94	129
9	S Auburn Street & Neal Street	EBL	60	**104**	**122**
		EBTR	-	267	713
		WBT	-	142	145
		WBR	70	**93**	**78**
		NBL	-	84	95
		NBTR	-	99	100
		SBL	110	84	**121**
		SBTR	-	138	242

Notes:
1. 95th percentile queue results summarized using SimTraffic Analysis Software
2. **Bold** value Indicates queue length exceeding the available storage length

Figure 8 – Cumulative Conditions Intersection Lane Geometry, Traffic Control, and Turning Movement Counts



6.0 CUMULATIVE PLUS PROJECT CONDITIONS

This scenario is identical to Cumulative No-Project Conditions, but with the addition of projected traffic from the proposed project. Trip generation, distribution, and assignment for the proposed project are identical to that assumed under Existing plus Project Conditions.

6.1 Intersection Level of Service Analysis – Cumulative plus Project Conditions

The intersection LOS analysis results for Cumulative plus Project Conditions are summarized in **Table 14**.

Under this scenario, all of the study intersections would continue to operate within applicable jurisdictional standards during both a.m. and p.m. peaks. The project would be consistent with level of service standards set forth under the City of Grass Valley General Plan and Nevada County Transportation Commission policy.

Figure 9 shows projected turning movement volumes at all the study intersections for Cumulative plus Project Conditions. Detailed LOS and Delay calculations worksheets for Cumulative plus Project Conditions are provided in **Appendix E.**

Table 14: Intersection Level of Service Analysis – Cumulative plus Project Conditions

#	Study Intersection	Control	Cumulative Conditions				Cumulative Plus Conditions			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
1	Railroad Avenue/Idaho Maryland Road[5]	Signal	4.9	A	5.0	A	4.9	A	5.0	A
2	Idaho Maryland Road/EB SR 20 Ramps[5]	Signal	11.2	B	7.9	A	11.3	B	8.1	A
3	Bennett Street/Ophir Street[4]	EB/WB Stop	10.7	B	9.7	A	12.5	B	14.7	B
4	Bennett Street/Hansen Way-SR 20 EB Ramps[5]	Signal	9.5	A	7.7	A	10.4	B	8.3	A
5	Bennett Street/Tinloy Street-SR 20 WB Ramps[5]	Signal	8.6	A	11.9	B	9.0	A	12.7	B
6	Ophir Street/SR 174[4]	SB Stop	11.1	B	11.9	B	16.2	C	18.8	C
7	Neal Street/Hansen Way[4]	WB/NB Stop	13.3	B	10.5	B	20.1	C	12.0	B
8	Neal Street/Tinloy Street	Signal	8.5	A	8.1	A	9.1	A	8.7	A
9	Neal Street/S. Auburn Street	Signal	8.1	A	10.8	B	8.3	A	11.2	B
10	Project Driveway 1/E. Bennett Road	SB Stop	N/A	N/A	N/A	N/A	10.4	B	10.9	B
11	Project Driveway 2/E. Bennett Road	SB Stop	N/A	N/A	N/A	N/A	10.0	A	10.1	B

Notes:
AM – morning peak hour, PM – evening peak hour
1. Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all-way stop controlled intersections. Total control delay for the worst movement is presented for side-street stop – controlled intersections.
2. LOS = Level of Service
3. AWSC - All Way Stop Control
4. Intersection Delay reported using SimTraffic due to limitations in Synchro for intersections 3, 6 & 7
5. Intersection 1, 2, 4 & 5 are analyzed as signalized intersection under cumulative no project and cumulative plus project conditions
Bold indicates unacceptable operational conditions based on applicable jurisdictional standards.

6.2 Intersection 95TH Percentile Queuing Analysis – Cumulative Plus Project Conditions

Table 15 summarizes 95th percentile queue results at each study intersections where turn lanes exist, or spillback may cause a queue to extend beyond an adjacent intersection. Those 95th percentile queues exceeding the available storage have been bolded. For this study, the lengths of turning lane queues and stop controlled approach lanes at unsignalized intersections were identified and compared to available storage in order to determine whether spillover from turn lanes can affect adjoining travel or extend through adjacent intersections under Cumulative (2035) Conditions. The available storage is presented along with the 95th percentile queue lengths. On multiple lane approaches the longest queue is identified unless noted.

The 95th percentile queue exceeds available storage in six locations at the following three intersections:

- The intersections of E Bennett Street Hansen Way/SR 20 EB On-Ramp have queues that will continue to exceed the available storage length for SBL turn movements during a.m. and p.m. peak hours.
- The intersection of E Bennett Way & Tinloy Street/SR 20 WB Off-Ramp has queue that will continue to exceed the available storage lengths for WBLT movement and NBL turn movements during a.m. and p.m. peak hours.
- The intersection of S Auburn Street/Neal Street has queues that will continue to exceed the available storage length for EBL during the p.m. peak hour, WBR turn movements during a.m. and p.m. peak hour and for SBL during p.m. peak hour will exceed available space.

Queuing worksheets for Cumulative No-Project Conditions and Cumulative plus Project Conditions are provided in **Appendix D and Appendix E**.

Table 15: Intersection 95th Percentile Queuing Analysis – Cumulative No-Project Conditions

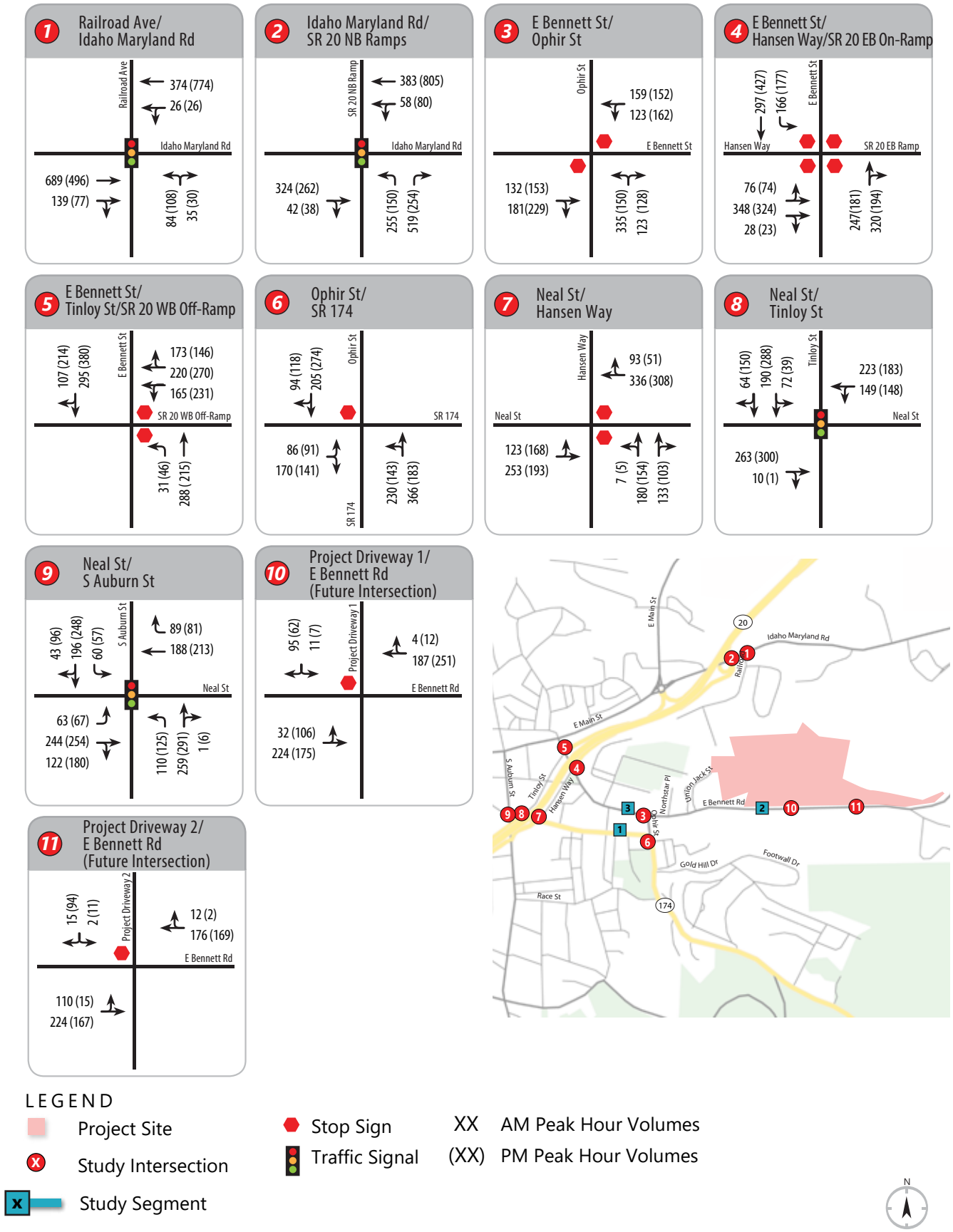
#	Intersection	Lane Group	Storage (feet)	Cumulative (2035) Conditions		Cumulative(2035) Plus Project Conditions		Difference	
				AM Peak Hour (feet) [A]	PM Peak Hour (feet) [B]	AM Peak Hour (feet) [C]	PM Peak Hour (feet) [D]	[A-C]	[B-D]
1	Railroad Avenue & Idaho Maryland Road	EBT	-	138	122	130	111	-8	-11
		EBTR	-	144	127	140	125	-4	-2
		WBLT	-	123	256	137	292	14	36
		WBT	-	208	327	173	421	-35	94
		NBLR	-	106	100	111	103	5	3
2	SR 20 EB Ramps & Idaho Maryland Road	EBTR	-	252	181	232	278	-20	97
		WBLT	-	134	143	134	148	0	5
		WBT	-	149	153	141	157	-8	4
		NBL	360	192	114	150	117	-42	3
		NBR	-	243	127	235	86	-8	-41
3	Ophir Street & E Bennett Street	EBTR	-	138	124	155	147	17	23
		WBLT	-	85	76	109	162	24	86

#	Intersection	Lane Group	Storage (feet)	Cumulative (2035) Conditions		Cumulative(2035) Plus Project Conditions		Difference	
				AM Peak Hour (feet) [A]	PM Peak Hour (feet) [B]	AM Peak Hour (feet) [C]	PM Peak Hour (feet) [D]	[A-C]	[B-D]
		NBLR	-	10	12	12	16	2	4
4	E Bennett Street & Hansen Way/SR 20 EB On-Ramp	EBLT	-	110	107	133	93	23	-14
		EBTR	-	104	108	108	105	4	-3
		NBTR	-	184	104	257	150	73	46
		SBL	40	**90**	**92**	**88**	**97**	-2	5
		SBT	-	184	203	202	217	18	14
5	E Bennett Way & Tinloy Street/SR 20 WB Off-Ramp	WBLT	110	**146**	**171**	**135**	**171**	-11	0
		WBTR	-	144	235	148	190	4	-45
		NBL	50	44	**53**	**59**	**86**	15	33
		NBT	-	145	129	158	170	13	41
		SBTR	-	180	339	200	297	20	-42
6	SR 174 & Ophir Street	EBLR	-	52	35	75	57	23	22
		NBLT	-	-	10	46	24	-	14
		SBTR	-	128	119	160	220	32	101
7	Hansen Way & Neal Street/SR 174	EBLT	-	-	12	-	20	9	8
		WBTR	-	161	170	238	166	77	-4
		NBLT	-	68	86	88	78	20	-8
		NBTR	-	64	50	61	49	-3	-1
8	Tinloy Street & Neal Street	EBTR	-	99	105	104	99	5	-6
		WBLT	-	177	175	177	179	0	4
		SBLT	-	109	97	135	104	26	7
		SBTR	-	94	129	110	131	16	2
9	S Auburn Street & Neal Street	EBL	60	**104**	**122**	49	**136**	-55	14
		EBTR	-	267	713	262	689	-5	-24
		WBT	-	142	145	88	141	-54	-4
		WBR	70	**93**	**78**	51	**93**	-42	15
		NBL	-	84	95	60	91	-24	-4
		NBTR	-	99	100	70	90	-29	-10
		SBL	110	84	**121**	35	**127**	-49	6
		SBTR	-	138	242	79	362	-59	120
10	E Bennett Street & Project Driveway 1	EBLT	-	-	-	28	58	74	75
		WBTR	-	-	-	-	-	71	69
		SBLR	-	-	-	61	59	67	53
11	E Bennett Street & Project Driveway 2	EBLT	-	-	-	66	30	63	15
		WBTR	-	-	-	7	-		
		SBLR	-	-	-	38	55	36	53

Notes:

1. 95th percentile queue results summarized using SimTraffic Analysis Software
2. Bold value Indicates queue length exceeding the available storage length

Figure 9 - Cumulative plus Project Conditions Intersection Lane Geometry, Traffic Control, & Turning Movement Counts



7.0 ADDITIONAL ANALYSIS

The following sections provide additional analyses of other transportation issues associated with the project site, including:

- Site access and impacts
- Parking analysis
- Recommendations

The analyses in these sections are based on professional judgment in accordance with the standards and methods employed by traffic engineers. Although operational issues are not considered CEQA impacts, they do describe traffic conditions that are relevant to describing the project environment.

7.1 Site Access, Circulation, and Multimodal Impacts

This section analyzes site access and internal circulation based on the site plan presented in **Figure 2** dated May 18, 2022.

Vehicle Access and Circulation

Access to the project site would be provided by connections to East Bennett Street and Union Jack Street. On East Bennett Street there would be one connection each for residential and for light industrial but no interconnection on-site between residential and industrial uses. Residential uses would also have an access connection to Union Jack Street. The applicant is willing to provide an emergency access to adjacent his property line north of the project site such that emergency vehicles could also access via Railroad Avenue. Internal roadways appear to conform to City of Grass Valley standard plans for residential streets. Vehicle access to the project site and individual homes is considered **adequate** and would not result in any significant impacts to the nearby roadways.

Pedestrian Access, Circulation, and Impacts

Pedestrian access would be via internal sidewalks connecting to existing sidewalks on Union Jack Street and E Bennett Road. All internal streets would be provided with sidewalks and adequate curb ramps at corners to provide accessible paths of travel to each home. It should be noted that no pedestrian facilities are proposed east of Union Jack Street. TJKM recommends that a path extending from Union Jack Street to the main driveway of the Project be considered.

A significant impact occurs if the proposed project conflicts with applicable or adopted policies, plans or programs related to pedestrians facilities or otherwise decreases the performance or safety of pedestrian facilities. The proposed project will not result in any such conflicts. Pedestrian access to the project site and individual homes is considered adequate and would not result in any significant impacts to the nearby pedestrian facilities. TJKM also recommends that crosswalks be marked at natural crossing points with curb ramps.

Bicycle Access, Circulation, and Impacts

As noted in section 3.3, none of the study intersections or segments between study intersections have bikeways. On-street bicycle facilities are limited within the project vicinity. It should also be noted that no bicycle facilities are planned in the vicinity of the Project.

An impact to bicyclists occurs if the proposed project disrupt existing bicycle facilities; or conflict or create inconsistencies with adopted bicycle system plans, guidelines, and policies. A significant impact occurs if the proposed project conflicts with applicable or adopted policies, plans or programs related to bicycle facilities or otherwise decrease the performance or safety of bicycle facilities. The proposed project will not result in any such conflicts and would not result in any significant impacts.

Transit Access and Impacts

A proposed project is considered to have a significant impact on transit if it conflicts with existing or planned transit facilities, or is expected to generate additional transit trips and does not provide adequate facilities for pedestrians and bicyclists to access transit routes and stops. The project is located within an approximately 0.3 mile walk of bus stops on Ophir Street, which is served by Route 3. The transit service within the immediate project site operates within capacity, and additional trips generated by the proposed project could be accommodated by existing bus services. Therefore, transit access to the project site is considered adequate and would not result in any significant impacts to the nearby transit network.

7.2 Parking

The project proposes to construct 128 Single Family homes, 130 townhomes and 4.3 acres of light industrial area. As per the City of Grass Valley Municipal Code Chapter 17.36.030, single family dwelling units requires two parking spaces with at least one covered parking space. For Multi-unit housing, two covered parking space for each unit and one space for each five units for guest parking is required. For industrial land use, one space for each 200 square feet of office area is required. The proposed parking supply provided by the project would be adequate under City of Grass Valley requirements and would not produce any parking impacts on surrounding parcels or roadways.

7.3 Recommendations

TJKM recommends the following:

- Consider the building sidewalk along the north side of East Bennett Street to form a pedestrian connection between the proposed development and existing established residential areas adjacent and nearby.
- On signing and striping plan, include marked crosswalks at internal intersections with curb ramps.

Appendix A – Existing Turning Movement Counts

Prepared by National Data & Surveying Services

Railroad Ave & Idaho Maryland Rd

Peak Hour Turning Movement Count

ID: 19-07290-017
City: Grass Valley

Day: Wednesday
Date: 08/28/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	06:30 AM - 09:30 AM
NONE	NONE
04:30 PM - 05:30 PM	03:30 PM - 07:30 PM

Railroad Ave — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

Idaho Maryland Rd — EASTBOUND

AM	NOON	PM	
368	0	722	⇦
0	0	0	↶ 0
0	0	0	↱ 0
552	0	365	→ 0
122	0	72	↴ 0
AM	NOON	PM	

CONTROL

0

TEV	1094 AM	0 NOON	1212 PM
PHF	0.95		0.87

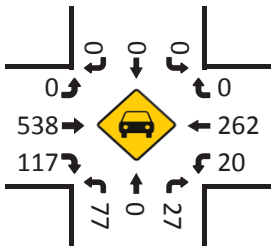
Idaho Maryland Rd — WESTBOUND

PM	NOON	AM	
0	0	0	↰ 0
629	0	286	← 0
22	0	22	↰ 0
1	0	0	↰ 0
396	0	582	⇨
PM	NOON	AM	

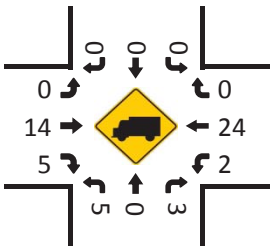
Railroad Ave — NORTHBOUND

PM	94	0	93	0	30	PM
NOON	0	0	0	0	0	NOON
AM	144	0	82	0	30	AM

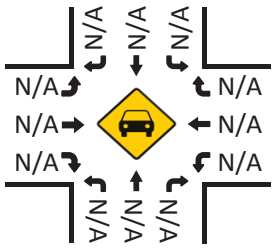
Cars (AM)



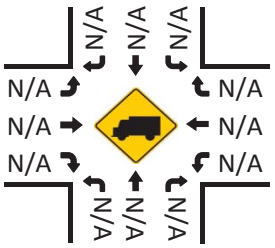
HT (AM)



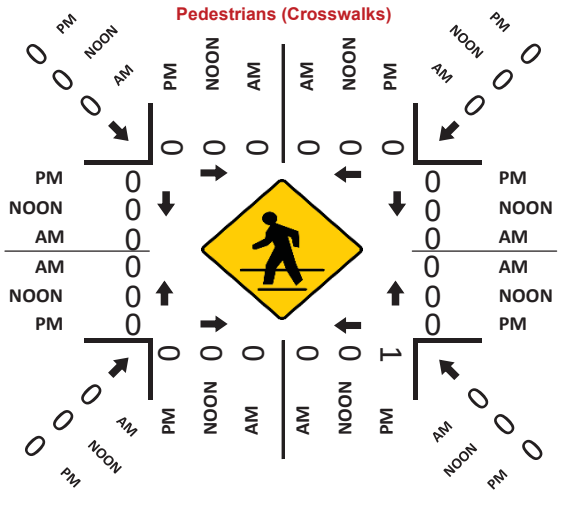
Cars (NOON)



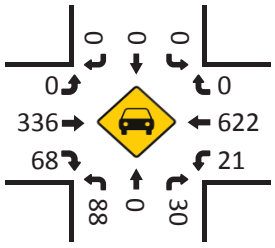
HT (NOON)



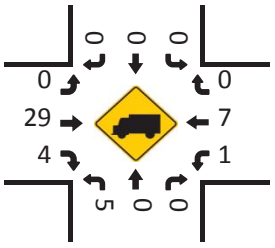
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Railroad Ave & Idaho Maryland Rd
City: Grass Valley
Control:

Project ID: 19-07290-017
Date: 8/28/2019

Total

NS/EW Streets:	Railroad Ave				Railroad Ave				Idaho Maryland Rd				Idaho Maryland Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:30 AM	1	0	3	0	0	0	0	0	0	106	7	0	4	27	0	0	148
6:45 AM	8	0	3	0	0	0	0	0	0	149	24	0	5	40	0	0	229
7:00 AM	14	0	1	0	0	0	0	0	0	73	16	0	5	42	0	0	151
7:15 AM	21	0	0	0	0	0	0	0	0	105	21	0	6	32	0	0	185
7:30 AM	12	0	4	0	0	0	0	0	0	103	20	0	4	59	0	0	202
7:45 AM	10	0	5	0	0	0	0	0	0	150	35	0	6	70	0	0	276
8:00 AM	17	0	3	0	0	0	0	0	0	127	27	0	9	69	0	0	252
8:15 AM	20	0	10	0	0	0	0	0	0	160	32	0	3	64	0	0	289
8:30 AM	17	0	7	0	0	0	0	0	0	131	25	0	5	87	0	0	272
8:45 AM	28	0	10	0	0	0	0	0	0	134	38	0	5	66	0	0	281
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	148	0	46	0	0	0	0	0	0	1238	245	0	52	556	0	0	2285
APPROACH %'s :	76.29%	0.00%	23.71%	0.00%					0.00%	83.48%	16.52%	0.00%	8.55%	91.45%	0.00%	0.00%	
PEAK HR :	**08:00 AM - 09:00 AM**																TOTAL
PEAK HR VOL :	82	0	30	0	0	0	0	0	0	552	122	0	22	286	0	0	1094
PEAK HR FACTOR :	0.732	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.863	0.803	0.000	0.611	0.822	0.000	0.000	0.946
	0.737								0.878				0.837				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:30 PM	26	0	7	0	0	0	0	0	0	87	26	0	8	148	0	0	302
3:45 PM	25	0	16	0	0	0	0	0	0	95	24	0	12	133	0	0	305
4:00 PM	25	0	13	0	0	0	0	0	0	99	23	0	5	134	0	0	299
4:15 PM	31	0	13	0	0	0	0	0	0	94	15	0	6	108	0	0	267
4:30 PM	19	0	9	0	0	0	0	0	0	91	18	0	3	149	0	0	289
4:45 PM	24	0	6	0	0	0	0	0	0	95	18	0	8	139	0	1	291
5:00 PM	30	0	8	0	0	0	0	0	0	89	17	0	9	195	0	0	348
5:15 PM	20	0	7	0	0	0	0	0	0	90	19	0	2	146	0	0	284
5:30 PM	22	0	3	0	0	0	0	0	0	63	9	0	1	145	0	0	243
5:45 PM	14	0	1	0	0	0	0	0	0	68	7	0	1	98	0	0	189
6:00 PM	13	0	3	0	0	0	0	0	0	54	9	0	3	87	0	0	169
6:15 PM	9	0	3	0	0	0	0	0	0	51	11	0	0	68	0	0	142
6:30 PM	8	0	3	0	0	0	0	0	0	50	6	0	1	63	0	0	131
6:45 PM	6	0	3	0	0	0	0	0	0	45	1	0	0	59	0	0	114
7:00 PM	9	0	5	0	0	0	0	0	0	38	1	0	0	58	0	0	111
7:15 PM	4	0	1	0	0	0	0	0	0	32	0	0	1	37	0	0	75
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	285	0	101	0	0	0	0	0	0	1141	204	0	60	1767	0	1	3559
APPROACH %'s :	73.83%	0.00%	26.17%	0.00%					0.00%	84.83%	15.17%	0.00%	3.28%	96.66%	0.00%	0.05%	
PEAK HR :	**04:30 PM - 05:30 PM**																TOTAL
PEAK HR VOL :	93	0	30	0	0	0	0	0	0	365	72	0	22	629	0	1	1212
PEAK HR FACTOR :	0.775	0.000	0.833	0.000	0.000	0.000	0.000	0.000	0.000	0.961	0.947	0.000	0.611	0.806	0.000	0.250	0.871
	0.809								0.967				0.799				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Railroad Ave & Idaho Maryland Rd
City: Grass Valley
Control: 0

Project ID: 19-07290-017
Date: 8/28/2019

Cars

NS/EW Streets:	Railroad Ave				Railroad Ave				Idaho Maryland Rd				Idaho Maryland Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:30 AM	1	0	2	0	0	0	0	0	0	103	6	0	3	21	0	0	136
6:45 AM	6	0	3	0	0	0	0	0	0	148	23	0	4	35	0	0	219
7:00 AM	11	0	1	0	0	0	0	0	0	69	16	0	5	38	0	0	140
7:15 AM	18	0	0	0	0	0	0	0	0	103	20	0	6	28	0	0	175
7:30 AM	11	0	4	0	0	0	0	0	0	102	19	0	4	49	0	0	189
7:45 AM	10	0	5	0	0	0	0	0	0	149	34	0	6	56	0	0	260
8:00 AM	15	0	3	0	0	0	0	0	0	125	27	0	9	65	0	0	244
8:15 AM	19	0	9	0	0	0	0	0	0	158	29	0	3	60	0	0	278
8:30 AM	16	0	6	0	0	0	0	0	0	123	24	0	3	78	0	0	250
8:45 AM	27	0	9	0	0	0	0	0	0	132	37	0	5	59	0	0	269
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	134	0	42	0	0	0	0	0	0	1212	235	0	48	489	0	0	2160
APPROACH %'s :	76.14%	0.00%	23.86%	0.00%					0.00%	83.76%	16.24%	0.00%	8.94%	91.06%	0.00%	0.00%	
PEAK HR :	**08:00 AM - 09:00 AM**																TOTAL
PEAK HR VOL :	77	0	27	0	0	0	0	0	0	538	117	0	20	262	0	0	1041
PEAK HR FACTOR :	0.71	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.851	0.791	0.000	0.556	0.840	0.000	0.000	0.936
	0.722								0.876				0.870				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:30 PM	25	0	7	0	0	0	0	0	0	83	26	0	8	146	0	0	295
3:45 PM	24	0	15	0	0	0	0	0	0	90	23	0	12	128	0	0	292
4:00 PM	25	0	13	0	0	0	0	0	0	94	22	0	4	133	0	0	291
4:15 PM	29	0	13	0	0	0	0	0	0	87	13	0	6	106	0	0	254
4:30 PM	18	0	9	0	0	0	0	0	0	85	18	0	3	144	0	0	277
4:45 PM	22	0	6	0	0	0	0	0	0	90	15	0	7	137	0	1	278
5:00 PM	29	0	8	0	0	0	0	0	0	79	16	0	9	195	0	0	336
5:15 PM	19	0	7	0	0	0	0	0	0	82	19	0	2	146	0	0	275
5:30 PM	22	0	3	0	0	0	0	0	0	59	8	0	1	142	0	0	235
5:45 PM	14	0	1	0	0	0	0	0	0	68	7	0	1	95	0	0	186
6:00 PM	13	0	3	0	0	0	0	0	0	53	8	0	3	85	0	0	165
6:15 PM	9	0	2	0	0	0	0	0	0	50	11	0	0	68	0	0	140
6:30 PM	8	0	3	0	0	0	0	0	0	47	6	0	1	63	0	0	128
6:45 PM	6	0	3	0	0	0	0	0	0	45	1	0	0	59	0	0	114
7:00 PM	9	0	5	0	0	0	0	0	0	36	1	0	0	57	0	0	108
7:15 PM	4	0	1	0	0	0	0	0	0	31	0	0	1	37	0	0	74
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	276	0	99	0	0	0	0	0	0	1079	194	0	58	1741	0	1	3448
APPROACH %'s :	73.60%	0.00%	26.40%	0.00%					0.00%	84.76%	15.24%	0.00%	3.22%	96.72%	0.00%	0.06%	
PEAK HR :	**04:30 PM - 05:30 PM**																TOTAL
PEAK HR VOL :	88	0	30	0	0	0	0	0	0	336	68	0	21	622	0	1	1166
PEAK HR FACTOR :	0.76	0.000	0.833	0.000	0.000	0.000	0.000	0.000	0.000	0.933	0.895	0.000	0.583	0.797	0.000	0.250	0.868
	0.797								0.962				0.789				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Railroad Ave & Idaho Maryland Rd
City: Grass Valley
Control: 0

Project ID: 19-07290-017
Date: 8/28/2019

HT

NS/EW Streets:	Railroad Ave				Railroad Ave				Idaho Maryland Rd				Idaho Maryland Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:30 AM	0	0	1	0	0	0	0	0	0	3	1	0	1	6	0	0	12
6:45 AM	2	0	0	0	0	0	0	0	0	1	1	0	1	5	0	0	10
7:00 AM	3	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	11
7:15 AM	3	0	0	0	0	0	0	0	0	2	1	0	0	4	0	0	10
7:30 AM	1	0	0	0	0	0	0	0	0	1	1	0	0	10	0	0	13
7:45 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	14	0	0	16
8:00 AM	2	0	0	0	0	0	0	0	0	2	0	0	0	4	0	0	8
8:15 AM	1	0	1	0	0	0	0	0	0	2	3	0	0	4	0	0	11
8:30 AM	1	0	1	0	0	0	0	0	0	8	1	0	2	9	0	0	22
8:45 AM	1	0	1	0	0	0	0	0	0	2	1	0	0	7	0	0	12
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	14	0	4	0	0	0	0	0	0	26	10	0	4	67	0	0	125
APPROACH %'s :	77.78%	0.00%	22.22%	0.00%					0.00%	72.22%	27.78%	0.00%	5.63%	94.37%	0.00%	0.00%	
PEAK HR :	**08:00 AM - 09:00 AM**																TOTAL
PEAK HR VOL :	5	0	3	0	0	0	0	0	0	14	5	0	2	24	0	0	53
PEAK HR FACTOR :	0.625	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.438	0.417	0.000	0.250	0.667	0.000	0.000	0.602
			1.000							0.528				0.591			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:30 PM	1	0	0	0	0	0	0	0	0	4	0	0	0	2	0	0	7
3:45 PM	1	0	1	0	0	0	0	0	0	5	1	0	0	5	0	0	13
4:00 PM	0	0	0	0	0	0	0	0	0	5	1	0	1	1	0	0	8
4:15 PM	2	0	0	0	0	0	0	0	0	7	2	0	0	2	0	0	13
4:30 PM	1	0	0	0	0	0	0	0	0	6	0	0	0	5	0	0	12
4:45 PM	2	0	0	0	0	0	0	0	0	5	3	0	1	2	0	0	13
5:00 PM	1	0	0	0	0	0	0	0	0	10	1	0	0	0	0	0	12
5:15 PM	1	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	9
5:30 PM	0	0	0	0	0	0	0	0	0	4	1	0	0	3	0	0	8
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
6:00 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	0	4
6:15 PM	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2
6:30 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
7:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	9	0	2	0	0	0	0	0	0	62	10	0	2	26	0	0	111
APPROACH %'s :	81.82%	0.00%	18.18%	0.00%					0.00%	86.11%	13.89%	0.00%	7.14%	92.86%	0.00%	0.00%	
PEAK HR :	**04:30 PM - 05:30 PM**																TOTAL
PEAK HR VOL :	5	0	0	0	0	0	0	0	0	29	4	0	1	7	0	0	46
PEAK HR FACTOR :	0.63	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.725	0.333	0.000	0.250	0.350	0.000	0.000	0.885
			0.625							0.750				0.400			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Railroad Ave & Idaho Maryland Rd
City: Grass Valley
Control: 0

Project ID: 19-07290-017
Date: 8/28/2019

Bikes

NS/EW Streets:	Railroad Ave				Railroad Ave				Idaho Maryland Rd				Idaho Maryland Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	5
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	4
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.250	0.000	0.000	0.500
										0.375				0.250			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
3:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	5	0	0	0	10	0	0	15
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250
														0.250			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Railroad Ave & Idaho Maryland Rd
City: Grass Valley

Project ID: 19-07290-017
Date: 8/28/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Railroad Ave		Railroad Ave		Idaho Maryland Rd		Idaho Maryland Rd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:30 AM	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	1	0	0	0	0	1
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	1	0	0	0	0	1
APPROACH %'s :			0.00%	100.00%					
PEAK HR :	**08:00 AM - 09:00 AM**								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	1	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	1	0	0	0	0	1
APPROACH %'s :			0.00%	100.00%					
PEAK HR :	**04:30 PM - 05:30 PM**								TOTAL
PEAK HR VOL :	0	0	0	1	0	0	0	0	1
PEAK HR FACTOR :				0.250					0.250
			0.250						

Prepared by National Data & Surveying Services

SR 49 SB Ramps & E Main St/Idaho Maryland Rd

Peak Hour Turning Movement Count

ID: 19-07290-006
City: Grass Valley

Day: Wednesday
Date: 08/28/2019

PEAK HOURS

AM: 08:00 AM - 09:00 AM
NOON: NONE
PM: 04:30 PM - 05:30 PM

COUNT PERIODS

AM: 06:30 AM - 09:30 AM
NOON: NONE
PM: 03:30 PM - 07:30 PM

SR 49 SB Ramps — SOUTHBOUND

AM	186	165	107	6	553	AM
NOON	0	0	0	0	0	NOON
PM	313	202	65	4	483	PM

EASTBOUND — E Main St/Idaho Maryland Rd

AM	NOON	PM	
334	0	611	⇦
1	0	1	↰ 0
247	0	196	↱ 0
133	0	88	→ 0
13	0	33	↳ 0
AM	NOON	PM	

WESTBOUND — E Main St/Idaho Maryland Rd

PM	NOON	AM	
221	0	243	↰ 0
234	0	120	← 0
296	0	183	↱ 0
6	0	4	↳ 0
228	0	318	⇨
PM	NOON	AM	

CONTROL

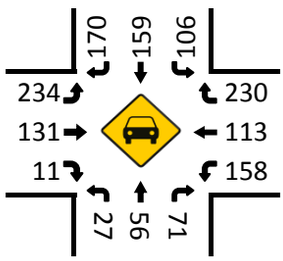
0

	AM	NOON	PM
TEV	1566	0	1853
PHF	0.90		0.95

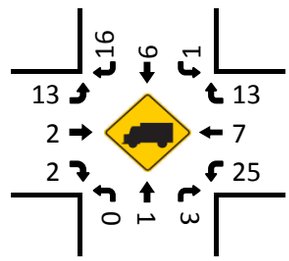
SR 49 SB Ramps — NORTHBOUND

PM	531	0	63	62	69	PM
NOON	0	0	0	0	0	NOON
AM	361	0	27	57	74	AM

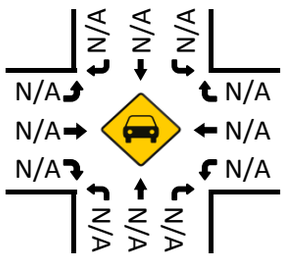
Cars (AM)



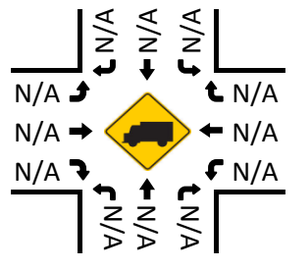
HT (AM)



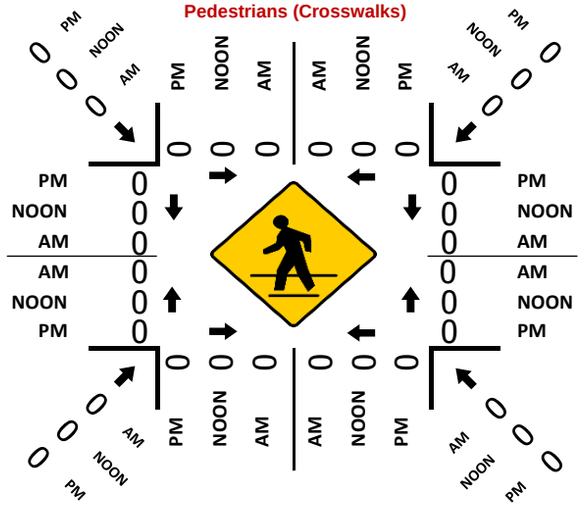
Cars (NOON)



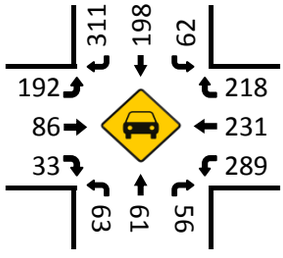
HT (NOON)



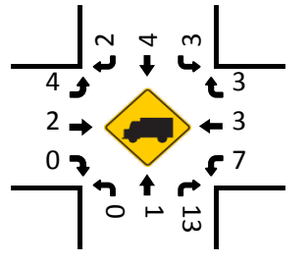
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49 SB Ramps & E Main St/Idaho Maryland Rd
City: Grass Valley
Control:

Project ID: 19-07290-006
Date: 8/28/2019

Total

NS/EW Streets:	SR 49 SB Ramps				SR 49 SB Ramps				E Main St/Idaho Maryland Rd				E Main St/Idaho Maryland Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:30 AM	1	1	4	0	10	22	11	0	16	10	1	1	15	11	8	1	112
6:45 AM	0	0	0	0	13	21	12	1	31	24	7	0	17	12	17	1	156
7:00 AM	6	12	21	0	15	33	19	0	30	25	5	0	21	12	33	1	233
7:15 AM	3	3	9	0	13	42	17	0	36	24	5	0	25	9	33	0	219
7:30 AM	0	0	1	0	11	35	29	1	40	21	5	0	39	18	56	0	256
7:45 AM	0	0	0	0	29	30	43	0	48	41	3	0	51	20	50	0	315
8:00 AM	9	12	12	0	34	47	41	3	52	28	3	1	48	20	66	1	377
8:15 AM	9	13	24	0	23	54	39	2	65	42	3	0	51	33	76	0	434
8:30 AM	7	16	21	0	22	33	57	0	53	28	1	0	44	38	56	1	377
8:45 AM	2	16	17	0	28	31	49	1	77	35	6	0	40	29	45	2	378
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	37	73	109	0	198	348	317	8	448	278	39	2	351	202	440	7	2857
APPROACH %'s :	16.89%	33.33%	49.77%	0.00%	22.73%	39.95%	36.39%	0.92%	58.41%	36.25%	5.08%	0.26%	35.10%	20.20%	44.00%	0.70%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	27	57	74	0	107	165	186	6	247	133	13	1	183	120	243	4	1566
PEAK HR FACTOR :	0.750	0.891	0.771	0.000	0.787	0.764	0.816	0.500	0.802	0.792	0.542	0.250	0.897	0.789	0.799	0.500	0.902
	0.859				0.928				0.835				0.859				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:30 PM	10	9	22	0	17	63	67	0	48	23	12	1	82	44	45	0	443
3:45 PM	12	12	20	0	27	61	88	2	42	22	11	0	69	43	50	0	459
4:00 PM	13	13	19	0	23	48	76	0	52	30	7	0	84	54	52	0	471
4:15 PM	16	14	22	0	16	49	67	0	43	17	9	0	71	58	52	0	434
4:30 PM	18	20	25	0	16	43	84	1	39	23	5	0	80	60	52	0	466
4:45 PM	18	10	16	0	22	42	82	0	43	21	8	0	64	53	50	3	432
5:00 PM	15	17	21	0	11	60	74	2	56	23	10	1	82	59	55	2	488
5:15 PM	12	15	7	0	16	57	73	1	58	21	10	0	70	62	64	1	467
5:30 PM	6	18	12	0	7	37	62	3	44	13	4	0	82	60	47	0	395
5:45 PM	14	9	10	0	19	45	67	0	36	22	5	0	70	38	36	0	371
6:00 PM	13	12	6	0	14	49	64	0	41	21	8	0	51	45	34	0	358
6:15 PM	12	11	6	0	7	50	47	0	51	21	7	0	38	43	30	0	323
6:30 PM	11	8	5	0	13	37	53	0	45	21	6	0	39	35	27	0	300
6:45 PM	7	6	3	0	11	40	46	3	41	16	9	0	35	38	18	0	273
7:00 PM	8	7	4	0	9	22	38	0	45	11	2	0	26	32	19	0	223
7:15 PM	4	8	0	0	7	32	39	0	42	15	3	1	19	28	13	0	211
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	189	189	198	0	235	735	1027	12	726	320	116	3	962	752	644	6	6114
APPROACH %'s :	32.81%	32.81%	34.38%	0.00%	11.70%	36.59%	51.12%	0.60%	62.32%	27.47%	9.96%	0.26%	40.69%	31.81%	27.24%	0.25%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	63	62	69	0	65	202	313	4	196	88	33	1	296	234	221	6	1853
PEAK HR FACTOR :	0.875	0.775	0.690	0.000	0.739	0.842	0.932	0.500	0.845	0.957	0.825	0.250	0.902	0.944	0.863	0.500	0.949
	0.770				0.993				0.883				0.956				

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49 SB Ramps & E Main St/Idaho Maryland Rd
City: Grass Valley
Control: 0

Project ID: 19-07290-006
Date: 8/28/2019

Cars

NS/EW Streets:	SR 49 SB Ramps				SR 49 SB Ramps				E Main St/Idaho Maryland Rd				E Main St/Idaho Maryland Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:30 AM	1	1	4	0	10	22	10	0	16	10	1	1	12	9	6	1	104
6:45 AM	0	0	0	0	13	21	10	1	31	24	7	0	12	11	17	1	148
7:00 AM	6	12	21	0	15	32	17	0	30	25	5	0	17	12	30	1	223
7:15 AM	3	3	9	0	13	41	16	0	36	24	5	0	21	8	30	0	209
7:30 AM	0	0	1	0	11	33	29	1	39	21	5	0	34	18	55	0	247
7:45 AM	0	0	0	0	28	30	41	0	47	41	3	0	38	20	50	0	298
8:00 AM	9	12	12	0	34	46	41	3	49	28	3	1	35	19	61	1	354
8:15 AM	9	12	22	0	23	50	36	2	60	41	3	0	46	30	71	0	405
8:30 AM	7	16	21	0	22	33	53	0	51	27	1	0	42	37	54	1	365
8:45 AM	2	16	16	0	27	30	40	1	74	35	4	0	35	27	44	2	353
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	37	72	106	0	196	338	293	8	433	276	37	2	292	191	418	7	2706
APPROACH %'s :	17.21%	33.49%	49.30%	0.00%	23.47%	40.48%	35.09%	0.96%	57.89%	36.90%	4.95%	0.27%	32.16%	21.04%	46.04%	0.77%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	27	56	71	0	106	159	170	6	234	131	11	1	158	113	230	4	1477
PEAK HR FACTOR :	0.75	0.875	0.807	0.000	0.779	0.795	0.802	0.500	0.791	0.799	0.688	0.250	0.859	0.764	0.810	0.500	0.912
		0.875				0.889				0.834				0.859			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:30 PM	10	9	20	0	17	61	65	0	46	22	12	1	81	43	44	0	431
3:45 PM	12	12	19	0	27	59	85	2	42	21	11	0	67	41	47	0	445
4:00 PM	13	13	14	0	22	48	75	0	50	28	7	0	82	54	51	0	457
4:15 PM	16	14	19	0	16	46	65	0	43	17	9	0	69	57	52	0	423
4:30 PM	18	19	21	0	14	42	83	1	36	22	5	0	77	57	52	0	447
4:45 PM	18	10	14	0	21	42	81	0	43	21	8	0	61	53	49	3	424
5:00 PM	15	17	14	0	11	58	74	2	55	22	10	1	82	59	55	2	477
5:15 PM	12	15	7	0	16	56	73	1	58	21	10	0	69	62	62	1	463
5:30 PM	6	18	12	0	7	37	62	3	43	13	4	0	79	60	45	0	389
5:45 PM	14	9	10	0	17	44	66	0	36	22	5	0	70	37	36	0	366
6:00 PM	13	11	6	0	14	48	64	0	40	19	8	0	51	45	34	0	353
6:15 PM	12	11	5	0	7	50	44	0	51	21	7	0	37	43	30	0	318
6:30 PM	11	8	5	0	13	37	53	0	44	21	6	0	38	34	27	0	297
6:45 PM	7	6	3	0	11	39	45	3	41	16	9	0	35	38	18	0	271
7:00 PM	8	7	4	0	9	22	38	0	43	11	2	0	26	32	19	0	221
7:15 PM	4	8	0	0	7	31	38	0	42	15	3	1	18	28	13	0	208
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	189	187	173	0	229	720	1011	12	713	312	116	3	942	743	634	6	5990
APPROACH %'s :	34.43%	34.06%	31.51%	0.00%	11.61%	36.51%	51.27%	0.61%	62.33%	27.27%	10.14%	0.26%	40.52%	31.96%	27.27%	0.26%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	63	61	56	0	62	198	311	4	192	86	33	1	289	231	218	6	1811
PEAK HR FACTOR :	0.88	0.803	0.667	0.000	0.738	0.853	0.937	0.500	0.828	0.977	0.825	0.250	0.881	0.931	0.879	0.500	0.949
		0.776				0.985				0.876				0.939			

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49 SB Ramps & E Main St/Idaho Maryland Rd
City: Grass Valley
Control: 0

Project ID: 19-07290-006
Date: 8/28/2019

HT

NS/EW Streets:	SR 49 SB Ramps				SR 49 SB Ramps				E Main St/Idaho Maryland Rd				E Main St/Idaho Maryland Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	TOTAL
6:30 AM	0	0	0	0	0	0	1	0	0	0	0	0	3	2	2	0	8
6:45 AM	0	0	0	0	0	0	2	0	0	0	0	0	5	1	0	0	8
7:00 AM	0	0	0	0	0	1	2	0	0	0	0	0	4	0	3	0	10
7:15 AM	0	0	0	0	0	1	1	0	0	0	0	0	4	1	3	0	10
7:30 AM	0	0	0	0	0	2	0	0	1	0	0	0	5	0	1	0	9
7:45 AM	0	0	0	0	1	0	2	0	1	0	0	0	13	0	0	0	17
8:00 AM	0	0	0	0	0	1	0	0	3	0	0	0	13	1	5	0	23
8:15 AM	0	1	2	0	0	4	3	0	5	1	0	0	5	3	5	0	29
8:30 AM	0	0	0	0	0	0	4	0	2	1	0	0	2	1	2	0	12
8:45 AM	0	0	1	0	1	1	9	0	3	0	2	0	5	2	1	0	25
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	3	0	2	10	24	0	15	2	2	0	59	11	22	0	151
APPROACH %'s :	0.00%	25.00%	75.00%	0.00%	5.56%	27.78%	66.67%	0.00%	78.95%	10.53%	10.53%	0.00%	64.13%	11.96%	23.91%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	1	3	0	1	6	16	0	13	2	2	0	25	7	13	0	89
PEAK HR FACTOR :	0.000	0.250	0.375	0.000	0.250	0.375	0.444	0.000	0.650	0.500	0.250	0.000	0.481	0.583	0.650	0.000	0.767
		0.333				0.523				0.708				0.592			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	TOTAL
3:30 PM	0	0	2	0	0	2	2	0	2	1	0	0	1	1	1	0	12
3:45 PM	0	0	1	0	0	2	3	0	0	1	0	0	2	2	3	0	14
4:00 PM	0	0	5	0	1	0	1	0	2	2	0	0	2	0	1	0	14
4:15 PM	0	0	3	0	0	3	2	0	0	0	0	0	2	1	0	0	11
4:30 PM	0	1	4	0	2	1	1	0	3	1	0	0	3	3	0	0	19
4:45 PM	0	0	2	0	1	0	1	0	0	0	0	0	3	0	1	0	8
5:00 PM	0	0	7	0	0	2	0	0	1	1	0	0	0	0	0	0	11
5:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	2	0	4
5:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	3	0	2	0	6
5:45 PM	0	0	0	0	2	1	1	0	0	0	0	0	0	1	0	0	5
6:00 PM	0	1	0	0	0	1	0	0	1	2	0	0	0	0	0	0	5
6:15 PM	0	0	1	0	0	0	3	0	0	0	0	0	1	0	0	0	5
6:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	3
6:45 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
7:00 PM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
7:15 PM	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2	25	0	6	15	16	0	13	8	0	0	20	9	10	0	124
APPROACH %'s :	0.00%	7.41%	92.59%	0.00%	16.22%	40.54%	43.24%	0.00%	61.90%	38.10%	0.00%	0.00%	51.28%	23.08%	25.64%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	1	13	0	3	4	2	0	4	2	0	0	7	3	3	0	42
PEAK HR FACTOR :	0.00	0.250	0.464	0.000	0.375	0.500	0.500	0.000	0.333	0.500	0.000	0.000	0.583	0.250	0.375	0.000	0.553
		0.500				0.563				0.375				0.542			

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49 SB Ramps & E Main St/Idaho Maryland Rd
City: Grass Valley
Control: 0

Project ID: 19-07290-006
Date: 8/28/2019

Bikes

NS/EW Streets:	SR 49 SB Ramps				SR 49 SB Ramps				E Main St/Idaho Maryland Rd				E Main St/Idaho Maryland Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
6:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
7:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
7:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	4	0	1	1	0	0	0	5	1	0	12
APPROACH %'s :					0.00%	0.00%	100.00%	0.00%	50.00%	50.00%	0.00%	0.00%	0.00%	83.33%	16.67%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0	0	4
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.500
							0.250								0.500		

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49 SB Ramps & E Main St/Idaho Maryland Rd
City: Grass Valley
Project ID: 19-07290-006
Date: 8/28/2019

Pedestrians (Crosswalks)

NS/EW Streets:	SR 49 SB Ramps		SR 49 SB Ramps		E Main St/Idaho Maryland Rd		E Main St/Idaho Maryland Rd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:30 AM	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	08:00 AM - 09:00 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	1	0	0	0	1
6:15 PM	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	1	0	0	0	1
7:00 PM	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	2	0	0	0	2
APPROACH %'s :					100.00%	0.00%			
PEAK HR :	04:30 PM - 05:30 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Prepared by National Data & Surveying Services

Ophir St & Bennett St

Peak Hour Turning Movement Count

ID: 22-070033-001
City: Grass Valley

Day: Thursday
Date: 2/17/2022

PEAK HOURS

AM: 08:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 05:00 PM

COUNT PERIODS

AM: 7:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 06:00 PM

SOUTHBOUND (Ophir St)

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

EASTBOUND (Bennett St)

AM	NOON	PM		
385	0	197	⇦	
0	0	0	↶	0
0	0	0	↱	0
54	0	82	→	1
159	0	201	↷	0
AM	NOON	PM		

WESTBOUND (Bennett St)

PM	NOON	AM		
0	0	0	↶	0
65	0	91	←	1
73	0	60	↰	0
0	0	0	↷	0
141	0	100	⇨	
PM	NOON	AM		

NORTHBOUND (Ophir St)

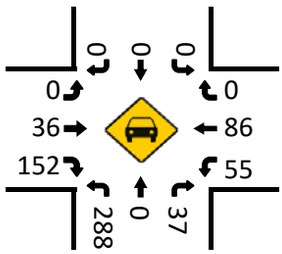
PM	274	0	132	0	59	PM
NOON	0	0	0	0	0	NOON
AM	219	0	294	0	46	AM

CONTROL

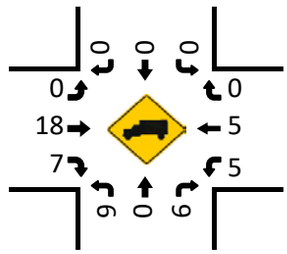
2-Way Stop(EB/WB)

TEV	704 AM	0 NOON	612 PM
PHF	0.81		0.97

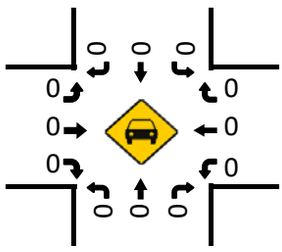
Cars (AM)



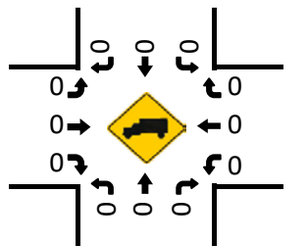
HT (AM)



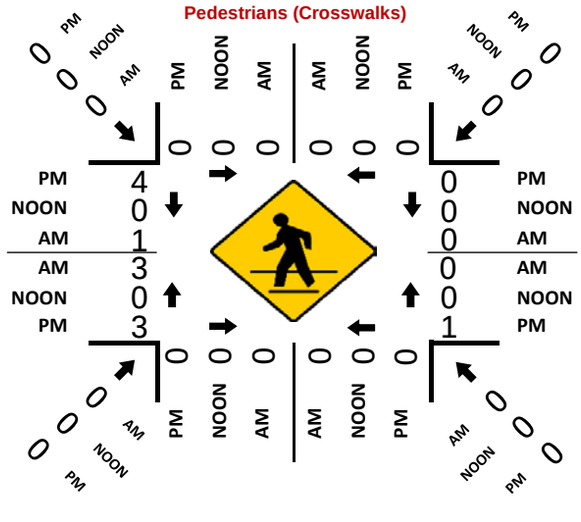
Cars (NOON)



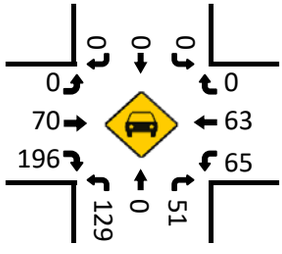
HT (NOON)



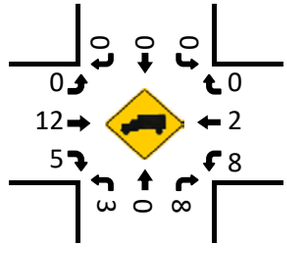
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: Ophir St & Bennett St
City: Grass Valley
Control: 2-Way Stop(EB/WB)

Project ID: 22-070033-001
Date: 2/17/2022

Data - Total

NS/EW Streets:	Ophir St				Ophir St				Bennett St				Bennett St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	20	0	8	0	0	0	0	0	0	5	12	0	7	21	0	0	73
7:15 AM	25	0	14	0	0	0	0	0	0	6	16	0	11	12	0	0	84
7:30 AM	31	0	10	0	0	0	0	0	0	13	22	0	12	20	0	0	108
7:45 AM	48	0	11	0	0	0	0	0	0	6	28	0	21	15	0	0	129
8:00 AM	70	0	7	0	0	0	0	0	0	7	34	0	12	16	0	0	146
8:15 AM	87	0	16	0	0	0	0	0	0	13	58	0	11	32	0	0	217
8:30 AM	82	0	13	0	0	0	0	0	0	17	31	0	14	22	0	0	179
8:45 AM	55	0	10	0	0	0	0	0	0	17	36	0	23	21	0	0	162
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	418	0	89	0	0	0	0	0	0	84	237	0	111	159	0	0	1098
APPROACH %'s :	82.45%	0.00%	17.55%	0.00%					0.00%	26.17%	73.83%	0.00%	41.11%	58.89%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	294	0	46	0	0	0	0	0	0	54	159	0	60	91	0	0	704
PEAK HR FACTOR :	0.845	0.000	0.719	0.000	0.000	0.000	0.000	0.000	0.000	0.794	0.685	0.000	0.652	0.711	0.000	0.000	0.811
	0.825								0.750				0.858				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	31	0	16	0	0	0	0	0	0	21	53	0	19	16	0	0	156
4:15 PM	39	0	14	0	0	0	0	0	0	20	43	0	13	15	0	0	144
4:30 PM	29	0	16	0	0	0	0	0	0	22	50	0	21	16	0	0	154
4:45 PM	33	0	13	0	0	0	0	0	0	19	55	0	20	18	0	0	158
5:00 PM	28	0	16	0	0	0	0	0	0	16	58	1	17	17	0	0	153
5:15 PM	31	0	15	0	0	0	0	0	0	12	57	0	13	11	0	0	139
5:30 PM	40	0	12	0	0	0	0	0	0	12	51	0	15	11	0	0	141
5:45 PM	27	0	13	0	0	0	0	0	0	10	29	0	7	13	0	0	99
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	258	0	115	0	0	0	0	0	0	132	396	1	125	117	0	0	1144
APPROACH %'s :	69.17%	0.00%	30.83%	0.00%					0.00%	24.95%	74.86%	0.19%	51.65%	48.35%	0.00%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	132	0	59	0	0	0	0	0	0	82	201	0	73	65	0	0	612
PEAK HR FACTOR :	0.846	0.000	0.922	0.000	0.000	0.000	0.000	0.000	0.000	0.932	0.914	0.000	0.869	0.903	0.000	0.000	0.968
	0.901								0.956				0.908				

National Data & Surveying Services Intersection Turning Movement Count

Location: Ophir St & Bennett St
City: Grass Valley
Control: 2-Way Stop(EB/WB)

Project ID: 22-070033-001
Date: 2/17/2022

Data - Cars

NS/EW Streets:	Ophir St				Ophir St				Bennett St				Bennett St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	20	0	7	0	0	0	0	0	0	5	12	0	3	11	0	0	58
7:15 AM	24	0	13	0	0	0	0	0	0	6	14	0	7	7	0	0	71
7:30 AM	30	0	10	0	0	0	0	0	0	11	21	0	11	17	0	0	100
7:45 AM	48	0	10	0	0	0	0	0	0	6	26	0	19	14	0	0	123
8:00 AM	68	0	7	0	0	0	0	0	0	7	33	0	12	14	0	0	141
8:15 AM	85	0	14	0	0	0	0	0	0	9	54	0	11	31	0	0	204
8:30 AM	81	0	10	0	0	0	0	0	0	10	31	0	10	22	0	0	164
8:45 AM	54	0	6	0	0	0	0	0	0	10	34	0	22	19	0	0	145
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	410	0	77	0	0	0	0	0	0	64	225	0	95	135	0	0	1006
APPROACH %'s :	84.19%	0.00%	15.81%	0.00%					0.00%	22.15%	77.85%	0.00%	41.30%	58.70%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	288	0	37	0	0	0	0	0	0	36	152	0	55	86	0	0	654
PEAK HR FACTOR :	0.847	0.000	0.661	0.000	0.000	0.000	0.000	0.000	0.000	0.900	0.704	0.000	0.625	0.694	0.000	0.000	0.801
	0.821								0.746				0.839				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	31	0	14	0	0	0	0	0	0	20	51	0	18	15	0	0	149
4:15 PM	38	0	13	0	0	0	0	0	0	17	41	0	11	15	0	0	135
4:30 PM	28	0	12	0	0	0	0	0	0	19	49	0	20	15	0	0	143
4:45 PM	32	0	12	0	0	0	0	0	0	14	55	0	16	18	0	0	147
5:00 PM	28	0	16	0	0	0	0	0	0	15	56	1	17	16	0	0	149
5:15 PM	30	0	15	0	0	0	0	0	0	11	55	0	11	11	0	0	133
5:30 PM	39	0	10	0	0	0	0	0	0	12	51	0	14	11	0	0	137
5:45 PM	27	0	13	0	0	0	0	0	0	9	28	0	7	13	0	0	97
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	253	0	105	0	0	0	0	0	0	117	386	1	114	114	0	0	1090
APPROACH %'s :	70.67%	0.00%	29.33%	0.00%					0.00%	23.21%	76.59%	0.20%	50.00%	50.00%	0.00%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	129	0	51	0	0	0	0	0	0	70	196	0	65	63	0	0	574
PEAK HR FACTOR :	0.849	0.000	0.911	0.000	0.000	0.000	0.000	0.000	0.000	0.875	0.891	0.000	0.813	0.875	0.000	0.000	0.963
	0.882								0.937				0.914				

National Data & Surveying Services Intersection Turning Movement Count

Location: Ophir St & Bennett St
City: Grass Valley
Control: 2-Way Stop(EB/WB)

Project ID: 22-070033-001
Date: 2/17/2022

Data - HT

NS/EW Streets:	Ophir St				Ophir St				Bennett St				Bennett St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	4	10	0	0	15
7:15 AM	1	0	1	0	0	0	0	0	0	0	2	0	4	5	0	0	13
7:30 AM	1	0	0	0	0	0	0	0	0	2	1	0	1	3	0	0	8
7:45 AM	0	0	1	0	0	0	0	0	0	0	2	0	2	1	0	0	6
8:00 AM	2	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	5
8:15 AM	2	0	2	0	0	0	0	0	0	4	4	0	0	1	0	0	13
8:30 AM	1	0	3	0	0	0	0	0	0	7	0	0	4	0	0	0	15
8:45 AM	1	0	4	0	0	0	0	0	0	7	2	0	1	2	0	0	17
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	8	0	12	0	0	0	0	0	0	20	12	0	16	24	0	0	92
APPROACH %'s :	40.00%	0.00%	60.00%	0.00%					0.00%	62.50%	37.50%	0.00%	40.00%	60.00%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	6	0	9	0	0	0	0	0	0	18	7	0	5	5	0	0	50
PEAK HR FACTOR :	0.750	0.000	0.563	0.000	0.000	0.000	0.000	0.000	0.000	0.643	0.438	0.000	0.313	0.625	0.000	0.000	0.735
	0.750								0.694				0.625				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	2	0	0	0	0	0	0	1	2	0	1	1	0	0	7
4:15 PM	1	0	1	0	0	0	0	0	0	3	2	0	2	0	0	0	9
4:30 PM	1	0	4	0	0	0	0	0	0	3	1	0	1	1	0	0	11
4:45 PM	1	0	1	0	0	0	0	0	0	5	0	0	4	0	0	0	11
5:00 PM	0	0	0	0	0	0	0	0	0	1	2	0	0	1	0	0	4
5:15 PM	1	0	0	0	0	0	0	0	0	1	2	0	2	0	0	0	6
5:30 PM	1	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	4
5:45 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	5	0	10	0	0	0	0	0	0	15	10	0	11	3	0	0	54
APPROACH %'s :	33.33%	0.00%	66.67%	0.00%					0.00%	60.00%	40.00%	0.00%	78.57%	21.43%	0.00%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	3	0	8	0	0	0	0	0	0	12	5	0	8	2	0	0	38
PEAK HR FACTOR :	0.750	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.600	0.625	0.000	0.500	0.500	0.000	0.000	0.864
	0.550								0.850				0.625				

National Data & Surveying Services Intersection Turning Movement Count

Location: Ophir St & Bennett St
City: Grass Valley
Control: 2-Way Stop(EB/WB)

Project ID: 22-070033-001
Date: 2/17/2022

Data - Bikes

NS/EW Streets:	Ophir St				Ophir St				Bennett St				Bennett St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
APPROACH %'s :													100.00%	0.00%	0.00%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250
													0.250				

Prepared by National Data & Surveying Services

SR 49 SB Ramps & E Main St/Idaho Maryland Rd

Peak Hour Turning Movement Count

ID: 19-07290-006
City: Grass Valley

Day: Wednesday
Date: 08/28/2019

PEAK HOURS

AM: 08:00 AM - 09:00 AM
NOON: NONE
PM: 04:30 PM - 05:30 PM

COUNT PERIODS

AM: 06:30 AM - 09:30 AM
NOON: NONE
PM: 03:30 PM - 07:30 PM

SR 49 SB Ramps — SOUTHBOUND

AM	186	165	107	6	553	AM
NOON	0	0	0	0	0	NOON
PM	313	202	65	4	483	PM

EASTBOUND — E Main St/Idaho Maryland Rd

AM	NOON	PM	
334	0	611	⇦
1	0	1	↰ 0
247	0	196	↱ 0
133	0	88	→ 0
13	0	33	↳ 0
AM	NOON	PM	

WESTBOUND — E Main St/Idaho Maryland Rd

PM	NOON	AM	
221	0	243	↰ 0
234	0	120	← 0
296	0	183	↱ 0
6	0	4	↳ 0
228	0	318	⇨
PM	NOON	AM	

CONTROL

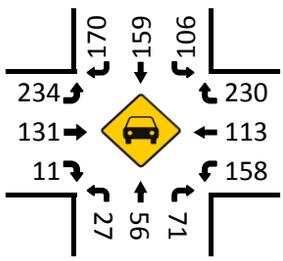
0

	AM	NOON	PM
TEV	1566	0	1853
PHF	0.90		0.95

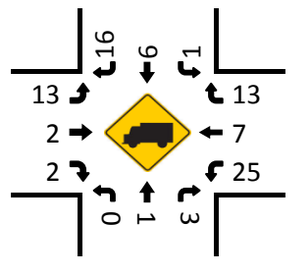
SR 49 SB Ramps — NORTHBOUND

PM	531	0	63	62	69	PM
NOON	0	0	0	0	0	NOON
AM	361	0	27	57	74	AM

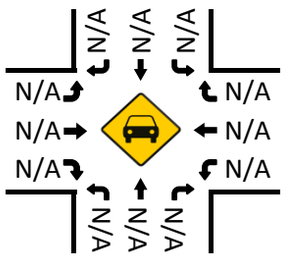
Cars (AM)



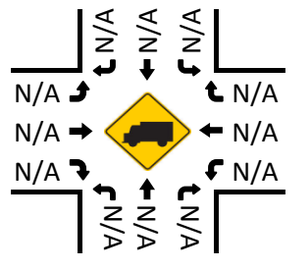
HT (AM)



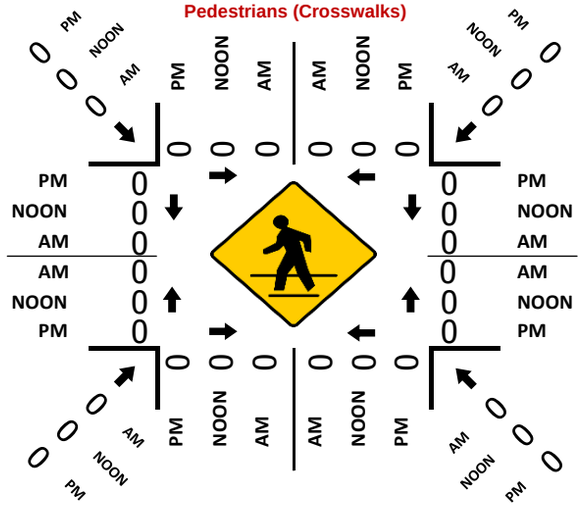
Cars (NOON)



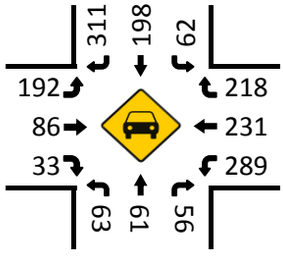
HT (NOON)



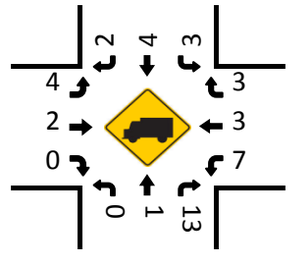
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49 SB Ramps & E Main St/Idaho Maryland Rd
City: Grass Valley
Control:

Project ID: 19-07290-006
Date: 8/28/2019

Total

NS/EW Streets:	SR 49 SB Ramps				SR 49 SB Ramps				E Main St/Idaho Maryland Rd				E Main St/Idaho Maryland Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:30 AM	1	1	4	0	10	22	11	0	16	10	1	1	15	11	8	1	112
6:45 AM	0	0	0	0	13	21	12	1	31	24	7	0	17	12	17	1	156
7:00 AM	6	12	21	0	15	33	19	0	30	25	5	0	21	12	33	1	233
7:15 AM	3	3	9	0	13	42	17	0	36	24	5	0	25	9	33	0	219
7:30 AM	0	0	1	0	11	35	29	1	40	21	5	0	39	18	56	0	256
7:45 AM	0	0	0	0	29	30	43	0	48	41	3	0	51	20	50	0	315
8:00 AM	9	12	12	0	34	47	41	3	52	28	3	1	48	20	66	1	377
8:15 AM	9	13	24	0	23	54	39	2	65	42	3	0	51	33	76	0	434
8:30 AM	7	16	21	0	22	33	57	0	53	28	1	0	44	38	56	1	377
8:45 AM	2	16	17	0	28	31	49	1	77	35	6	0	40	29	45	2	378
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	37	73	109	0	198	348	317	8	448	278	39	2	351	202	440	7	2857
APPROACH %'s :	16.89%	33.33%	49.77%	0.00%	22.73%	39.95%	36.39%	0.92%	58.41%	36.25%	5.08%	0.26%	35.10%	20.20%	44.00%	0.70%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	27	57	74	0	107	165	186	6	247	133	13	1	183	120	243	4	1566
PEAK HR FACTOR :	0.750	0.891	0.771	0.000	0.787	0.764	0.816	0.500	0.802	0.792	0.542	0.250	0.897	0.789	0.799	0.500	0.902
	0.859				0.928				0.835				0.859				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:30 PM	10	9	22	0	17	63	67	0	48	23	12	1	82	44	45	0	443
3:45 PM	12	12	20	0	27	61	88	2	42	22	11	0	69	43	50	0	459
4:00 PM	13	13	19	0	23	48	76	0	52	30	7	0	84	54	52	0	471
4:15 PM	16	14	22	0	16	49	67	0	43	17	9	0	71	58	52	0	434
4:30 PM	18	20	25	0	16	43	84	1	39	23	5	0	80	60	52	0	466
4:45 PM	18	10	16	0	22	42	82	0	43	21	8	0	64	53	50	3	432
5:00 PM	15	17	21	0	11	60	74	2	56	23	10	1	82	59	55	2	488
5:15 PM	12	15	7	0	16	57	73	1	58	21	10	0	70	62	64	1	467
5:30 PM	6	18	12	0	7	37	62	3	44	13	4	0	82	60	47	0	395
5:45 PM	14	9	10	0	19	45	67	0	36	22	5	0	70	38	36	0	371
6:00 PM	13	12	6	0	14	49	64	0	41	21	8	0	51	45	34	0	358
6:15 PM	12	11	6	0	7	50	47	0	51	21	7	0	38	43	30	0	323
6:30 PM	11	8	5	0	13	37	53	0	45	21	6	0	39	35	27	0	300
6:45 PM	7	6	3	0	11	40	46	3	41	16	9	0	35	38	18	0	273
7:00 PM	8	7	4	0	9	22	38	0	45	11	2	0	26	32	19	0	223
7:15 PM	4	8	0	0	7	32	39	0	42	15	3	1	19	28	13	0	211
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	189	189	198	0	235	735	1027	12	726	320	116	3	962	752	644	6	6114
APPROACH %'s :	32.81%	32.81%	34.38%	0.00%	11.70%	36.59%	51.12%	0.60%	62.32%	27.47%	9.96%	0.26%	40.69%	31.81%	27.24%	0.25%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	63	62	69	0	65	202	313	4	196	88	33	1	296	234	221	6	1853
PEAK HR FACTOR :	0.875	0.775	0.690	0.000	0.739	0.842	0.932	0.500	0.845	0.957	0.825	0.250	0.902	0.944	0.863	0.500	0.949
	0.770				0.993				0.883				0.956				

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49 SB Ramps & E Main St/Idaho Maryland Rd
City: Grass Valley
Control: 0

Project ID: 19-07290-006
Date: 8/28/2019

Cars

NS/EW Streets:	SR 49 SB Ramps				SR 49 SB Ramps				E Main St/Idaho Maryland Rd				E Main St/Idaho Maryland Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:30 AM	1	1	4	0	10	22	10	0	16	10	1	1	12	9	6	1	104
6:45 AM	0	0	0	0	13	21	10	1	31	24	7	0	12	11	17	1	148
7:00 AM	6	12	21	0	15	32	17	0	30	25	5	0	17	12	30	1	223
7:15 AM	3	3	9	0	13	41	16	0	36	24	5	0	21	8	30	0	209
7:30 AM	0	0	1	0	11	33	29	1	39	21	5	0	34	18	55	0	247
7:45 AM	0	0	0	0	28	30	41	0	47	41	3	0	38	20	50	0	298
8:00 AM	9	12	12	0	34	46	41	3	49	28	3	1	35	19	61	1	354
8:15 AM	9	12	22	0	23	50	36	2	60	41	3	0	46	30	71	0	405
8:30 AM	7	16	21	0	22	33	53	0	51	27	1	0	42	37	54	1	365
8:45 AM	2	16	16	0	27	30	40	1	74	35	4	0	35	27	44	2	353
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	37	72	106	0	196	338	293	8	433	276	37	2	292	191	418	7	2706
APPROACH %'s :	17.21%	33.49%	49.30%	0.00%	23.47%	40.48%	35.09%	0.96%	57.89%	36.90%	4.95%	0.27%	32.16%	21.04%	46.04%	0.77%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	27	56	71	0	106	159	170	6	234	131	11	1	158	113	230	4	1477
PEAK HR FACTOR :	0.75	0.875	0.807	0.000	0.779	0.795	0.802	0.500	0.791	0.799	0.688	0.250	0.859	0.764	0.810	0.500	0.912
		0.875				0.889				0.834				0.859			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:30 PM	10	9	20	0	17	61	65	0	46	22	12	1	81	43	44	0	431
3:45 PM	12	12	19	0	27	59	85	2	42	21	11	0	67	41	47	0	445
4:00 PM	13	13	14	0	22	48	75	0	50	28	7	0	82	54	51	0	457
4:15 PM	16	14	19	0	16	46	65	0	43	17	9	0	69	57	52	0	423
4:30 PM	18	19	21	0	14	42	83	1	36	22	5	0	77	57	52	0	447
4:45 PM	18	10	14	0	21	42	81	0	43	21	8	0	61	53	49	3	424
5:00 PM	15	17	14	0	11	58	74	2	55	22	10	1	82	59	55	2	477
5:15 PM	12	15	7	0	16	56	73	1	58	21	10	0	69	62	62	1	463
5:30 PM	6	18	12	0	7	37	62	3	43	13	4	0	79	60	45	0	389
5:45 PM	14	9	10	0	17	44	66	0	36	22	5	0	70	37	36	0	366
6:00 PM	13	11	6	0	14	48	64	0	40	19	8	0	51	45	34	0	353
6:15 PM	12	11	5	0	7	50	44	0	51	21	7	0	37	43	30	0	318
6:30 PM	11	8	5	0	13	37	53	0	44	21	6	0	38	34	27	0	297
6:45 PM	7	6	3	0	11	39	45	3	41	16	9	0	35	38	18	0	271
7:00 PM	8	7	4	0	9	22	38	0	43	11	2	0	26	32	19	0	221
7:15 PM	4	8	0	0	7	31	38	0	42	15	3	1	18	28	13	0	208
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	189	187	173	0	229	720	1011	12	713	312	116	3	942	743	634	6	5990
APPROACH %'s :	34.43%	34.06%	31.51%	0.00%	11.61%	36.51%	51.27%	0.61%	62.33%	27.27%	10.14%	0.26%	40.52%	31.96%	27.27%	0.26%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	63	61	56	0	62	198	311	4	192	86	33	1	289	231	218	6	1811
PEAK HR FACTOR :	0.88	0.803	0.667	0.000	0.738	0.853	0.937	0.500	0.828	0.977	0.825	0.250	0.881	0.931	0.879	0.500	0.949
		0.776				0.985				0.876				0.939			

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49 SB Ramps & E Main St/Idaho Maryland Rd
City: Grass Valley
Control: 0

Project ID: 19-07290-006
Date: 8/28/2019

HT

NS/EW Streets:	SR 49 SB Ramps				SR 49 SB Ramps				E Main St/Idaho Maryland Rd				E Main St/Idaho Maryland Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	TOTAL
6:30 AM	0	0	0	0	0	0	1	0	0	0	0	0	3	2	2	0	8
6:45 AM	0	0	0	0	0	0	2	0	0	0	0	0	5	1	0	0	8
7:00 AM	0	0	0	0	0	1	2	0	0	0	0	0	4	0	3	0	10
7:15 AM	0	0	0	0	0	1	1	0	0	0	0	0	4	1	3	0	10
7:30 AM	0	0	0	0	0	2	0	0	1	0	0	0	5	0	1	0	9
7:45 AM	0	0	0	0	1	0	2	0	1	0	0	0	13	0	0	0	17
8:00 AM	0	0	0	0	0	1	0	0	3	0	0	0	13	1	5	0	23
8:15 AM	0	1	2	0	0	4	3	0	5	1	0	0	5	3	5	0	29
8:30 AM	0	0	0	0	0	0	4	0	2	1	0	0	2	1	2	0	12
8:45 AM	0	0	1	0	1	1	9	0	3	0	2	0	5	2	1	0	25
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	3	0	2	10	24	0	15	2	2	0	59	11	22	0	151
APPROACH %'s :	0.00%	25.00%	75.00%	0.00%	5.56%	27.78%	66.67%	0.00%	78.95%	10.53%	10.53%	0.00%	64.13%	11.96%	23.91%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	1	3	0	1	6	16	0	13	2	2	0	25	7	13	0	89
PEAK HR FACTOR :	0.000	0.250	0.375	0.000	0.250	0.375	0.444	0.000	0.650	0.500	0.250	0.000	0.481	0.583	0.650	0.000	0.767
		0.333				0.523				0.708				0.592			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	TOTAL
3:30 PM	0	0	2	0	0	2	2	0	2	1	0	0	1	1	1	0	12
3:45 PM	0	0	1	0	0	2	3	0	0	1	0	0	2	2	3	0	14
4:00 PM	0	0	5	0	1	0	1	0	2	2	0	0	2	0	1	0	14
4:15 PM	0	0	3	0	0	3	2	0	0	0	0	0	2	1	0	0	11
4:30 PM	0	1	4	0	2	1	1	0	3	1	0	0	3	3	0	0	19
4:45 PM	0	0	2	0	1	0	1	0	0	0	0	0	3	0	1	0	8
5:00 PM	0	0	7	0	0	2	0	0	1	1	0	0	0	0	0	0	11
5:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	2	0	4
5:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	3	0	2	0	6
5:45 PM	0	0	0	0	2	1	1	0	0	0	0	0	0	1	0	0	5
6:00 PM	0	1	0	0	0	1	0	0	1	2	0	0	0	0	0	0	5
6:15 PM	0	0	1	0	0	0	3	0	0	0	0	0	1	0	0	0	5
6:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	3
6:45 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
7:00 PM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
7:15 PM	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2	25	0	6	15	16	0	13	8	0	0	20	9	10	0	124
APPROACH %'s :	0.00%	7.41%	92.59%	0.00%	16.22%	40.54%	43.24%	0.00%	61.90%	38.10%	0.00%	0.00%	51.28%	23.08%	25.64%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	1	13	0	3	4	2	0	4	2	0	0	7	3	3	0	42
PEAK HR FACTOR :	0.00	0.250	0.464	0.000	0.375	0.500	0.500	0.000	0.333	0.500	0.000	0.000	0.583	0.250	0.375	0.000	0.553
		0.500				0.563				0.375				0.542			

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49 SB Ramps & E Main St/Idaho Maryland Rd
City: Grass Valley
Control: 0

Project ID: 19-07290-006
Date: 8/28/2019

Bikes

NS/EW Streets:	SR 49 SB Ramps				SR 49 SB Ramps				E Main St/Idaho Maryland Rd				E Main St/Idaho Maryland Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
6:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
7:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
7:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	4	0	1	1	0	0	0	5	1	0	12
APPROACH %'s :					0.00%	0.00%	100.00%	0.00%	50.00%	50.00%	0.00%	0.00%	0.00%	83.33%	16.67%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0	0	4
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.500
							0.250								0.500		

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49 SB Ramps & E Main St/Idaho Maryland Rd
City: Grass Valley
Project ID: 19-07290-006
Date: 8/28/2019

Pedestrians (Crosswalks)

NS/EW Streets:	SR 49 SB Ramps		SR 49 SB Ramps		E Main St/Idaho Maryland Rd		E Main St/Idaho Maryland Rd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:30 AM	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	08:00 AM - 09:00 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	1	0	0	0	1
6:15 PM	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	1	0	0	0	1
7:00 PM	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	2	0	0	0	2
APPROACH %'s :					100.00%	0.00%			
PEAK HR :	04:30 PM - 05:30 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Prepared by National Data & Surveying Services

Bennett St & Hansen Way/SR 49 EB Ramps

Peak Hour Turning Movement Count

ID: 19-07290-004
City: Grass Valley

Day: Wednesday
Date: 08/28/2019

PEAK HOURS

AM: 08:00 AM - 09:00 AM
NOON: NONE
PM: 04:30 PM - 05:30 PM

COUNT PERIODS

AM: 06:30 AM - 09:00 AM
NOON: NONE
PM: 03:30 PM - 07:30 PM

Bennett St — SOUTHBOUND

AM	0	235	144	0	232	AM
NOON	0	0	0	0	0	NOON
PM	0	318	171	1	180	PM

Hansen Way/SR 49 EB Ramps — EASTBOUND

AM	NOON	PM	
0	0	0	
0	0	0	0
57	0	60	0
313	0	282	0
4	0	1	0
AM	NOON	PM	

Hansen Way/SR 49 EB Ramps — WESTBOUND

PM	NOON	AM	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
598	0	698	
PM	NOON	AM	

CONTROL

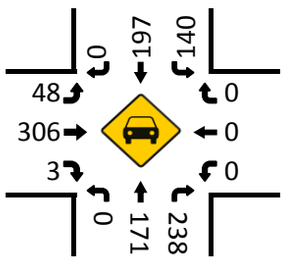
1 Stop Sign (EB)

TEV	1169	0	1097
	AM	NOON	PM
PHF	0.91		0.90

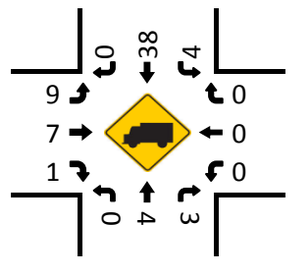
NORTHBOUND — Bennett St

PM	319	0	0	119	145	PM
NOON	0	0	0	0	0	NOON
AM	239	0	0	175	241	AM

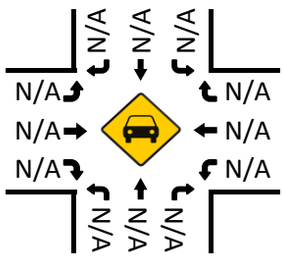
Cars (AM)



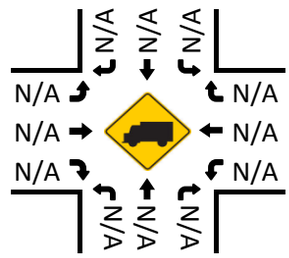
HT (AM)



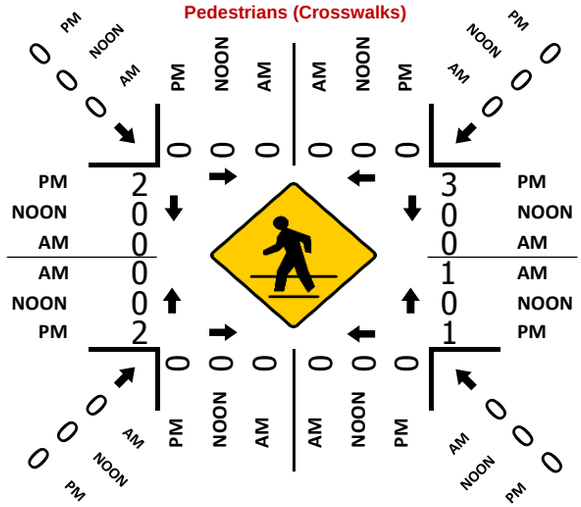
Cars (NOON)



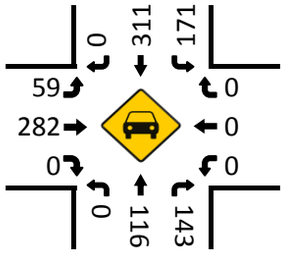
HT (NOON)



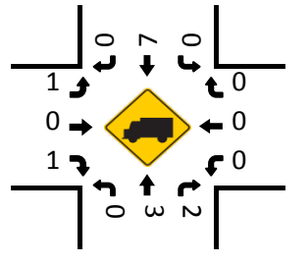
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Bennett St & Hansen Way/SR 49 EB Ramps
City: Grass Valley
Control: 1 Stop Sign (EB)

Project ID: 19-07290-004
Date: 8/28/2019

Total

NS/EW Streets:	Bennett St				Bennett St				Hansen Way/SR 49 EB Ramps				Hansen Way/SR 49 EB Ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:30 AM	0	23	13	0	15	16	0	0	4	22	0	0	0	0	0	0	93
6:45 AM	0	16	37	0	18	22	0	0	3	25	0	0	0	0	0	0	121
7:00 AM	0	27	19	0	28	29	0	0	5	25	1	0	0	0	0	0	134
7:15 AM	0	18	26	0	27	27	0	0	3	24	1	0	0	0	0	0	126
7:30 AM	0	29	31	0	24	43	0	0	8	41	1	0	0	0	0	0	177
7:45 AM	0	30	59	0	50	45	0	0	8	60	0	0	0	0	0	0	252
8:00 AM	0	54	65	0	28	66	0	0	10	54	0	0	0	0	0	0	277
8:15 AM	0	34	70	0	35	59	0	0	15	83	2	0	0	0	0	0	298
8:30 AM	0	47	66	0	39	60	0	0	20	86	2	0	0	0	0	0	320
8:45 AM	0	40	40	0	42	50	0	0	12	90	0	0	0	0	0	0	274
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	318	426	0	306	417	0	0	88	510	7	0	0	0	0	0	2072
APPROACH %'s :	0.00%	42.74%	57.26%	0.00%	42.32%	57.68%	0.00%	0.00%	14.55%	84.30%	1.16%	0.00%					
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	175	241	0	144	235	0	0	57	313	4	0	0	0	0	0	1169
PEAK HR FACTOR :	0.000	0.810	0.861	0.000	0.857	0.890	0.000	0.000	0.713	0.869	0.500	0.000	0.000	0.000	0.000	0.000	0.913
		0.874				0.957				0.866							

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:30 PM	0	23	46	0	49	80	0	0	10	93	0	0	0	0	0	0	301
3:45 PM	0	28	35	0	37	77	0	1	11	91	0	0	0	0	0	0	280
4:00 PM	0	25	34	0	34	74	0	0	19	79	0	0	0	0	0	0	265
4:15 PM	0	17	32	0	42	65	0	0	7	66	3	0	0	0	0	0	232
4:30 PM	0	28	33	0	43	73	0	0	13	56	0	0	0	0	0	0	246
4:45 PM	0	29	38	0	39	72	0	0	12	75	0	0	0	0	0	0	265
5:00 PM	0	29	42	0	53	89	0	1	15	75	0	0	0	0	0	0	304
5:15 PM	0	33	32	0	36	84	0	0	20	76	1	0	0	0	0	0	282
5:30 PM	0	22	25	0	23	72	0	0	8	62	1	0	0	0	0	0	213
5:45 PM	0	24	26	0	30	54	0	0	15	57	2	0	0	0	0	0	208
6:00 PM	0	15	22	0	28	53	0	0	9	55	1	0	0	0	0	0	183
6:15 PM	0	25	22	0	24	61	0	0	9	43	2	0	0	0	0	0	186
6:30 PM	0	12	18	0	24	44	0	0	5	43	1	0	0	0	0	0	147
6:45 PM	0	18	16	0	29	58	0	0	5	40	0	0	0	0	0	0	166
7:00 PM	0	19	13	0	24	39	0	0	10	42	0	0	0	0	0	0	147
7:15 PM	0	11	10	0	37	52	0	0	8	56	2	0	0	0	0	0	176
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	358	444	0	552	1047	0	2	176	1009	13	0	0	0	0	0	3601
APPROACH %'s :	0.00%	44.64%	55.36%	0.00%	34.48%	65.40%	0.00%	0.12%	14.69%	84.22%	1.09%	0.00%					
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	119	145	0	171	318	0	1	60	282	1	0	0	0	0	0	1097
PEAK HR FACTOR :	0.000	0.902	0.863	0.000	0.807	0.893	0.000	0.250	0.750	0.928	0.250	0.000	0.000	0.000	0.000	0.000	0.902
		0.930				0.857				0.884							

National Data & Surveying Services

Intersection Turning Movement Count

Location: Bennett St & Hansen Way/SR 49 EB Ramps
City: Grass Valley
Control: 1 Stop Sign (EB)

Project ID: 19-07290-004
Date: 8/28/2019

Cars

NS/EW Streets:	Bennett St				Bennett St				Hansen Way/SR 49 EB Ramps				Hansen Way/SR 49 EB Ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:30 AM	0	20	11	0	15	16	0	0	4	20	0	0	0	0	0	0	86
6:45 AM	0	15	36	0	18	21	0	0	3	25	0	0	0	0	0	0	118
7:00 AM	0	26	15	0	28	29	0	0	5	23	1	0	0	0	0	0	127
7:15 AM	0	17	24	0	27	26	0	0	2	23	0	0	0	0	0	0	119
7:30 AM	0	28	28	0	24	43	0	0	8	40	0	0	0	0	0	0	171
7:45 AM	0	29	58	0	49	43	0	0	6	60	0	0	0	0	0	0	245
8:00 AM	0	52	63	0	27	63	0	0	9	54	0	0	0	0	0	0	268
8:15 AM	0	33	69	0	33	48	0	0	12	82	1	0	0	0	0	0	278
8:30 AM	0	46	66	0	39	47	0	0	19	83	2	0	0	0	0	0	302
8:45 AM	0	40	40	0	41	39	0	0	8	87	0	0	0	0	0	0	255
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	306	410	0	301	375	0	0	76	497	4	0	0	0	0	0	1969
APPROACH %'s :	0.00%	42.74%	57.26%	0.00%	44.53%	55.47%	0.00%	0.00%	13.17%	86.14%	0.69%	0.00%					
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	171	238	0	140	197	0	0	48	306	3	0	0	0	0	0	1103
PEAK HR FACTOR :	0.00	0.822	0.862	0.000	0.854	0.782	0.000	0.000	0.632	0.879	0.375	0.000	0.000	0.000	0.000	0.000	0.913
		0.889				0.936				0.858							

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:30 PM	0	23	46	0	48	78	0	0	9	89	0	0	0	0	0	0	293
3:45 PM	0	28	33	0	37	75	0	1	10	89	0	0	0	0	0	0	273
4:00 PM	0	25	32	0	34	73	0	0	18	78	0	0	0	0	0	0	260
4:15 PM	0	14	31	0	41	63	0	0	7	64	2	0	0	0	0	0	222
4:30 PM	0	26	32	0	43	71	0	0	13	56	0	0	0	0	0	0	241
4:45 PM	0	28	37	0	39	71	0	0	11	75	0	0	0	0	0	0	261
5:00 PM	0	29	42	0	53	89	0	1	15	75	0	0	0	0	0	0	304
5:15 PM	0	33	32	0	36	80	0	0	20	76	0	0	0	0	0	0	277
5:30 PM	0	22	25	0	23	71	0	0	7	60	1	0	0	0	0	0	209
5:45 PM	0	24	26	0	30	53	0	0	14	57	2	0	0	0	0	0	206
6:00 PM	0	15	22	0	28	53	0	0	9	55	1	0	0	0	0	0	183
6:15 PM	0	25	22	0	24	61	0	0	8	42	0	0	0	0	0	0	182
6:30 PM	0	12	18	0	24	44	0	0	5	43	1	0	0	0	0	0	147
6:45 PM	0	17	16	0	29	58	0	0	4	40	0	0	0	0	0	0	164
7:00 PM	0	18	13	0	24	39	0	0	10	42	0	0	0	0	0	0	146
7:15 PM	0	11	10	0	37	52	0	0	7	54	1	0	0	0	0	0	172
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	350	437	0	550	1031	0	2	167	995	8	0	0	0	0	0	3540
APPROACH %'s :	0.00%	44.47%	55.53%	0.00%	34.74%	65.13%	0.00%	0.13%	14.27%	85.04%	0.68%	0.00%					
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	116	143	0	171	311	0	1	59	282	0	0	0	0	0	0	1083
PEAK HR FACTOR :	0.00	0.879	0.851	0.000	0.807	0.874	0.000	0.250	0.738	0.928	0.000	0.000	0.000	0.000	0.000	0.000	0.891
		0.912				0.844				0.888							

National Data & Surveying Services

Intersection Turning Movement Count

Location: Bennett St & Hansen Way/SR 49 EB Ramps
City: Grass Valley
Control: 1 Stop Sign (EB)

Project ID: 19-07290-004
Date: 8/28/2019

HT

NS/EW Streets:	Bennett St				Bennett St				Hansen Way/SR 49 EB Ramps				Hansen Way/SR 49 EB Ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:30 AM	0	3	2	0	0	0	0	0	0	2	0	0	0	0	0	0	7
6:45 AM	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
7:00 AM	0	1	4	0	0	0	0	0	0	2	0	0	0	0	0	0	7
7:15 AM	0	1	2	0	0	1	0	0	1	1	1	0	0	0	0	0	7
7:30 AM	0	1	3	0	0	0	0	0	0	1	1	0	0	0	0	0	6
7:45 AM	0	1	1	0	1	2	0	0	2	0	0	0	0	0	0	0	7
8:00 AM	0	2	2	0	1	3	0	0	1	0	0	0	0	0	0	0	9
8:15 AM	0	1	1	0	2	11	0	0	3	1	1	0	0	0	0	0	20
8:30 AM	0	1	0	0	0	13	0	0	1	3	0	0	0	0	0	0	18
8:45 AM	0	0	0	0	1	11	0	0	4	3	0	0	0	0	0	0	19
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	12	16	0	5	42	0	0	12	13	3	0	0	0	0	0	103
APPROACH %'s :	0.00%	42.86%	57.14%	0.00%	10.64%	89.36%	0.00%	0.00%	42.86%	46.43%	10.71%	0.00%					
PEAK HR :	**08:00 AM - 09:00 AM**																TOTAL
PEAK HR VOL :	0	4	3	0	4	38	0	0	9	7	1	0	0	0	0	0	66
PEAK HR FACTOR :	0.000	0.500	0.375	0.000	0.500	0.731	0.000	0.000	0.563	0.583	0.250	0.000	0.000	0.000	0.000	0.000	0.825
			0.438				0.808				0.607						

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:30 PM	0	0	0	0	1	2	0	0	1	4	0	0	0	0	0	0	8
3:45 PM	0	0	2	0	0	2	0	0	1	2	0	0	0	0	0	0	7
4:00 PM	0	0	2	0	0	1	0	0	1	1	0	0	0	0	0	0	5
4:15 PM	0	3	1	0	1	2	0	0	0	2	1	0	0	0	0	0	10
4:30 PM	0	2	1	0	0	2	0	0	0	0	0	0	0	0	0	0	5
4:45 PM	0	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	4
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	4	0	0	0	0	1	0	0	0	0	0	5
5:30 PM	0	0	0	0	0	1	0	0	1	2	0	0	0	0	0	0	4
5:45 PM	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	4
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
7:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 PM	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0	4
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	8	7	0	2	16	0	0	9	14	5	0	0	0	0	0	61
APPROACH %'s :	0.00%	53.33%	46.67%	0.00%	11.11%	88.89%	0.00%	0.00%	32.14%	50.00%	17.86%	0.00%					
PEAK HR :	**04:30 PM - 05:30 PM**																TOTAL
PEAK HR VOL :	0	3	2	0	0	7	0	0	1	0	1	0	0	0	0	0	14
PEAK HR FACTOR :	0.00	0.375	0.500	0.000	0.000	0.438	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.700
			0.417				0.438				0.500						

National Data & Surveying Services

Intersection Turning Movement Count

Location: Bennett St & Hansen Way/SR 49 EB Ramps
City: Grass Valley
Control: 1 Stop Sign (EB)

Project ID: 19-07290-004
Date: 8/28/2019

Bikes

NS/EW Streets:	Bennett St				Bennett St				Hansen Way/SR 49 EB Ramps				Hansen Way/SR 49 EB Ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
					0.250												

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	3	0	0	0	5	0	1	0	0	0	0	0	0	0	0	9
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	83.33%	0.00%	16.67%									
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.00	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
		0.250															

National Data & Surveying Services

Intersection Turning Movement Count

Location: Bennett St & Hansen Way/SR 49 EB Ramps
City: Grass Valley
Project ID: 19-07290-004
Date: 8/28/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Bennett St		Bennett St		Hansen Way/SR 49 EB Ramps		Hansen Way/SR 49 EB Ramps		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:30 AM	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	2	0	2
7:15 AM	0	0	0	0	0	1	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	1	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	1	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	1	2	2	0	5
APPROACH %'s :					33.33%	66.67%	100.00%	0.00%	
PEAK HR :	**08:00 AM - 09:00 AM**								TOTAL
PEAK HR VOL :	0	0	0	0	1	0	0	0	1
PEAK HR FACTOR :					0.250				0.250
					0.250				

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	2	0	1	0	3
4:00 PM	0	0	0	0	0	1	0	0	1
4:15 PM	0	0	0	0	0	0	1	1	2
4:30 PM	0	0	0	0	0	2	0	1	3
4:45 PM	0	0	0	0	1	0	1	0	2
5:00 PM	0	0	0	0	0	1	1	1	3
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	1	2	3
6:00 PM	0	0	0	0	0	0	0	1	1
6:15 PM	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	1	0	1	2
6:45 PM	0	0	0	0	1	1	1	0	3
7:00 PM	0	0	0	0	0	1	0	0	1
7:15 PM	0	0	0	0	0	2	0	0	2
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	4	9	6	7	26
APPROACH %'s :					30.77%	69.23%	46.15%	53.85%	
PEAK HR :	**04:30 PM - 05:30 PM**								TOTAL
PEAK HR VOL :	0	0	0	0	1	3	2	2	8
PEAK HR FACTOR :					0.250	0.375	0.500	0.500	0.667
					0.500		0.500		

Prepared by National Data & Surveying Services

Ophir St & SR 174

Peak Hour Turning Movement Count

ID: 22-070033-002
City: Grass Valley

Day: Thursday
Date: 2/17/2022

	PEAK HOURS	COUNT PERIODS
AM	08:00 AM - 09:00 AM	7:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:00 PM - 05:00 PM	4:00 PM - 06:00 PM

Ophir St — SOUTHBOUND

	Right	Thru	Left	U-Turn	Total (Entering)
AM	55	0	159	0	334
NOON	0	0	0	0	0
PM	65	0	210	0	187
Lanes	0	1	0	0	

SR 174 — EASTBOUND

	AM	NOON	PM	Lanes
Total	257	0	191	
U-Turn	0	0	0	0
Left	40	0	50	0
Thru	149	0	124	1
Right	0	0	0	0

SR 174 — WESTBOUND

	PM	NOON	AM	Lanes
Right	137	0	294	0
Thru	126	0	202	0
Left	0	0	0	0
U-Turn	0	0	0	0
Total	334	0	308	

Ophir St — NORTHBOUND

	Total	U-Turn	Left	Thru	Right
Lanes		0	0	1	0
PM	0	0	0	0	0
NOON	0	0	0	0	0
AM	0	0	0	0	0

CONTROL

1-Way Stop(SB)

	AM	NOON	PM
TEV	899	0	712
PHF	0.82		0.94

Cars (AM)

Approach	Left	Thru	Right
Southbound	155	0	47
Eastbound	32	144	0
Westbound	0	186	287
Northbound	0	0	0

Cars (NOON)

Approach	Left	Thru	Right
Southbound	0	0	0
Eastbound	0	0	0
Westbound	0	0	0
Northbound	0	0	0

Cars (PM)

Approach	Left	Thru	Right
Southbound	206	0	55
Eastbound	43	123	0
Westbound	0	118	133
Northbound	0	0	0

HT (AM)

Approach	Left	Thru	Right
Southbound	4	0	8
Eastbound	8	5	0
Westbound	0	16	7
Northbound	0	0	0

HT (NOON)

Approach	Left	Thru	Right
Southbound	0	0	0
Eastbound	0	0	0
Westbound	0	0	0
Northbound	0	0	0

HT (PM)

Approach	Left	Thru	Right
Southbound	4	0	10
Eastbound	7	1	0
Westbound	0	8	4
Northbound	0	0	0

Pedestrians (Crosswalks)

Crosswalk	Direction	AM	NOON	PM
North	Eastbound	2	0	1
North	Westbound	1	0	0
South	Eastbound	0	0	0
South	Westbound	0	0	0
West	Southbound	0	0	0
West	Northbound	0	0	0
East	Southbound	0	0	0
East	Northbound	0	0	0
Diagonal NW		0	0	0
Diagonal NE		0	0	0
Diagonal SW		0	0	0
Diagonal SE		0	0	0

National Data & Surveying Services Intersection Turning Movement Count

Location: Ophir St & SR 174
City: Grass Valley
Control: 1-Way Stop(SB)

Project ID: 22-070033-002
Date: 2/17/2022

Data - Total

NS/EW Streets:	Ophir St				Ophir St				SR 174				SR 174				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	TOTAL
7:00 AM	0	0	0	0	13	0	8	0	7	14	0	0	0	9	20	0	71
7:15 AM	0	0	0	0	16	0	13	0	12	9	0	0	0	18	27	0	95
7:30 AM	0	0	0	0	24	0	9	0	9	22	0	0	0	31	34	0	129
7:45 AM	0	0	0	0	25	0	26	0	10	23	0	0	0	48	43	0	175
8:00 AM	0	0	0	0	36	0	10	0	10	34	0	0	0	41	70	0	201
8:15 AM	0	0	0	0	54	0	15	0	10	44	0	0	0	61	89	0	273
8:30 AM	0	0	0	0	30	0	12	0	10	34	0	0	0	50	82	0	218
8:45 AM	0	0	0	0	39	0	18	0	10	37	0	0	0	50	53	0	207
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	237	0	111	0	78	217	0	0	0	308	418	0	1369
APPROACH %'s :					68.10%	0.00%	31.90%	0.00%	26.44%	73.56%	0.00%	0.00%	0.00%	42.42%	57.58%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	159	0	55	0	40	149	0	0	0	202	294	0	899
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.736	0.000	0.764	0.000	1.000	0.847	0.000	0.000	0.000	0.828	0.826	0.000	0.823
					0.775				0.875				0.827				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	TOTAL
4:00 PM	0	0	0	0	54	0	17	0	13	32	0	0	0	39	35	0	190
4:15 PM	0	0	0	0	44	0	15	0	10	33	0	0	0	29	39	0	170
4:30 PM	0	0	0	0	53	0	14	0	16	34	0	0	0	32	33	0	182
4:45 PM	0	0	0	0	59	0	19	0	11	25	0	0	0	26	30	0	170
5:00 PM	0	0	0	0	55	0	18	0	12	31	0	0	0	30	27	0	173
5:15 PM	0	0	0	0	46	0	18	0	14	28	0	0	0	36	36	0	178
5:30 PM	0	0	0	0	46	0	13	0	13	17	0	0	0	29	36	0	154
5:45 PM	0	0	0	0	30	0	8	0	15	33	0	0	0	19	23	0	128
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	387	0	122	0	104	233	0	0	0	240	259	0	1345
APPROACH %'s :					76.03%	0.00%	23.97%	0.00%	30.86%	69.14%	0.00%	0.00%	0.00%	48.10%	51.90%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	210	0	65	0	50	124	0	0	0	126	137	0	712
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.890	0.000	0.855	0.000	0.781	0.912	0.000	0.000	0.000	0.808	0.878	0.000	0.937
					0.881				0.870				0.889				

National Data & Surveying Services Intersection Turning Movement Count

Location: Ophir St & SR 174
City: Grass Valley
Control: 1-Way Stop(SB)

Project ID: 22-070033-002
Date: 2/17/2022

Data - Cars

NS/EW Streets:	Ophir St				Ophir St				SR 174				SR 174				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	TOTAL
7:00 AM	0	0	0	0	12	0	5	0	6	12	0	0	0	9	20	0	64
7:15 AM	0	0	0	0	15	0	8	0	11	8	0	0	0	15	26	0	83
7:30 AM	0	0	0	0	23	0	8	0	9	19	0	0	0	25	33	0	117
7:45 AM	0	0	0	0	24	0	23	0	9	22	0	0	0	46	43	0	167
8:00 AM	0	0	0	0	35	0	10	0	8	34	0	0	0	37	69	0	193
8:15 AM	0	0	0	0	54	0	11	0	10	43	0	0	0	59	86	0	263
8:30 AM	0	0	0	0	28	0	10	0	6	32	0	0	0	45	81	0	202
8:45 AM	0	0	0	0	38	0	16	0	8	35	0	0	0	45	51	0	193
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	229	0	91	0	67	205	0	0	0	281	409	0	1282
APPROACH %'s :					71.56%	0.00%	28.44%	0.00%	24.63%	75.37%	0.00%	0.00%	0.00%	40.72%	59.28%	0.00%	
PEAK HR :	**08:00 AM - 09:00 AM**																TOTAL
PEAK HR VOL :	0	0	0	0	155	0	47	0	32	144	0	0	0	186	287	0	851
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.718	0.000	0.734	0.000	0.800	0.837	0.000	0.000	0.000	0.788	0.834	0.000	0.809
					0.777				0.830				0.816				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	TOTAL
4:00 PM	0	0	0	0	51	0	16	0	11	32	0	0	0	35	35	0	180
4:15 PM	0	0	0	0	44	0	11	0	9	33	0	0	0	26	38	0	161
4:30 PM	0	0	0	0	52	0	13	0	13	33	0	0	0	32	31	0	174
4:45 PM	0	0	0	0	59	0	15	0	10	25	0	0	0	25	29	0	163
5:00 PM	0	0	0	0	55	0	16	0	12	30	0	0	0	29	27	0	169
5:15 PM	0	0	0	0	46	0	14	0	13	27	0	0	0	35	36	0	171
5:30 PM	0	0	0	0	46	0	12	0	10	16	0	0	0	29	36	0	149
5:45 PM	0	0	0	0	30	0	8	0	15	31	0	0	0	18	23	0	125
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	383	0	105	0	93	227	0	0	0	229	255	0	1292
APPROACH %'s :					78.48%	0.00%	21.52%	0.00%	29.06%	70.94%	0.00%	0.00%	0.00%	47.31%	52.69%	0.00%	
PEAK HR :	**04:00 PM - 05:00 PM**																TOTAL
PEAK HR VOL :	0	0	0	0	206	0	55	0	43	123	0	0	0	118	133	0	678
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.873	0.000	0.859	0.000	0.827	0.932	0.000	0.000	0.000	0.843	0.875	0.000	0.942
					0.882				0.902				0.896				

National Data & Surveying Services Intersection Turning Movement Count

Location: Ophir St & SR 174
City: Grass Valley
Control: 1-Way Stop(SB)

Project ID: 22-070033-002
Date: 2/17/2022

Data - HT

NS/EW Streets:	Ophir St				Ophir St				SR 174				SR 174				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	TOTAL
7:00 AM	0	0	0	0	1	0	3	0	1	2	0	0	0	0	0	0	7
7:15 AM	0	0	0	0	1	0	5	0	1	1	0	0	0	3	1	0	12
7:30 AM	0	0	0	0	1	0	1	0	0	3	0	0	0	6	1	0	12
7:45 AM	0	0	0	0	1	0	3	0	1	1	0	0	0	2	0	0	8
8:00 AM	0	0	0	0	1	0	0	0	2	0	0	0	0	4	1	0	8
8:15 AM	0	0	0	0	0	0	4	0	0	1	0	0	0	2	3	0	10
8:30 AM	0	0	0	0	2	0	2	0	4	2	0	0	0	5	1	0	16
8:45 AM	0	0	0	0	1	0	2	0	2	2	0	0	0	5	2	0	14
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	8	0	20	0	11	12	0	0	0	27	9	0	87
APPROACH %'s :					28.57%	0.00%	71.43%	0.00%	47.83%	52.17%	0.00%	0.00%	0.00%	75.00%	25.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	4	0	8	0	8	5	0	0	0	16	7	0	48
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.500	0.000	0.500	0.000	0.500	0.625	0.000	0.000	0.000	0.800	0.583	0.000	0.750
							0.750				0.542				0.821		

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	TOTAL
4:00 PM	0	0	0	0	3	0	1	0	2	0	0	0	0	4	0	0	10
4:15 PM	0	0	0	0	0	0	4	0	1	0	0	0	0	3	1	0	9
4:30 PM	0	0	0	0	1	0	1	0	3	1	0	0	0	0	2	0	8
4:45 PM	0	0	0	0	0	0	4	0	1	0	0	0	0	1	1	0	7
5:00 PM	0	0	0	0	0	0	2	0	0	1	0	0	0	1	0	0	4
5:15 PM	0	0	0	0	0	0	4	0	1	1	0	0	0	1	0	0	7
5:30 PM	0	0	0	0	0	0	1	0	3	1	0	0	0	0	0	0	5
5:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	4	0	17	0	11	6	0	0	0	11	4	0	53
APPROACH %'s :					19.05%	0.00%	80.95%	0.00%	64.71%	35.29%	0.00%	0.00%	0.00%	73.33%	26.67%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	4	0	10	0	7	1	0	0	0	8	4	0	34
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.333	0.000	0.625	0.000	0.583	0.250	0.000	0.000	0.000	0.500	0.500	0.000	0.850
							0.875				0.500				0.750		

National Data & Surveying Services Intersection Turning Movement Count

Location: Ophir St & SR 174
City: Grass Valley
Control: 1-Way Stop(SB)

Project ID: 22-070033-002
Date: 2/17/2022

Data - Bikes

NS/EW Streets:	Ophir St				Ophir St				SR 174				SR 174				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
APPROACH %'s :													0.00%	50.00%	50.00%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250
														0.250			

Prepared by National Data & Surveying Services

Hansen Way & Neal St

Peak Hour Turning Movement Count

ID: 22-070033-003
City: Grass Valley

Day: Thursday
Date: 2/17/2022

PEAK HOURS

AM: 08:00 AM - 09:00 AM
NOON: NONE
PM: 04:30 PM - 05:30 PM

COUNT PERIODS

AM: 7:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 06:00 PM

SOUTHBOUND (Hansen Way)

AM	0	0	0	0	327	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	311	PM

EASTBOUND (Neal St)

AM	NOON	PM		
274	0	236	⇦	
0	0	0	↶	0
108	0	148	↰	0
207	0	157	→	1
0	0	0	↷	0
AM	NOON	PM		

WESTBOUND (Neal St)

PM	NOON	AM		
45	0	82	↶	0
232	0	268	←	1
0	0	0	↰	0
0	0	0	↷	0
230	0	304	⇨	
PM	NOON	AM		

NORTHBOUND (Hansen Way)

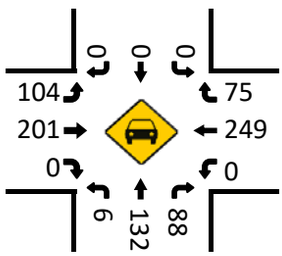
PM	0	0	4	118	73	PM
NOON	0	0	0	0	0	NOON
AM	0	0	6	137	97	AM

CONTROL

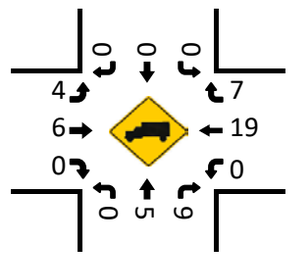
2-Way Stop(NB/WB)

TEV	905 AM	0 NOON	777 PM
PHF	0.77		0.95

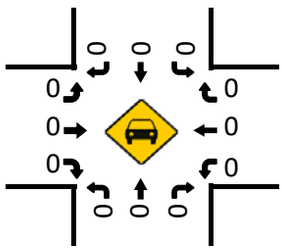
Cars (AM)



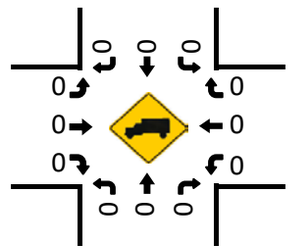
HT (AM)



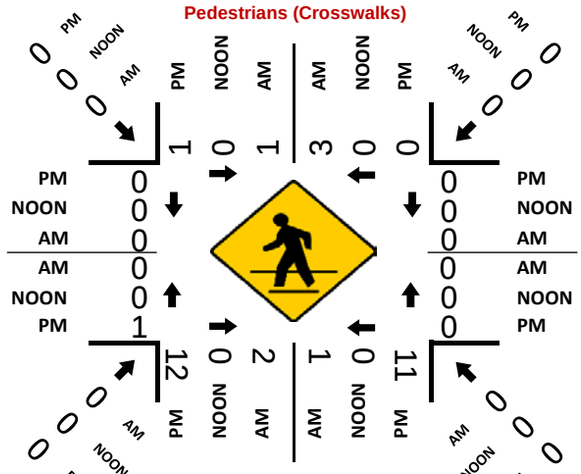
Cars (NOON)



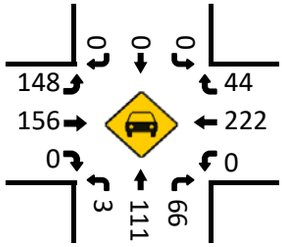
HT (NOON)



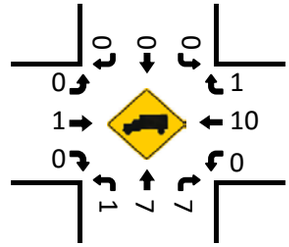
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: Hansen Way & Neal St
City: Grass Valley
Control: 2-Way Stop(NB/WB)

Project ID: 22-070033-003
Date: 2/17/2022

Data - Total

NS/EW Streets:	Hansen Way				Hansen Way				Neal St				Neal St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	1	0.5	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	10	12	0	0	0	0	0	6	23	0	0	0	18	7	0	76
7:15 AM	0	24	12	0	0	0	0	0	7	12	0	0	0	28	8	1	92
7:30 AM	0	10	21	0	0	0	0	0	13	24	0	0	0	34	9	0	111
7:45 AM	0	23	22	0	0	0	0	0	21	28	0	0	0	73	11	0	178
8:00 AM	0	29	24	0	0	0	0	0	31	58	0	0	0	41	17	0	200
8:15 AM	4	43	31	0	0	0	0	0	18	72	0	0	0	91	33	0	292
8:30 AM	2	31	22	0	0	0	0	0	19	30	0	0	0	76	16	0	196
8:45 AM	0	34	20	0	0	0	0	0	40	47	0	0	0	60	16	0	217
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	6	204	164	0	0	0	0	0	155	294	0	0	0	421	117	1	1362
APPROACH %'s :	1.60%	54.55%	43.85%	0.00%					34.52%	65.48%	0.00%	0.00%	0.00%	78.11%	21.71%	0.19%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	6	137	97	0	0	0	0	0	108	207	0	0	0	268	82	0	905
PEAK HR FACTOR :	0.375	0.797	0.782	0.000	0.000	0.000	0.000	0.000	0.675	0.719	0.000	0.000	0.000	0.736	0.621	0.000	0.775
	0.769								0.875				0.706				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	1	0.5	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	4	36	22	0	0	0	0	0	31	45	0	0	0	63	12	0	213
4:15 PM	4	24	24	0	0	0	0	0	35	33	0	0	0	48	11	0	179
4:30 PM	1	39	15	0	0	0	0	0	27	40	0	0	0	63	13	0	198
4:45 PM	1	27	23	0	0	0	0	0	37	33	0	0	0	52	6	0	179
5:00 PM	0	25	17	0	0	0	0	0	42	45	0	0	0	62	14	0	205
5:15 PM	2	27	18	0	0	0	0	0	42	39	0	0	0	55	12	0	195
5:30 PM	0	20	18	0	0	0	0	0	37	31	0	0	0	66	15	0	187
5:45 PM	0	21	21	0	0	0	0	0	25	54	0	0	0	38	14	0	173
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	12	219	158	0	0	0	0	0	276	320	0	0	0	447	97	0	1529
APPROACH %'s :	3.08%	56.30%	40.62%	0.00%					46.31%	53.69%	0.00%	0.00%	0.00%	82.17%	17.83%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	4	118	73	0	0	0	0	0	148	157	0	0	0	232	45	0	777
PEAK HR FACTOR :	0.500	0.756	0.793	0.000	0.000	0.000	0.000	0.000	0.881	0.872	0.000	0.000	0.000	0.921	0.804	0.000	0.948
	0.886								0.876				0.911				

National Data & Surveying Services Intersection Turning Movement Count

Location: Hansen Way & Neal St
City: Grass Valley
Control: 2-Way Stop(NB/WB)

Project ID: 22-070033-003
Date: 2/17/2022

Data - Cars

NS/EW Streets:	Hansen Way				Hansen Way				Neal St				Neal St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	1	0.5	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	10	10	0	0	0	0	0	6	22	0	0	0	16	6	0	70
7:15 AM	0	22	12	0	0	0	0	0	6	11	0	0	0	23	7	1	82
7:30 AM	0	8	21	0	0	0	0	0	13	23	0	0	0	29	5	0	99
7:45 AM	0	21	21	0	0	0	0	0	21	27	0	0	0	67	9	0	166
8:00 AM	0	28	23	0	0	0	0	0	28	58	0	0	0	38	16	0	191
8:15 AM	4	41	29	0	0	0	0	0	17	71	0	0	0	87	32	0	281
8:30 AM	2	30	19	0	0	0	0	0	19	28	0	0	0	70	16	0	184
8:45 AM	0	33	17	0	0	0	0	0	40	44	0	0	0	54	11	0	199
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	6	193	152	0	0	0	0	0	150	284	0	0	0	384	102	1	1272
APPROACH %'s :	1.71%	54.99%	43.30%	0.00%					34.56%	65.44%	0.00%	0.00%	0.00%	78.85%	20.94%	0.21%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	6	132	88	0	0	0	0	0	104	201	0	0	0	249	75	0	855
PEAK HR FACTOR :	0.375	0.805	0.759	0.000	0.000	0.000	0.000	0.000	0.650	0.708	0.000	0.000	0.000	0.716	0.586	0.000	0.761
	0.764								0.866				0.681				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	1	0.5	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	4	34	20	0	0	0	0	0	31	45	0	0	0	58	12	0	204
4:15 PM	4	22	23	0	0	0	0	0	35	32	0	0	0	45	10	0	171
4:30 PM	0	37	12	0	0	0	0	0	27	40	0	0	0	61	13	0	190
4:45 PM	1	25	22	0	0	0	0	0	37	33	0	0	0	49	6	0	173
5:00 PM	0	24	17	0	0	0	0	0	42	44	0	0	0	60	14	0	201
5:15 PM	2	25	15	0	0	0	0	0	42	39	0	0	0	52	11	0	186
5:30 PM	0	20	15	0	0	0	0	0	37	31	0	0	0	63	13	0	179
5:45 PM	0	18	21	0	0	0	0	0	25	53	0	0	0	38	13	0	168
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	11	205	145	0	0	0	0	0	276	317	0	0	0	426	92	0	1472
APPROACH %'s :	3.05%	56.79%	40.17%	0.00%					46.54%	53.46%	0.00%	0.00%	0.00%	82.24%	17.76%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	3	111	66	0	0	0	0	0	148	156	0	0	0	222	44	0	750
PEAK HR FACTOR :	0.375	0.750	0.750	0.000	0.000	0.000	0.000	0.000	0.881	0.886	0.000	0.000	0.000	0.910	0.786	0.000	0.933
	0.918								0.884				0.899				

National Data & Surveying Services Intersection Turning Movement Count

Location: Hansen Way & Neal St
City: Grass Valley
Control: 2-Way Stop(NB/WB)

Project ID: 22-070033-003
Date: 2/17/2022

Data - HT

NS/EW Streets:	Hansen Way				Hansen Way				Neal St				Neal St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	1	0.5	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	2	0	0	0	0	0	0	1	0	0	0	2	1	0	6
7:15 AM	0	2	0	0	0	0	0	0	1	1	0	0	0	5	1	0	10
7:30 AM	0	2	0	0	0	0	0	0	0	1	0	0	0	5	4	0	12
7:45 AM	0	2	1	0	0	0	0	0	0	1	0	0	0	6	2	0	12
8:00 AM	0	1	1	0	0	0	0	0	3	0	0	0	0	3	1	0	9
8:15 AM	0	2	2	0	0	0	0	0	1	1	0	0	0	4	1	0	11
8:30 AM	0	1	3	0	0	0	0	0	0	2	0	0	0	6	0	0	12
8:45 AM	0	1	3	0	0	0	0	0	0	3	0	0	0	6	5	0	18
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	11	12	0	0	0	0	0	5	10	0	0	0	37	15	0	90
APPROACH %'s :	0.00%	47.83%	52.17%	0.00%					33.33%	66.67%	0.00%	0.00%	0.00%	71.15%	28.85%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	5	9	0	0	0	0	0	4	6	0	0	0	19	7	0	50
PEAK HR FACTOR :	0.000	0.625	0.750	0.000	0.000	0.000	0.000	0.000	0.333	0.500	0.000	0.000	0.000	0.792	0.350	0.000	0.694
		0.875								0.833				0.591			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	1	0.5	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	2	2	0	0	0	0	0	0	0	0	0	0	5	0	0	9
4:15 PM	0	2	1	0	0	0	0	0	0	1	0	0	0	3	1	0	8
4:30 PM	1	2	3	0	0	0	0	0	0	0	0	0	0	2	0	0	8
4:45 PM	0	2	1	0	0	0	0	0	0	0	0	0	0	3	0	0	6
5:00 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	2	0	0	4
5:15 PM	0	2	3	0	0	0	0	0	0	0	0	0	0	3	1	0	9
5:30 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	3	2	0	8
5:45 PM	0	3	0	0	0	0	0	0	0	1	0	0	0	0	1	0	5
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	14	13	0	0	0	0	0	0	3	0	0	0	21	5	0	57
APPROACH %'s :	3.57%	50.00%	46.43%	0.00%					0.00%	100.00%	0.00%	0.00%	0.00%	80.77%	19.23%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	1	7	7	0	0	0	0	0	0	1	0	0	0	10	1	0	27
PEAK HR FACTOR :	0.250	0.875	0.583	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.833	0.250	0.000	0.750
		0.625								0.250				0.688			

National Data & Surveying Services Intersection Turning Movement Count

Location: Hansen Way & Neal St
City: Grass Valley
Control: 2-Way Stop(NB/WB)

Project ID: 22-070033-003
Date: 2/17/2022

Data - Bikes

NS/EW Streets:	Hansen Way				Hansen Way				Neal St				Neal St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	1	0.5	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	1	0.5	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%									0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250
														0.250			

Prepared by National Data & Surveying Services

Tinloy St & Neal St

Peak Hour Turning Movement Count

ID: 22-070033-004
City: Grass Valley

Day: Thursday
Date: 2/17/2022

PEAK HOURS

AM: 08:00 AM - 09:00 AM
NOON: NONE
PM: 04:45 PM - 05:45 PM

COUNT PERIODS

AM: 7:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 06:00 PM

SOUTHBOUND (Tinloy St)

AM	58	172	65	0	0	AM
NOON	0	0	0	0	0	NOON
PM	103	182	49	0	0	PM
	0.5	1	0.5	0		

EASTBOUND (Neal St)

AM	NOON	PM	
233	0	245	
0	0	0	0
0	0	0	0
250	0	255	1
10	0	1	0
AM	NOON	PM	

WESTBOUND (Neal St)

	PM	NOON	AM
0	0	0	0
1	142	0	175
0	100	0	99
0	0	0	0
	304	0	315
	PM	NOON	AM

NORTHBOUND (Tinloy St)

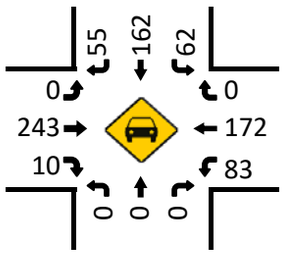
PM	283	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	281	0	0	0	0	AM
		0	0	0	0	

CONTROL

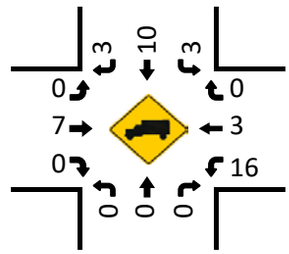
Signalized

TEV	829 AM	0 NOON	832 PM
PHF	0.80		0.89

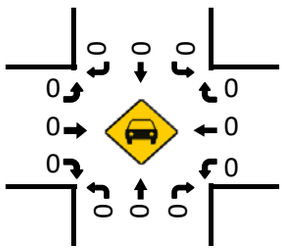
Cars (AM)



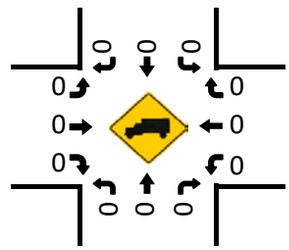
HT (AM)



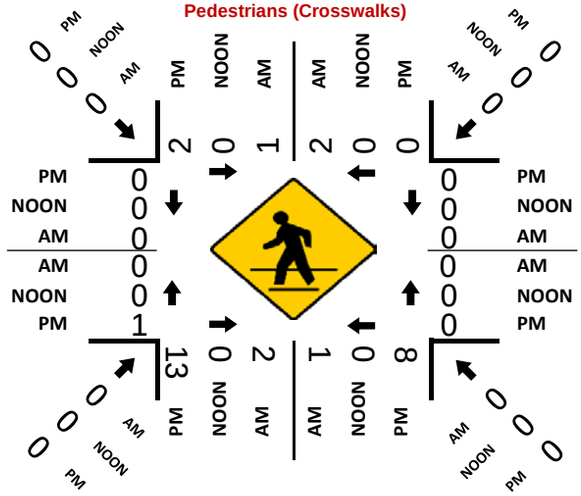
Cars (NOON)



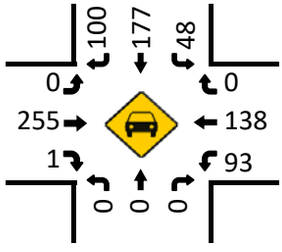
HT (NOON)



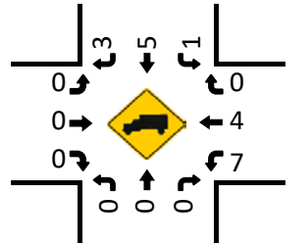
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: Tinloy St & Neal St
City: Grass Valley
Control: Signalized

Project ID: 22-070033-004
Date: 2/17/2022

Data - Total

NS/EW Streets:	Tinloy St				Tinloy St					Neal St				Neal St						
AM	NORTHBOUND				SOUTHBOUND					EASTBOUND				WESTBOUND				SOUTHBOUND2		
	0	0	0	0	0.5	1	0.5	0	0	0	1	0	0	0	1	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	SU2	EL	ET	ER	EU	WL	WT	WR	WU	S2T2	S2R2	TOTAL
7:00 AM	0	0	0	0	2	18	9	0	0	0	24	0	0	8	9	0	0	0	0	70
7:15 AM	0	0	0	0	2	25	7	0	0	0	17	0	0	14	14	0	0	0	0	79
7:30 AM	0	0	0	0	7	12	11	0	0	0	31	0	0	18	17	0	0	0	0	96
7:45 AM	0	0	0	0	6	25	19	0	0	0	42	0	0	27	45	0	0	0	0	164
8:00 AM	0	0	0	0	14	33	14	0	0	0	76	3	0	15	26	0	0	0	0	181
8:15 AM	0	0	0	0	31	53	16	0	0	0	58	6	0	35	61	0	0	0	0	260
8:30 AM	0	0	0	0	6	46	14	0	0	0	43	1	0	27	50	0	0	0	0	187
8:45 AM	0	0	0	0	14	40	14	0	0	0	73	0	0	22	38	0	0	0	0	201
	NL	NT	NR	NU	SL	ST	SR	SU	SU2	EL	ET	ER	EU	WL	WT	WR	WU	S2T2	S2R2	TOTAL
TOTAL VOLUMES :	0	0	0	0	82	252	104	0	0	0	364	10	0	166	260	0	0	0	0	1238
APPROACH %'s :					18.72%	57.53%	23.74%	0.00%	0.00%	0.00%	97.33%	2.67%	0.00%	38.97%	61.03%	0.00%	0.00%			
PEAK HR :	08:00 AM - 09:00 AM																			TOTAL
PEAK HR VOL :	0	0	0	0	65	172	58	0	0	0	250	10	0	99	175	0	0	0	0	829
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.524	0.811	0.906	0.000	0.000	0.000	0.822	0.417	0.000	0.707	0.717	0.000	0.000	0.000	0.000	0.797
							0.738				0.823				0.714					

PM	NORTHBOUND				SOUTHBOUND					EASTBOUND				WESTBOUND						
	0	0	0	0	0.5	1	0.5	0	0	0	1	0	0	0	1	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	SU2	EL	ET	ER	EU	WL	WT	WR	WU	S2T2	S2R2	TOTAL
4:00 PM	0	0	0	0	12	53	29	0	0	0	63	0	0	32	37	0	0	0	1	227
4:15 PM	0	0	0	0	7	42	27	0	0	0	61	0	0	20	31	0	0	0	1	189
4:30 PM	0	0	0	0	8	45	26	0	0	0	61	0	0	23	39	0	0	0	0	202
4:45 PM	0	0	0	0	9	51	22	0	0	0	59	0	0	18	38	0	0	1	0	198
5:00 PM	0	0	0	0	15	56	31	0	1	0	72	1	0	27	31	0	0	0	2	236
5:15 PM	0	0	0	0	8	36	17	0	0	0	73	0	0	24	36	0	0	0	3	197
5:30 PM	0	0	0	0	17	39	33	0	0	0	51	0	0	31	37	0	0	0	0	208
5:45 PM	0	0	0	0	18	32	20	0	0	0	61	0	0	14	23	0	0	0	0	168
	NL	NT	NR	NU	SL	ST	SR	SU	SU2	EL	ET	ER	EU	WL	WT	WR	WU	S2T2	S2R2	TOTAL
TOTAL VOLUMES :	0	0	0	0	94	354	205	0	1	0	501	1	0	189	272	0	0	1	7	1625
APPROACH %'s :					14.37%	54.13%	31.35%	0.00%	0.15%	0.00%	99.80%	0.20%	0.00%	41.00%	59.00%	0.00%	0.00%	12.50%	87.50%	
PEAK HR :	04:45 PM - 05:45 PM																			TOTAL
PEAK HR VOL :	0	0	0	0	49	182	103	0	1	0	255	1	0	100	142	0	0	1	5	839
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.721	0.813	0.780	0.000	0.250	0.000	0.873	0.250	0.000	0.806	0.934	0.000	0.000	0.250	0.417	0.889
							0.813				0.877				0.890					

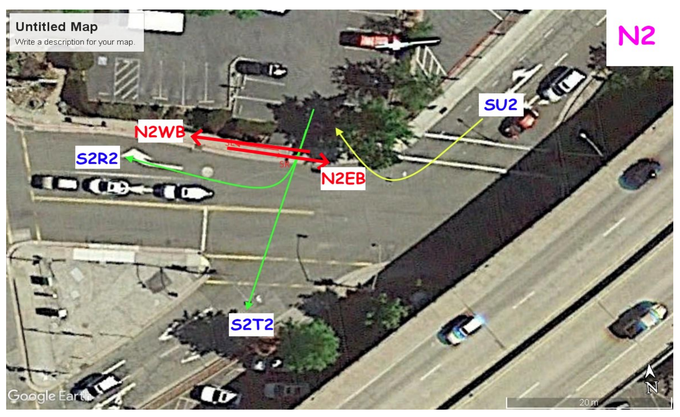
Explanation for extra leg movements

Movements entering the extra leg

SU2 Movements coming from SB on Tinloy St entering into the Extra Leg (Network Real Estate Dwy)

Movements exiting the extra leg

S2R2 Movements exiting from Extra Leg (Network Real Estate Dwy) entering into Neal Stheading WB
S2T2 Movements exiting from Extra Leg (Network Real Estate Dwy) entering into Neal Stheading SB



National Data & Surveying Services Intersection Turning Movement Count

Location: Tinloy St & Neal St
City: Grass Valley
Control: Signalized

Project ID: 22-070033-004
Date: 2/17/2022

Data - Cars

NS/EW Streets:	Tinloy St				Tinloy St					Neal St				Neal St						
AM	NORTHBOUND				SOUTHBOUND					EASTBOUND				WESTBOUND				SOUTHBOUND2		
	0	0	0	0	0.5	1	0.5	0	0	0	1	0	0	0	1	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	SU2	EL	ET	ER	EU	WL	WT	WR	WU	S2T2	S2R2	TOTAL
7:00 AM	0	0	0	0	2	15	6	0	0	0	23	0	0	6	9	0	0	0	0	61
7:15 AM	0	0	0	0	2	25	7	0	0	0	15	0	0	11	13	0	0	0	0	73
7:30 AM	0	0	0	0	7	9	7	0	0	0	30	0	0	13	16	0	0	0	0	82
7:45 AM	0	0	0	0	5	21	19	0	0	0	42	0	0	23	44	0	0	0	0	154
8:00 AM	0	0	0	0	14	30	12	0	0	0	73	3	0	11	26	0	0	0	0	169
8:15 AM	0	0	0	0	30	51	16	0	0	0	57	6	0	32	60	0	0	0	0	252
8:30 AM	0	0	0	0	5	44	13	0	0	0	42	1	0	22	49	0	0	0	0	176
8:45 AM	0	0	0	0	13	37	14	0	0	0	71	0	0	18	37	0	0	0	0	190
	NL	NT	NR	NU	SL	ST	SR	SU	SU2	EL	ET	ER	EU	WL	WT	WR	WU	S2T2	S2R2	TOTAL
TOTAL VOLUMES :	0	0	0	0	78	232	94	0	0	0	353	10	0	136	254	0	0	0	0	1157
APPROACH %'s :					19.31%	57.43%	23.27%	0.00%	0.00%	0.00%	97.25%	2.75%	0.00%	34.87%	65.13%	0.00%	0.00%			
PEAK HR :	08:00 AM - 09:00 AM																			TOTAL
PEAK HR VOL :	0	0	0	0	62	162	55	0	0	0	243	10	0	83	172	0	0	0	0	787
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.517	0.794	0.859	0.000	0.000	0.000	0.832	0.417	0.000	0.648	0.717	0.000	0.000	0.000	0.000	0.781
							0.719				0.832				0.693					

PM	NORTHBOUND				SOUTHBOUND					EASTBOUND				WESTBOUND						
	0	0	0	0	0.5	1	0.5	0	0	0	1	0	0	0	1	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	SU2	EL	ET	ER	EU	WL	WT	WR	WU	S2T2	S2R2	TOTAL
4:00 PM	0	0	0	0	12	52	26	0	0	0	63	0	0	27	36	0	0	0	1	217
4:15 PM	0	0	0	0	6	42	27	0	0	0	61	0	0	17	31	0	0	0	1	185
4:30 PM	0	0	0	0	8	44	24	0	0	0	61	0	0	21	38	0	0	0	0	196
4:45 PM	0	0	0	0	9	51	22	0	0	0	59	0	0	16	37	0	0	1	0	195
5:00 PM	0	0	0	0	14	54	29	0	1	0	72	1	0	26	30	0	0	0	2	229
5:15 PM	0	0	0	0	8	35	17	0	0	0	73	0	0	22	35	0	0	0	3	193
5:30 PM	0	0	0	0	17	37	32	0	0	0	51	0	0	29	36	0	0	0	0	202
5:45 PM	0	0	0	0	18	32	20	0	0	0	60	0	0	14	23	0	0	0	0	167
	NL	NT	NR	NU	SL	ST	SR	SU	SU2	EL	ET	ER	EU	WL	WT	WR	WU	S2T2	S2R2	TOTAL
TOTAL VOLUMES :	0	0	0	0	92	347	197	0	1	0	500	1	0	172	266	0	0	1	7	1584
APPROACH %'s :					14.44%	54.47%	30.93%	0.00%	0.16%	0.00%	99.80%	0.20%	0.00%	39.27%	60.73%	0.00%	0.00%	12.50%	87.50%	
PEAK HR :	04:45 PM - 05:45 PM																			TOTAL
PEAK HR VOL :	0	0	0	0	48	177	100	0	1	0	255	1	0	93	138	0	0	1	5	819
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.706	0.819	0.781	0.000	0.250	0.000	0.873	0.250	0.000	0.802	0.932	0.000	0.000	0.250	0.417	0.894
							0.832				0.877				0.888					

National Data & Surveying Services Intersection Turning Movement Count

Location: Tinloy St & Neal St
City: Grass Valley
Control: Signalized

Project ID: 22-070033-004
Date: 2/17/2022

Data - HT

NS/EW Streets:	Tinloy St				Tinloy St					Neal St				Neal St						
AM	NORTHBOUND				SOUTHBOUND					EASTBOUND				WESTBOUND				SOUTHBOUND2		
	0	0	0	0	0.5	1	0.5	0	0	0	1	0	0	0	1	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	SU2	EL	ET	ER	EU	WL	WT	WR	WU	S2T2	S2R2	TOTAL
7:00 AM	0	0	0	0	0	3	3	0	0	0	1	0	0	2	0	0	0	0	0	9
7:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	3	1	0	0	0	0	6
7:30 AM	0	0	0	0	0	3	4	0	0	0	1	0	0	5	1	0	0	0	0	14
7:45 AM	0	0	0	0	1	4	0	0	0	0	0	0	0	4	1	0	0	0	0	10
8:00 AM	0	0	0	0	0	3	2	0	0	0	3	0	0	4	0	0	0	0	0	12
8:15 AM	0	0	0	0	1	2	0	0	0	0	1	0	0	3	1	0	0	0	0	8
8:30 AM	0	0	0	0	1	2	1	0	0	0	1	0	0	5	1	0	0	0	0	11
8:45 AM	0	0	0	0	1	3	0	0	0	0	2	0	0	4	1	0	0	0	0	11
	NL	NT	NR	NU	SL	ST	SR	SU	SU2	EL	ET	ER	EU	WL	WT	WR	WU	S2T2	S2R2	TOTAL
TOTAL VOLUMES :	0	0	0	0	4	20	10	0	0	0	11	0	0	30	6	0	0	0	0	81
APPROACH %'s :					11.76%	58.82%	29.41%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	83.33%	16.67%	0.00%	0.00%			
PEAK HR :	08:00 AM - 09:00 AM																			TOTAL
PEAK HR VOL :	0	0	0	0	3	10	3	0	0	0	7	0	0	16	3	0	0	0	0	42
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.750	0.833	0.375	0.000	0.000	0.000	0.583	0.000	0.000	0.800	0.750	0.000	0.000	0.000	0.000	0.875
							0.800				0.583				0.792					

PM	NORTHBOUND				SOUTHBOUND					EASTBOUND				WESTBOUND						
	0	0	0	0	0.5	1	0.5	0	0	0	1	0	0	0	1	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	SU2	EL	ET	ER	EU	WL	WT	WR	WU	S2T2	S2R2	TOTAL
4:00 PM	0	0	0	0	0	1	3	0	0	0	0	0	0	5	1	0	0	0	0	10
4:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	4
4:30 PM	0	0	0	0	0	1	2	0	0	0	0	0	0	2	1	0	0	0	0	6
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	3
5:00 PM	0	0	0	0	1	2	2	0	0	0	0	0	0	1	1	0	0	0	0	7
5:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	2	1	0	0	0	0	4
5:30 PM	0	0	0	0	0	2	1	0	0	0	0	0	0	2	1	0	0	0	0	6
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	SU2	EL	ET	ER	EU	WL	WT	WR	WU	S2T2	S2R2	TOTAL
TOTAL VOLUMES :	0	0	0	0	2	7	8	0	0	0	1	0	0	17	6	0	0	0	0	41
APPROACH %'s :					11.76%	41.18%	47.06%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	73.91%	26.09%	0.00%	0.00%			
PEAK HR :	04:45 PM - 05:45 PM																			TOTAL
PEAK HR VOL :	0	0	0	0	1	5	3	0	0	0	0	0	0	7	4	0	0	0	0	20
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.625	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.875	1.000	0.000	0.000	0.000	0.000	0.714
							0.450								0.917					

National Data & Surveying Services Intersection Turning Movement Count

Location: Tinloy St & Neal St
City: Grass Valley
Control: Signalized

Project ID: 22-070033-004
Date: 2/17/2022

Data - Bikes

NS/EW Streets:	Tinloy St				Tinloy St					Neal St				Neal St						
AM	NORTHBOUND				SOUTHBOUND					EASTBOUND				WESTBOUND				SOUTHBOUND2		
	0	0	0	0	0.5	1	0.5	0	0	0	1	0	0	0	1	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	SU2	EL	ET	ER	EU	WL	WT	WR	WU	S2T2	S2R2	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	SU2	EL	ET	ER	EU	WL	WT	WR	WU	S2T2	S2R2	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																				
PEAK HR :	08:00 AM - 09:00 AM																			TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND					EASTBOUND				WESTBOUND						
	0	0	0	0	0.5	1	0.5	0	0	0	1	0	0	0	1	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	SU2	EL	ET	ER	EU	WL	WT	WR	WU	S2T2	S2R2	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	SU2	EL	ET	ER	EU	WL	WT	WR	WU	S2T2	S2R2	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
APPROACH %'s :														50.00%	50.00%	0.00%	0.00%			
PEAK HR :	04:45 PM - 05:45 PM																			TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.250
															0.250					

Prepared by National Data & Surveying Services

S Auburn St & Neal St

Peak Hour Turning Movement Count

ID: 22-070033-005
City: Grass Valley

Day: Thursday
Date: 2/17/2022

PEAK HOURS

AM: 08:00 AM - 09:00 AM
NOON: NONE
PM: 04:30 PM - 05:30 PM

COUNT PERIODS

AM: 7:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 06:00 PM

SOUTHBOUND (S Auburn St)

AM	38	172	53	0	361	AM
NOON	0	0	0	0	0	NOON
PM	84	218	50	0	386	PM
	0	1	1	0		

EASTBOUND (Neal St)

AM	NOON	PM	
290	0	366	
0	0	0	0
55	0	59	1
208	0	211	0.5
107	0	158	0.5
AM	NOON	PM	

WESTBOUND (Neal St)

PM	NOON	AM	
71	0	78	1
172	0	155	1
0	0	0	0
0	0	0	0
266	0	262	
PM	NOON	AM	

CONTROL

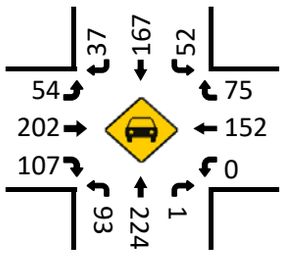
Signalized

TEV	1192 AM	0 NOON	1394 PM
PHF	0.93		0.91

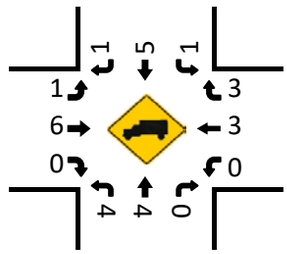
NORTHBOUND (S Auburn St)

PM	376	0	110	256	5	PM
NOON	0	0	0	0	0	NOON
AM	279	0	97	228	1	AM
		0	1	1	0	

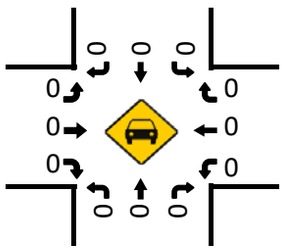
Cars (AM)



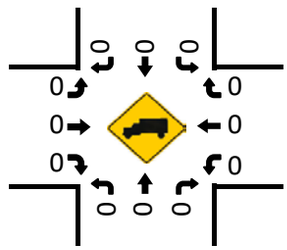
HT (AM)



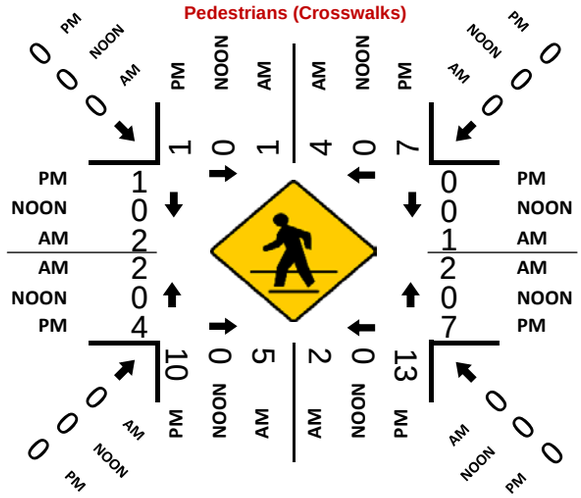
Cars (NOON)



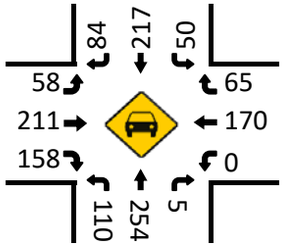
HT (NOON)



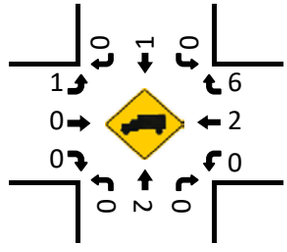
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: S Auburn St & Neal St
City: Grass Valley
Control: Signalized

Project ID: 22-070033-005
Date: 2/17/2022

Data - Total

NS/EW Streets:	S Auburn St				S Auburn St				Neal St				Neal St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	1	0.5	0.5	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	5	18	0	0	9	18	3	0	7	17	12	0	0	9	10	0	108
7:15 AM	8	31	0	0	3	23	2	0	5	12	7	0	0	10	11	0	112
7:30 AM	13	50	0	0	5	38	7	0	7	26	11	0	0	16	8	0	181
7:45 AM	24	43	1	0	9	33	8	0	10	32	15	0	0	53	15	0	243
8:00 AM	18	61	0	0	22	35	12	0	10	57	18	0	0	24	16	0	273
8:15 AM	28	58	1	0	13	39	8	0	12	50	29	0	0	51	24	0	313
8:30 AM	15	57	0	0	8	55	11	0	13	36	25	0	0	40	25	0	285
8:45 AM	36	52	0	0	10	43	7	0	20	65	35	0	0	40	13	0	321
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	147	370	2	0	79	284	58	0	84	295	152	0	0	243	122	0	1836
APPROACH %'s :	28.32%	71.29%	0.39%	0.00%	18.76%	67.46%	13.78%	0.00%	15.82%	55.56%	28.63%	0.00%	0.00%	66.58%	33.42%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	97	228	1	0	53	172	38	0	55	208	107	0	0	155	78	0	1192
PEAK HR FACTOR :	0.674	0.934	0.250	0.000	0.602	0.782	0.792	0.000	0.688	0.800	0.764	0.000	0.000	0.760	0.780	0.000	0.928
	0.926				0.889				0.771				0.777				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	1	0.5	0.5	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	33	63	1	0	6	62	15	0	10	58	36	0	0	46	25	0	355
4:15 PM	27	55	0	0	11	57	14	0	15	48	35	0	0	47	11	0	320
4:30 PM	33	74	0	0	11	52	17	0	11	50	29	0	0	44	23	0	344
4:45 PM	25	61	2	0	9	47	16	0	18	49	45	0	0	44	16	0	332
5:00 PM	28	59	3	0	18	75	28	0	12	51	45	0	0	48	16	0	383
5:15 PM	24	62	0	0	12	44	23	0	18	61	39	0	0	36	16	0	335
5:30 PM	22	55	1	0	9	32	22	0	21	42	20	0	0	57	14	0	295
5:45 PM	21	39	1	0	17	36	12	0	18	42	28	0	0	31	15	0	260
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	213	468	8	0	93	405	147	0	123	401	277	0	0	353	136	0	2624
APPROACH %'s :	30.91%	67.92%	1.16%	0.00%	14.42%	62.79%	22.79%	0.00%	15.36%	50.06%	34.58%	0.00%	0.00%	72.19%	27.81%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	110	256	5	0	50	218	84	0	59	211	158	0	0	172	71	0	1394
PEAK HR FACTOR :	0.833	0.865	0.417	0.000	0.694	0.727	0.750	0.000	0.819	0.865	0.878	0.000	0.000	0.896	0.772	0.000	0.910
	0.867				0.727				0.907				0.907				

National Data & Surveying Services Intersection Turning Movement Count

Location: S Auburn St & Neal St
City: Grass Valley
Control: Signalized

Project ID: 22-070033-005
Date: 2/17/2022

Data - Cars

NS/EW Streets:	S Auburn St				S Auburn St				Neal St				Neal St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	1	0.5	0.5	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	5	18	0	0	9	17	3	0	7	16	11	0	0	7	9	0	102
7:15 AM	7	28	0	0	3	22	2	0	5	10	7	0	0	10	10	0	104
7:30 AM	11	48	0	0	4	36	7	0	7	26	10	0	0	12	7	0	168
7:45 AM	24	43	1	0	9	32	8	0	10	32	15	0	0	52	15	0	241
8:00 AM	17	61	0	0	22	33	11	0	10	54	18	0	0	23	15	0	264
8:15 AM	27	56	1	0	13	38	8	0	11	49	29	0	0	51	23	0	306
8:30 AM	15	56	0	0	8	55	11	0	13	35	25	0	0	39	24	0	281
8:45 AM	34	51	0	0	9	41	7	0	20	64	35	0	0	39	13	0	313
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	140	361	2	0	77	274	57	0	83	286	150	0	0	233	116	0	1779
APPROACH %'s :	27.83%	71.77%	0.40%	0.00%	18.87%	67.16%	13.97%	0.00%	15.99%	55.11%	28.90%	0.00%	0.00%	66.76%	33.24%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	93	224	1	0	52	167	37	0	54	202	107	0	0	152	75	0	1164
PEAK HR FACTOR :	0.684	0.918	0.250	0.000	0.591	0.759	0.841	0.000	0.675	0.789	0.764	0.000	0.000	0.745	0.781	0.000	0.930
	0.935				0.865				0.763				0.767				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	1	0.5	0.5	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	33	60	1	0	6	61	15	0	10	58	36	0	0	43	22	0	345
4:15 PM	26	54	0	0	11	57	14	0	15	48	35	0	0	47	11	0	318
4:30 PM	33	74	0	0	11	52	17	0	11	50	29	0	0	43	21	0	341
4:45 PM	25	60	2	0	9	46	16	0	18	49	45	0	0	44	15	0	329
5:00 PM	28	59	3	0	18	75	28	0	12	51	45	0	0	47	14	0	380
5:15 PM	24	61	0	0	12	44	23	0	17	61	39	0	0	36	15	0	332
5:30 PM	22	54	1	0	9	31	22	0	21	42	20	0	0	56	13	0	291
5:45 PM	21	38	1	0	17	34	12	0	17	41	28	0	0	31	15	0	255
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	212	460	8	0	93	400	147	0	121	400	277	0	0	347	126	0	2591
APPROACH %'s :	31.18%	67.65%	1.18%	0.00%	14.53%	62.50%	22.97%	0.00%	15.16%	50.13%	34.71%	0.00%	0.00%	73.36%	26.64%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	110	254	5	0	50	217	84	0	58	211	158	0	0	170	65	0	1382
PEAK HR FACTOR :	0.833	0.858	0.417	0.000	0.694	0.723	0.750	0.000	0.806	0.865	0.878	0.000	0.000	0.904	0.774	0.000	0.909
	0.862				0.725				0.912				0.918				

National Data & Surveying Services Intersection Turning Movement Count

Location: S Auburn St & Neal St
City: Grass Valley
Control: Signalized

Project ID: 22-070033-005
Date: 2/17/2022

Data - HT

NS/EW Streets:	S Auburn St				S Auburn St				Neal St				Neal St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	1	0.5	0.5	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	1	0	0	0	1	1	0	0	2	1	0	6
7:15 AM	1	3	0	0	0	1	0	0	0	2	0	0	0	0	1	0	8
7:30 AM	2	2	0	0	1	2	0	0	0	0	1	0	0	4	1	0	13
7:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
8:00 AM	1	0	0	0	0	2	1	0	0	3	0	0	0	1	1	0	9
8:15 AM	1	2	0	0	0	1	0	0	1	1	0	0	0	0	1	0	7
8:30 AM	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	0	4
8:45 AM	2	1	0	0	1	2	0	0	0	1	0	0	0	1	0	0	8
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	7	9	0	0	2	10	1	0	1	9	2	0	0	10	6	0	57
APPROACH %'s :	43.75%	56.25%	0.00%	0.00%	15.38%	76.92%	7.69%	0.00%	8.33%	75.00%	16.67%	0.00%	0.00%	62.50%	37.50%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	4	4	0	0	1	5	1	0	1	6	0	0	0	3	3	0	28
PEAK HR FACTOR :	0.500	0.500	0.000	0.000	0.250	0.625	0.250	0.000	0.250	0.500	0.000	0.000	0.000	0.750	0.750	0.000	0.778
	0.667				0.583				0.583				0.750				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	1	0.5	0.5	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	3	0	0	0	1	0	0	0	0	0	0	0	3	3	0	10
4:15 PM	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3
4:45 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	3
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3
5:15 PM	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	3
5:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	1	1	0	4
5:45 PM	0	1	0	0	0	2	0	0	1	1	0	0	0	0	0	0	5
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	8	0	0	0	5	0	0	2	1	0	0	0	6	10	0	33
APPROACH %'s :	11.11%	88.89%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	66.67%	33.33%	0.00%	0.00%	0.00%	37.50%	62.50%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	2	0	0	0	1	0	0	1	0	0	0	0	2	6	0	12
PEAK HR FACTOR :	0.000	0.500	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.500	0.750	0.000	1.000
	0.500				0.250				0.250				0.667				

National Data & Surveying Services Intersection Turning Movement Count

Location: S Auburn St & Neal St
City: Grass Valley
Control: Signalized

Project ID: 22-070033-005
Date: 2/17/2022

Data - Bikes

NS/EW Streets:	S Auburn St				S Auburn St				Neal St				Neal St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	1	0.5	0.5	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	3
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%					50.00%	0.00%	50.00%	0.00%					
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
PEAK HR FACTOR :	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
	0.250				0.000				0.250								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	1	0.5	0.5	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
4:30 PM	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	3
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	1	0	0	0	2	1	0	0	0	2	0	0	1	0	0	8
APPROACH %'s :	50.00%	50.00%	0.00%	0.00%	0.00%	66.67%	33.33%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	1	0	0	0	0	2	0	0	0	0	1	0	0	1	0	0	5
PEAK HR FACTOR :	0.250	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.417
	0.250				0.500				0.250				0.250				

Appendix B – Existing Conditions Intersection Level of Service Worksheets

Intersection	
Intersection Delay, s/veh	13.9
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	552	122	22	286	82	30
Future Vol, veh/h	552	122	22	286	82	30
Peak Hour Factor	0.88	0.88	0.84	0.84	0.74	0.74
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	627	139	26	340	111	41
Number of Lanes	2	0	0	2	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	2
HCM Control Delay	15.5	11.5	11.4
HCM LOS	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	73%	0%	0%	19%	0%
Vol Thru, %	0%	100%	60%	81%	100%
Vol Right, %	27%	0%	40%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	112	368	306	117	191
LT Vol	82	0	0	22	0
Through Vol	0	368	184	95	191
RT Vol	30	0	122	0	0
Lane Flow Rate	151	418	348	140	227
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.26	0.64	0.505	0.233	0.373
Departure Headway (Hd)	6.189	5.509	5.227	6.01	5.915
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	581	661	695	598	608
Service Time	4.22	3.209	2.927	3.743	3.648
HCM Lane V/C Ratio	0.26	0.632	0.501	0.234	0.373
HCM Control Delay	11.4	17.5	13.1	10.6	12.1
HCM Lane LOS	B	C	B	B	B
HCM 95th-tile Q	1	4.6	2.9	0.9	1.7

Intersection	
Intersection Delay, s/veh	24.2
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	265	36	38	326	268	424
Future Vol, veh/h	265	36	38	326	268	424
Peak Hour Factor	0.88	0.88	0.91	0.91	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	301	41	42	358	315	499
Number of Lanes	1	0	0	2	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	22.2	15.8	29.2
HCM LOS	C	C	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	26%	0%
Vol Thru, %	0%	0%	88%	74%	100%
Vol Right, %	0%	100%	12%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	268	424	301	147	217
LT Vol	268	0	0	38	0
Through Vol	0	0	265	109	217
RT Vol	0	424	36	0	0
Lane Flow Rate	315	499	342	161	239
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.641	0.844	0.655	0.335	0.487
Departure Headway (Hd)	7.314	6.092	6.89	7.478	7.345
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	492	594	523	479	490
Service Time	5.082	3.86	4.952	5.256	5.123
HCM Lane V/C Ratio	0.64	0.84	0.654	0.336	0.488
HCM Control Delay	22.3	33.5	22.2	14	17
HCM Lane LOS	C	D	C	B	C
HCM 95th-tile Q	4.5	9	4.7	1.5	2.6

Intersection	
Intersection Delay, s/veh	20.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	57	313	4	0	0	0	0	175	241	144	235	0
Future Vol, veh/h	57	313	4	0	0	0	0	175	241	144	235	0
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.87	0.87	0.87	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	364	5	0	0	0	0	201	277	150	245	0
Number of Lanes	0	2	0	0	0	0	0	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	15.3	31.1	14.3
HCM LOS	C	D	B

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	27%	0%	100%	0%
Vol Thru, %	42%	73%	98%	0%	100%
Vol Right, %	58%	0%	2%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	416	214	161	144	235
LT Vol	0	57	0	144	0
Through Vol	175	157	157	0	235
RT Vol	241	0	4	0	0
Lane Flow Rate	478	248	187	150	245
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.817	0.49	0.36	0.3	0.455
Departure Headway (Hd)	6.151	7.104	6.95	7.199	6.688
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	588	506	515	497	536
Service Time	4.213	4.874	4.72	4.976	4.465
HCM Lane V/C Ratio	0.813	0.49	0.363	0.302	0.457
HCM Control Delay	31.1	16.6	13.6	13.1	15
HCM Lane LOS	D	C	B	B	B
HCM 95th-tile Q	8.3	2.7	1.6	1.2	2.4

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	40	149	202	294	159	55
Future Vol, veh/h	40	149	202	294	159	55
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, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	83	83	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	173	243	354	204	71

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	840	0
Stage 1	-	-	0	-
Stage 2	-	-	840	-
Critical Hdwy	4.12	-	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.52	-
Follow-up Hdwy	2.218	-	4.018	3.318
Pot Cap-1 Maneuver	-	-	302	-
Stage 1	-	-	-	-
Stage 2	-	-	381	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	0	-
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	NB	SB
HCM Control Delay, s		
HCM LOS		-

Minor Lane/Major Mvmt	NBL	NBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	-
HCM Lane LOS	-	-	-
HCM 95th %tile Q(veh)	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	250	10	99	175	0	0	0	0	65	172	58
Future Volume (veh/h)	0	250	10	99	175	0	0	0	0	65	172	58
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	305	12	139	246	0				88	232	78
Peak Hour Factor	0.82	0.82	0.82	0.71	0.71	0.71				0.74	0.74	0.74
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	690	27	302	400	0				246	672	235
Arrive On Green	0.00	0.39	0.39	0.39	0.39	0.00				0.32	0.32	0.32
Sat Flow, veh/h	0	1787	70	356	1036	0				761	2082	729
Grp Volume(v), veh/h	0	0	317	385	0	0				212	0	186
Grp Sat Flow(s),veh/h/ln	0	0	1858	1392	0	0				1832	0	1739
Q Serve(g_s), s	0.0	0.0	3.8	3.5	0.0	0.0				2.6	0.0	2.4
Cycle Q Clear(g_c), s	0.0	0.0	3.8	7.3	0.0	0.0				2.6	0.0	2.4
Prop In Lane	0.00		0.04	0.36		0.00				0.42		0.42
Lane Grp Cap(c), veh/h	0	0	717	701	0	0				591	0	561
V/C Ratio(X)	0.00	0.00	0.44	0.55	0.00	0.00				0.36	0.00	0.33
Avail Cap(c_a), veh/h	0	0	1680	1462	0	0				1185	0	1125
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	6.8	7.8	0.0	0.0				7.7	0.0	7.7
Incr Delay (d2), s/veh	0.0	0.0	0.4	0.7	0.0	0.0				0.4	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
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.0	1.3	0.0	0.0				0.7	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	7.2	8.4	0.0	0.0				8.1	0.0	8.0
LnGrp LOS	A	A	A	A	A	A				A	A	A
Approach Vol, veh/h		317			385						398	
Approach Delay, s/veh		7.2			8.4						8.1	
Approach LOS		A			A						A	

Timer - Assigned Phs		4		6		8
Phs Duration (G+Y+Rc), s		15.5		14.3		15.5
Change Period (Y+Rc), s		4.0		4.7		4.0
Max Green Setting (Gmax), s		27.0		19.3		27.0
Max Q Clear Time (g_c+I1), s		5.8		4.6		9.3
Green Ext Time (p_c), s		1.9		2.0		2.6

Intersection Summary		
HCM 6th Ctrl Delay	7.9	
HCM 6th LOS	A	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	208	107	0	155	78	97	228	1	53	172	38
Future Volume (veh/h)	55	208	107	0	155	78	97	228	1	53	172	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	71	270	139	0	199	100	104	245	1	60	193	43
Peak Hour Factor	0.77	0.77	0.77	0.78	0.78	0.78	0.93	0.93	0.93	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	570	421	217	0	679	570	544	644	3	541	512	114
Arrive On Green	0.36	0.36	0.36	0.00	0.36	0.36	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1073	1159	596	0	1870	1568	1140	1861	8	1130	1479	330
Grp Volume(v), veh/h	71	0	409	0	199	100	104	0	246	60	0	236
Grp Sat Flow(s),veh/h/ln	1073	0	1755	0	1870	1568	1140	0	1869	1130	0	1809
Q Serve(g_s), s	1.4	0.0	5.3	0.0	2.1	1.2	2.1	0.0	2.7	1.2	0.0	2.7
Cycle Q Clear(g_c), s	3.5	0.0	5.3	0.0	2.1	1.2	4.8	0.0	2.7	3.9	0.0	2.7
Prop In Lane	1.00		0.34	0.00		1.00	1.00		0.00	1.00		0.18
Lane Grp Cap(c), veh/h	570	0	638	0	679	570	544	0	647	541	0	626
V/C Ratio(X)	0.12	0.00	0.64	0.00	0.29	0.18	0.19	0.00	0.38	0.11	0.00	0.38
Avail Cap(c_a), veh/h	999	0	1339	0	1427	1196	1227	0	1766	1217	0	1709
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.5	0.0	7.3	0.0	6.2	6.0	8.6	0.0	6.8	8.2	0.0	6.8
Incr Delay (d2), s/veh	0.1	0.0	1.1	0.0	0.2	0.1	0.2	0.0	0.4	0.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.4	0.0	0.5	0.3	0.4	0.0	0.7	0.2	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.6	0.0	8.4	0.0	6.5	6.1	8.7	0.0	7.1	8.3	0.0	7.1
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		480			299			350			296	
Approach Delay, s/veh		8.2			6.4			7.6			7.4	
Approach LOS		A			A			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	13.5	14.0	13.5	14.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	26.0	21.0	26.0	21.0
Max Q Clear Time (g_c+I1), s	6.8	7.3	5.9	4.1
Green Ext Time (p_c), s	1.8	2.6	1.6	1.4

Intersection Summary	
HCM 6th Ctrl Delay	7.5
HCM 6th LOS	A

1: Railroad Ave & Idaho Maryland Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.9	0.2	0.3
Total Del/Veh (s)	5.5	7.3	5.3	6.0

2: SR 20 EB Ramps & Idaho Maryland Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.3	0.0	1.9	1.0
Total Del/Veh (s)	8.2	7.2	7.1	7.3

3: Ophir St & E Bennett St Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.8	12.1	0.6	4.6

4: E Bennett Wy & Hansen Wy/SR 20 EB On-Ramp Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.0	9.4	8.4	9.0

5: E Bennett Wy & Tinloy St/SR 20 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.8	0.0	0.3	0.9
Total Del/Veh (s)	11.2	9.8	1.1	7.7

6: SR 174 & Ophir St Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.0	0.5	0.0	0.2
Total Del/Veh (s)	1.2	0.5	7.6	2.4

7: Hansen Wy & Neal St/SR 174 Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.1
Total Del/Veh (s)	1.5	8.5	7.0	5.8

8: Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	10.7	12.5	8.1	10.3

9: S Auburn St & Neal St Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.9	0.0	0.0	1.0	0.5
Total Del/Veh (s)	15.7	10.9	12.3	12.1	13.0

Total Zone Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	227.0

Intersection: 1: Railroad Ave & Idaho Maryland Rd

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	LT	T	LR
Maximum Queue (ft)	58	92	51	80	77
Average Queue (ft)	37	54	28	49	38
95th Queue (ft)	55	77	45	73	64
Link Distance (ft)	110	110		550	438
Upstream Blk Time (%)		0			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)			180		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: SR 20 EB Ramps & Idaho Maryland Rd

Movement	EB	WB	WB	NB	NB
Directions Served	TR	LT	T	L	R
Maximum Queue (ft)	91	56	79	136	124
Average Queue (ft)	53	33	43	53	65
95th Queue (ft)	81	44	66	89	96
Link Distance (ft)	664	110	110		738
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				360	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Ophir St & E Bennett St

Movement	EB	WB
Directions Served	TR	LT
Maximum Queue (ft)	95	96
Average Queue (ft)	47	50
95th Queue (ft)	76	80
Link Distance (ft)	308	2244
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: E Bennett Wy & Hansen Wy/SR 20 EB On-Ramp

Movement	EB	EB	NB	SB	SB
Directions Served	LT	TR	TR	L	T
Maximum Queue (ft)	60	72	196	79	111
Average Queue (ft)	34	41	66	41	54
95th Queue (ft)	55	63	125	69	93
Link Distance (ft)	833	833	527		201
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				40	
Storage Blk Time (%)				5	9
Queuing Penalty (veh)				11	13

Intersection: 5: E Bennett Wy & Tinloy St/SR 20 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	151	138	25	87	42
Average Queue (ft)	61	68	10	39	2
95th Queue (ft)	112	111	29	68	16
Link Distance (ft)		684		201	340
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	110		50		
Storage Blk Time (%)	1	1		3	
Queuing Penalty (veh)	3	2		0	

Intersection: 6: SR 174 & Ophir St

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	61	31	118
Average Queue (ft)	10	2	53
95th Queue (ft)	38	12	93
Link Distance (ft)	1006	210	215
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Hansen Wy & Neal St/SR 174

Movement	WB	NB	NB
Directions Served	TR	LT	TR
Maximum Queue (ft)	171	70	69
Average Queue (ft)	71	40	29
95th Queue (ft)	113	61	50
Link Distance (ft)	527	374	374
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	93	151	112	65
Average Queue (ft)	63	81	46	32
95th Queue (ft)	100	136	80	57
Link Distance (ft)	80	153	265	265
Upstream Blk Time (%)	5	0		
Queuing Penalty (veh)	14	0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: S Auburn St & Neal St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	T	R	L	TR	L	TR
Maximum Queue (ft)	99	190	129	80	77	77	64	118
Average Queue (ft)	26	73	58	36	49	64	24	69
95th Queue (ft)	77	153	110	77	84	89	52	110
Link Distance (ft)		677	80		59	59		427
Upstream Blk Time (%)			4	0	6	14		
Queuing Penalty (veh)			9	0	11	26		
Storage Bay Dist (ft)	60			70			110	
Storage Blk Time (%)	0	12	6	0				1
Queuing Penalty (veh)	0	7	5	0				0

Zone Summary

Zone wide Queuing Penalty: 102

Intersection	
Intersection Delay, s/veh	18.5
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	365	72	23	629	93	30
Future Vol, veh/h	365	72	23	629	93	30
Peak Hour Factor	0.97	0.97	0.80	0.80	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	376	74	29	786	115	37
Number of Lanes	2	0	0	2	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	2
HCM Control Delay	12.3	23.1	11.9
HCM LOS	B	C	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	76%	0%	0%	10%	0%
Vol Thru, %	0%	100%	63%	90%	100%
Vol Right, %	24%	0%	37%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	123	243	194	233	419
LT Vol	93	0	0	23	0
Through Vol	0	243	122	210	419
RT Vol	30	0	72	0	0
Lane Flow Rate	152	251	200	291	524
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.272	0.421	0.321	0.458	0.818
Departure Headway (Hd)	6.453	6.044	5.78	5.667	5.617
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	557	595	621	637	645
Service Time	4.487	3.782	3.518	3.395	3.345
HCM Lane V/C Ratio	0.273	0.422	0.322	0.457	0.812
HCM Control Delay	11.9	13.1	11.2	13.1	28.7
HCM Lane LOS	B	B	B	B	D
HCM 95th-tile Q	1.1	2.1	1.4	2.4	8.5

Intersection	
Intersection Delay, s/veh	37.8
Intersection LOS	E

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	186	37	56	689	169	195
Future Vol, veh/h	186	37	56	689	169	195
Peak Hour Factor	0.76	0.76	0.78	0.78	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	245	49	72	883	186	214
Number of Lanes	1	0	0	2	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	16.8	53.9	14.9
HCM LOS	C	F	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	20%	0%
Vol Thru, %	0%	0%	83%	80%	100%
Vol Right, %	0%	100%	17%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	169	195	223	286	459
LT Vol	169	0	0	56	0
Through Vol	0	0	186	230	459
RT Vol	0	195	37	0	0
Lane Flow Rate	186	214	293	366	589
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.405	0.396	0.529	0.659	1.043
Departure Headway (Hd)	8.028	6.801	6.632	6.476	6.377
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	451	534	546	560	571
Service Time	5.728	4.501	4.632	4.206	4.107
HCM Lane V/C Ratio	0.412	0.401	0.537	0.654	1.032
HCM Control Delay	16.1	13.9	16.8	20.9	74.5
HCM Lane LOS	C	B	C	C	F
HCM 95th-tile Q	1.9	1.9	3.1	4.8	16.4

Intersection	
Intersection Delay, s/veh	15.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	60	282	1	0	0	0	0	119	145	171	318	0
Future Vol, veh/h	60	282	1	0	0	0	0	119	145	171	318	0
Peak Hour Factor	0.88	0.88	0.88	0.92	0.92	0.92	0.93	0.93	0.93	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	68	320	1	0	0	0	0	128	156	199	370	0
Number of Lanes	0	2	0	0	0	0	0	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	14.1	15.1	17.4
HCM LOS	B	C	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	30%	0%	100%	0%
Vol Thru, %	45%	70%	99%	0%	100%
Vol Right, %	55%	0%	1%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	264	201	142	171	318
LT Vol	0	60	0	171	0
Through Vol	119	141	141	0	318
RT Vol	145	0	1	0	0
Lane Flow Rate	284	228	161	199	370
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.49	0.442	0.305	0.373	0.641
Departure Headway (Hd)	6.213	6.962	6.805	6.747	6.239
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	579	516	528	533	577
Service Time	4.266	4.717	4.56	4.5	3.991
HCM Lane V/C Ratio	0.491	0.442	0.305	0.373	0.641
HCM Control Delay	15.1	15.2	12.5	13.5	19.5
HCM Lane LOS	C	C	B	B	C
HCM 95th-tile Q	2.7	2.2	1.3	1.7	4.6

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	124	126	137	210	65
Future Vol, veh/h	50	124	126	137	210	65
Conflicting Peds, #/hr	0	1	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	89	89	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	57	143	142	154	239	74

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	438	0
Stage 1	-	-	0	-
Stage 2	-	-	438	-
Critical Hdwy	4.12	-	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.52	-
Follow-up Hdwy	2.218	-	4.018	3.318
Pot Cap-1 Maneuver	-	-	512	-
Stage 1	-	-	-	-
Stage 2	-	-	579	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	0	-
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	NB	SB
HCM Control Delay, s		
HCM LOS		-

Minor Lane/Major Mvmt	NBL	NBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	-
HCM Lane LOS	-	-	-
HCM 95th %tile Q(veh)	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	255	1	100	142	0	0	0	0	49	182	103
Future Volume (veh/h)	0	255	1	100	142	0	0	0	0	49	182	103
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	290	1	112	160	0				60	225	127
Peak Hour Factor	0.88	0.88	0.88	0.89	0.89	0.89				0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	616	2	309	323	0				174	665	392
Arrive On Green	0.00	0.33	0.33	0.33	0.33	0.00				0.35	0.35	0.35
Sat Flow, veh/h	0	1863	6	372	978	0				497	1897	1119
Grp Volume(v), veh/h	0	0	291	272	0	0				223	0	189
Grp Sat Flow(s),veh/h/ln	0	0	1869	1350	0	0				1846	0	1667
Q Serve(g_s), s	0.0	0.0	3.4	1.6	0.0	0.0				2.4	0.0	2.3
Cycle Q Clear(g_c), s	0.0	0.0	3.4	5.0	0.0	0.0				2.4	0.0	2.3
Prop In Lane	0.00		0.00	0.41		0.00				0.27		0.67
Lane Grp Cap(c), veh/h	0	0	618	632	0	0				647	0	584
V/C Ratio(X)	0.00	0.00	0.47	0.43	0.00	0.00				0.34	0.00	0.32
Avail Cap(c_a), veh/h	0	0	1782	1531	0	0				1374	0	1241
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	7.2	7.5	0.0	0.0				6.5	0.0	6.5
Incr Delay (d2), s/veh	0.0	0.0	0.6	0.5	0.0	0.0				0.3	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
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.9	0.8	0.0	0.0				0.6	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	7.8	8.0	0.0	0.0				6.9	0.0	6.8
LnGrp LOS	A	A	A	A	A	A				A	A	A
Approach Vol, veh/h		291			272						412	
Approach Delay, s/veh		7.8			8.0						6.8	
Approach LOS		A			A						A	

Timer - Assigned Phs		4		6		8
Phs Duration (G+Y+Rc), s		13.0		14.3		13.0
Change Period (Y+Rc), s		4.0		4.7		4.0
Max Green Setting (Gmax), s		26.0		20.3		26.0
Max Q Clear Time (g_c+I1), s		5.4		4.4		7.0
Green Ext Time (p_c), s		1.7		2.2		1.7

Intersection Summary	
HCM 6th Ctrl Delay	7.4
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	211	158	0	172	71	110	256	5	50	218	84
Future Volume (veh/h)	59	211	158	0	172	71	110	256	5	50	218	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	1.00		0.95	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	232	174	0	189	78	126	294	6	68	299	115
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.87	0.87	0.87	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	512	341	256	0	654	524	441	760	16	538	530	204
Arrive On Green	0.35	0.35	0.35	0.00	0.35	0.35	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	1090	977	732	0	1870	1501	969	1826	37	1074	1274	490
Grp Volume(v), veh/h	65	0	406	0	189	78	126	0	300	68	0	414
Grp Sat Flow(s),veh/h/ln	1090	0	1709	0	1870	1501	969	0	1863	1074	0	1764
Q Serve(g_s), s	1.6	0.0	6.9	0.0	2.5	1.2	3.9	0.0	3.8	1.6	0.0	6.1
Cycle Q Clear(g_c), s	4.1	0.0	6.9	0.0	2.5	1.2	10.0	0.0	3.8	5.4	0.0	6.1
Prop In Lane	1.00		0.43	0.00		1.00	1.00		0.02	1.00		0.28
Lane Grp Cap(c), veh/h	512	0	597	0	654	524	441	0	775	538	0	734
V/C Ratio(X)	0.13	0.00	0.68	0.00	0.29	0.15	0.29	0.00	0.39	0.13	0.00	0.56
Avail Cap(c_a), veh/h	802	0	1052	0	1151	924	776	0	1420	909	0	1345
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.5	0.0	9.5	0.0	8.0	7.6	11.4	0.0	6.9	8.8	0.0	7.6
Incr Delay (d2), s/veh	0.1	0.0	1.4	0.0	0.2	0.1	0.4	0.0	0.3	0.1	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.1	0.0	0.8	0.3	0.7	0.0	1.1	0.3	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.6	0.0	10.8	0.0	8.3	7.7	11.8	0.0	7.2	8.9	0.0	8.3
LnGrp LOS	A	A	B	A	A	A	B	A	A	A	A	A
Approach Vol, veh/h		471			267			426			482	
Approach Delay, s/veh		10.7			8.1			8.6			8.4	
Approach LOS		B			A			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	18.2	15.9	18.2	15.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	26.0	21.0	26.0	21.0
Max Q Clear Time (g_c+I1), s	12.0	8.9	8.1	4.5
Green Ext Time (p_c), s	2.1	2.4	2.9	1.2

Intersection Summary	
HCM 6th Ctrl Delay	9.0
HCM 6th LOS	A

1: Railroad Ave & Idaho Maryland Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	2.4	1.2	0.2	0.2	0.7
Total Del/Veh (s)	6.0	4.2	6.8	10.9	5.8	4.1	8.5

2: SR 20 EB Ramps & Idaho Maryland Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.3	0.3	0.0	0.0	3.6	0.7	0.6
Total Del/Veh (s)	8.7	4.7	8.0	8.2	6.4	4.0	7.4

3: Ophir St & E Bennett St Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.2	4.9	9.6	11.4	0.6	0.3	4.9

4: E Bennett Wy & Hansen Wy/SR 20 EB On-Ramp Performance by movement

Movement	EBL	EBT	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.0	0.1	0.0	0.3	0.1	0.1
Total Del/Veh (s)	7.4	9.2	10.5	6.0	9.4	11.7	9.7

5: E Bennett Wy & Tinloy St/SR 20 WB Off-Ramp Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	3.3	1.3	1.1	0.0	0.0	0.5	0.5	1.1
Total Del/Veh (s)	26.8	27.6	23.6	12.8	11.5	2.9	1.2	14.5

6: SR 174 & Ophir St Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.3	0.2	0.0	0.2
Total Del/Veh (s)	3.2	0.4	1.1	0.4	0.4	11.4	8.4	4.6

7: Hansen Wy & Neal St/SR 174 Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	1.2	1.5	9.5	6.4	11.0	9.2	3.9	5.4

8: Tinloy St & Neal St Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.8	5.1	16.2	13.9	9.5	7.6	4.3	9.8

9: S Auburn St & Neal St Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	3.3	0.7	0.5	0.0	0.0	0.0	0.0	0.0	3.3	0.6	0.6	0.6
Total Del/Veh (s)	21.8	18.2	14.5	13.6	5.1	26.8	9.6	3.7	19.2	17.9	14.3	15.6

Total Zone Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	300.3

Intersection: 1: Railroad Ave & Idaho Maryland Rd

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	LT	T	LR
Maximum Queue (ft)	79	74	164	169	77
Average Queue (ft)	36	43	48	92	45
95th Queue (ft)	55	65	98	135	71
Link Distance (ft)	110	110		550	438
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			180		
Storage Blk Time (%)			0	0	
Queuing Penalty (veh)			0	0	

Intersection: 2: SR 20 EB Ramps & Idaho Maryland Rd

Movement	EB	WB	WB	NB	NB
Directions Served	TR	LT	T	L	R
Maximum Queue (ft)	160	109	117	53	89
Average Queue (ft)	60	62	65	37	41
95th Queue (ft)	103	88	90	55	69
Link Distance (ft)	664	110	110		738
Upstream Blk Time (%)		0	0		
Queuing Penalty (veh)		0	0		
Storage Bay Dist (ft)				360	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Ophir St & E Bennett St

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	84	73	21
Average Queue (ft)	53	48	1
95th Queue (ft)	73	70	10
Link Distance (ft)	308	2244	215
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: E Bennett Wy & Hansen Wy/SR 20 EB On-Ramp

Movement	EB	EB	NB	SB	SB
Directions Served	LT	TR	TR	L	T
Maximum Queue (ft)	61	73	103	79	186
Average Queue (ft)	31	41	47	62	74
95th Queue (ft)	51	65	87	90	136
Link Distance (ft)	833	833	527		201
Upstream Blk Time (%)					0
Queuing Penalty (veh)					0
Storage Bay Dist (ft)				40	
Storage Blk Time (%)				10	24
Queuing Penalty (veh)				38	47

Intersection: 5: E Bennett Wy & Tinloy St/SR 20 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	160	581	25	65	43
Average Queue (ft)	105	163	14	37	4
95th Queue (ft)	177	383	34	63	19
Link Distance (ft)		684		201	340
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	110		50		
Storage Blk Time (%)	12	17		4	
Queuing Penalty (veh)	37	55		1	

Intersection: 6: SR 174 & Ophir St

Movement	EB	SB
Directions Served	LR	TR
Maximum Queue (ft)	46	187
Average Queue (ft)	10	79
95th Queue (ft)	32	141
Link Distance (ft)	1006	215
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Hansen Wy & Neal St/SR 174

Movement	WB	NB	NB
Directions Served	TR	LT	TR
Maximum Queue (ft)	138	72	46
Average Queue (ft)	70	35	25
95th Queue (ft)	112	56	46
Link Distance (ft)	527	374	374
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	89	160	89	81
Average Queue (ft)	67	80	46	44
95th Queue (ft)	102	127	74	73
Link Distance (ft)	80	153	265	265
Upstream Blk Time (%)	5	0		
Queuing Penalty (veh)	17	1		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: S Auburn St & Neal St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	T	R	L	TR	L	TR
Maximum Queue (ft)	99	313	128	80	77	98	165	313
Average Queue (ft)	37	106	73	35	57	66	38	139
95th Queue (ft)	99	213	121	83	85	95	90	240
Link Distance (ft)		677	80		59	59		427
Upstream Blk Time (%)			5	0	17	16		
Queuing Penalty (veh)			14	0	40	37		
Storage Bay Dist (ft)	60			70			110	
Storage Blk Time (%)		19	9	0			0	11
Queuing Penalty (veh)		12	7	1			0	8

Zone Summary

Zone wide Queuing Penalty: 314

Appendix C – Existing Plus Project Conditions Intersections Level of Service Worksheets

Intersection	
Intersection Delay, s/veh	14
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	558	122	22	294	82	30
Future Vol, veh/h	558	122	22	294	82	30
Peak Hour Factor	0.88	0.88	0.84	0.84	0.74	0.74
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	634	139	26	350	111	41
Number of Lanes	2	0	0	2	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	2
HCM Control Delay	15.7	11.7	11.4
HCM LOS	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	73%	0%	0%	18%	0%
Vol Thru, %	0%	100%	60%	82%	100%
Vol Right, %	27%	0%	40%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	112	372	308	120	196
LT Vol	82	0	0	22	0
Through Vol	0	372	186	98	196
RT Vol	30	0	122	0	0
Lane Flow Rate	151	423	350	143	233
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.261	0.646	0.51	0.239	0.384
Departure Headway (Hd)	6.216	5.503	5.244	6.021	5.928
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	578	659	693	597	607
Service Time	4.245	3.224	2.944	3.753	3.66
HCM Lane V/C Ratio	0.261	0.642	0.505	0.24	0.384
HCM Control Delay	11.4	17.7	13.3	10.6	12.3
HCM Lane LOS	B	C	B	B	B
HCM 95th-tile Q	1	4.7	2.9	0.9	1.8

Intersection	
Intersection Delay, s/veh	24.9
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	265	36	38	334	268	430
Future Vol, veh/h	265	36	38	334	268	430
Peak Hour Factor	0.88	0.88	0.91	0.91	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	301	41	42	367	315	506
Number of Lanes	1	0	0	2	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	22.4	16.1	30.4
HCM LOS	C	C	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	25%	0%
Vol Thru, %	0%	0%	88%	75%	100%
Vol Right, %	0%	100%	12%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	268	430	301	149	223
LT Vol	268	0	0	38	0
Through Vol	0	0	265	111	223
RT Vol	0	430	36	0	0
Lane Flow Rate	315	506	342	164	245
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.643	0.859	0.657	0.342	0.501
Departure Headway (Hd)	7.337	6.115	6.918	7.497	7.367
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	492	592	520	478	487
Service Time	5.108	3.885	4.981	5.274	5.144
HCM Lane V/C Ratio	0.64	0.855	0.658	0.343	0.503
HCM Control Delay	22.5	35.4	22.4	14.2	17.4
HCM Lane LOS	C	E	C	B	C
HCM 95th-tile Q	4.5	9.5	4.7	1.5	2.8

Intersection	
Intersection Delay, s/veh	30.3
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	57	313	28	0	0	0	0	212	259	144	282	0
Future Vol, veh/h	57	313	28	0	0	0	0	212	259	144	282	0
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.87	0.87	0.87	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	364	33	0	0	0	0	244	298	150	294	0
Number of Lanes	0	2	0	0	0	0	0	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	16.6	53	16.8
HCM LOS	C	F	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	27%	0%	100%	0%
Vol Thru, %	45%	73%	85%	0%	100%
Vol Right, %	55%	0%	15%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	471	214	185	144	282
LT Vol	0	57	0	144	0
Through Vol	212	157	157	0	282
RT Vol	259	0	28	0	0
Lane Flow Rate	541	248	215	150	294
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.956	0.511	0.427	0.31	0.566
Departure Headway (Hd)	6.355	7.412	7.166	7.447	6.934
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	568	484	500	480	517
Service Time	4.43	5.197	4.952	5.243	4.73
HCM Lane V/C Ratio	0.952	0.512	0.43	0.313	0.569
HCM Control Delay	53	17.8	15.2	13.6	18.5
HCM Lane LOS	F	C	C	B	C
HCM 95th-tile Q	12.7	2.9	2.1	1.3	3.5

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	80	149	202	325	183	86
Future Vol, veh/h	80	149	202	325	183	86
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, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	83	83	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	93	173	243	392	235	110

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	878	0
Stage 1	-	-	0	-
Stage 2	-	-	878	-
Critical Hdwy	4.12	-	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.52	-
Follow-up Hdwy	2.218	-	4.018	3.318
Pot Cap-1 Maneuver	-	-	287	-
Stage 1	-	-	-	-
Stage 2	-	-	366	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	0	-
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	NB	SB
HCM Control Delay, s		
HCM LOS		-

Minor Lane/Major Mvmt	NBL	NBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	-
HCM Lane LOS	-	-	-
HCM 95th %tile Q(veh)	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	267	10	118	187	0	0	0	0	65	191	58
Future Volume (veh/h)	0	267	10	118	187	0	0	0	0	65	191	58
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	326	12	166	263	0				88	258	78
Peak Hour Factor	0.82	0.82	0.82	0.71	0.71	0.71				0.74	0.74	0.74
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	762	28	320	409	0				218	662	209
Arrive On Green	0.00	0.43	0.43	0.43	0.43	0.00				0.30	0.30	0.30
Sat Flow, veh/h	0	1792	66	387	961	0				716	2179	687
Grp Volume(v), veh/h	0	0	338	429	0	0				226	0	198
Grp Sat Flow(s),veh/h/ln	0	0	1858	1348	0	0				1835	0	1747
Q Serve(g_s), s	0.0	0.0	4.1	4.9	0.0	0.0				3.1	0.0	2.9
Cycle Q Clear(g_c), s	0.0	0.0	4.1	9.0	0.0	0.0				3.1	0.0	2.9
Prop In Lane	0.00		0.04	0.39		0.00				0.39		0.39
Lane Grp Cap(c), veh/h	0	0	791	729	0	0				558	0	531
V/C Ratio(X)	0.00	0.00	0.43	0.59	0.00	0.00				0.40	0.00	0.37
Avail Cap(c_a), veh/h	0	0	1561	1321	0	0				1101	0	1049
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	6.5	7.8	0.0	0.0				8.9	0.0	8.8
Incr Delay (d2), s/veh	0.0	0.0	0.4	0.8	0.0	0.0				0.5	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.1	1.8	0.0	0.0				0.9	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	6.9	8.6	0.0	0.0				9.4	0.0	9.2
LnGrp LOS	A	A	A	A	A	A				A	A	A
Approach Vol, veh/h		338			429						424	
Approach Delay, s/veh		6.9			8.6						9.3	
Approach LOS		A			A						A	

Timer - Assigned Phs		4		6		8
Phs Duration (G+Y+Rc), s		17.7		14.5		17.7
Change Period (Y+Rc), s		4.0		4.7		4.0
Max Green Setting (Gmax), s		27.0		19.3		27.0
Max Q Clear Time (g_c+I1), s		6.1		5.1		11.0
Green Ext Time (p_c), s		2.1		2.2		2.8

Intersection Summary	
HCM 6th Ctrl Delay	8.3
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	225	107	0	167	78	97	228	1	53	172	38
Future Volume (veh/h)	55	225	107	0	167	78	97	228	1	53	172	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	71	292	139	0	214	100	104	245	1	60	193	43
Peak Hour Factor	0.77	0.77	0.77	0.78	0.78	0.78	0.93	0.93	0.93	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	566	445	212	0	697	585	534	636	3	530	505	113
Arrive On Green	0.37	0.37	0.37	0.00	0.37	0.37	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1059	1193	568	0	1870	1568	1140	1861	8	1130	1479	330
Grp Volume(v), veh/h	71	0	431	0	214	100	104	0	246	60	0	236
Grp Sat Flow(s),veh/h/ln	1059	0	1761	0	1870	1568	1140	0	1869	1130	0	1809
Q Serve(g_s), s	1.4	0.0	5.7	0.0	2.3	1.2	2.1	0.0	2.8	1.2	0.0	2.8
Cycle Q Clear(g_c), s	3.7	0.0	5.7	0.0	2.3	1.2	4.9	0.0	2.8	4.0	0.0	2.8
Prop In Lane	1.00		0.32	0.00		1.00	1.00		0.00	1.00		0.18
Lane Grp Cap(c), veh/h	566	0	656	0	697	585	534	0	638	530	0	618
V/C Ratio(X)	0.13	0.00	0.66	0.00	0.31	0.17	0.19	0.00	0.39	0.11	0.00	0.38
Avail Cap(c_a), veh/h	966	0	1321	0	1403	1176	1204	0	1736	1194	0	1680
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.5	0.0	7.3	0.0	6.2	5.9	8.8	0.0	7.0	8.5	0.0	7.0
Incr Delay (d2), s/veh	0.1	0.0	1.1	0.0	0.2	0.1	0.2	0.0	0.4	0.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.5	0.0	0.6	0.3	0.4	0.0	0.8	0.2	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.6	0.0	8.4	0.0	6.5	6.0	9.0	0.0	7.4	8.6	0.0	7.4
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		502			314			350			296	
Approach Delay, s/veh		8.3			6.3			7.9			7.6	
Approach LOS		A			A			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	13.6	14.4	13.6	14.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	26.0	21.0	26.0	21.0
Max Q Clear Time (g_c+I1), s	6.9	7.7	6.0	4.3
Green Ext Time (p_c), s	1.8	2.7	1.6	1.4

Intersection Summary	
HCM 6th Ctrl Delay	7.6
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	32	210	166	4	11	95
Future Vol, veh/h	32	210	166	4	11	95
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	35	228	180	4	12	103

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	184	0	-	0	480	182
Stage 1	-	-	-	-	182	-
Stage 2	-	-	-	-	298	-
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	1391	-	-	-	545	861
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	753	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1391	-	-	-	529	861
Mov Cap-2 Maneuver	-	-	-	-	529	-
Stage 1	-	-	-	-	824	-
Stage 2	-	-	-	-	753	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1391	-	-	-	808
HCM Lane V/C Ratio	0.025	-	-	-	0.143
HCM Control Delay (s)	7.7	0	-	-	10.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	110	220	155	12	2	15
Future Vol, veh/h	110	220	155	12	2	15
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	120	239	168	13	2	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	181	0	-	0	654	175
Stage 1	-	-	-	-	175	-
Stage 2	-	-	-	-	479	-
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	1394	-	-	-	431	868
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	623	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1394	-	-	-	388	868
Mov Cap-2 Maneuver	-	-	-	-	388	-
Stage 1	-	-	-	-	770	-
Stage 2	-	-	-	-	623	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1394	-	-	-	758
HCM Lane V/C Ratio	0.086	-	-	-	0.024
HCM Control Delay (s)	7.8	0	-	-	9.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.3	-	-	-	0.1

1: Railroad Ave & Idaho Maryland Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.9	0.2	0.3
Total Del/Veh (s)	5.8	7.7	6.2	6.4

2: SR 20 EB Ramps & Idaho Maryland Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.3	0.0	1.9	1.0
Total Del/Veh (s)	9.7	6.7	7.8	7.9

3: Ophir St & E Bennett St Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.9	0.0	0.0	0.3
Total Del/Veh (s)	25.1	25.0	1.2	15.2

4: E Bennett Wy & Hansen Wy/SR 20 EB On-Ramp Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.8	21.3	8.5	13.4

5: E Bennett Wy & Tinloy St/SR 20 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.8	0.0	0.4	1.0
Total Del/Veh (s)	16.6	11.4	1.4	10.6

6: SR 174 & Ophir St Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.0	0.4	0.0	0.2
Total Del/Veh (s)	2.2	0.8	22.0	6.7

7: Hansen Wy & Neal St/SR 174 Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	1.4	0.2	0.6
Total Del/Veh (s)	1.6	31.2	9.6	16.2

8: Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	11.0	19.2	11.8	14.3

9: S Auburn St & Neal St Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.9	0.0	0.0	1.1	0.5
Total Del/Veh (s)	24.1	11.1	11.3	14.6	15.8

10: E Bennett St & Project Driveway 1 Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Del/Veh (s)	2.9	0.6	4.6	2.5

11: E Bennett St & Project Driveway 2 Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1
Total Del/Veh (s)	2.3	0.3	3.0	1.7

Total Zone Performance

Denied Del/Veh (s)	1.1
Total Del/Veh (s)	242.5

Intersection: 1: Railroad Ave & Idaho Maryland Rd

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	LT	T	LR
Maximum Queue (ft)	76	82	55	104	90
Average Queue (ft)	45	57	29	58	49
95th Queue (ft)	68	74	46	79	75
Link Distance (ft)	110	110		550	438
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			180		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: SR 20 EB Ramps & Idaho Maryland Rd

Movement	EB	WB	WB	NB	NB
Directions Served	TR	LT	T	L	R
Maximum Queue (ft)	157	56	79	118	174
Average Queue (ft)	73	38	44	61	77
95th Queue (ft)	120	55	67	95	124
Link Distance (ft)	664	110	110		738
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				360	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Ophir St & E Bennett St

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	312	362	58
Average Queue (ft)	135	102	11
95th Queue (ft)	256	224	39
Link Distance (ft)	308	2244	215
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	1		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: E Bennett Wy & Hansen Wy/SR 20 EB On-Ramp

Movement	EB	EB	NB	SB	SB
Directions Served	LT	TR	TR	L	T
Maximum Queue (ft)	73	74	294	80	119
Average Queue (ft)	38	49	131	45	58
95th Queue (ft)	63	72	244	74	95
Link Distance (ft)	833	833	527		201
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				40	
Storage Blk Time (%)				6	13
Queuing Penalty (veh)				19	19

Intersection: 5: E Bennett Wy & Tinloy St/SR 20 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	159	266	61	91	44
Average Queue (ft)	82	88	19	45	5
95th Queue (ft)	146	163	43	71	20
Link Distance (ft)		684		201	340
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	110		50		
Storage Blk Time (%)	7	3	1	4	
Queuing Penalty (veh)	20	9	4	2	

Intersection: 6: SR 174 & Ophir St

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	146	122	227
Average Queue (ft)	36	9	116
95th Queue (ft)	87	51	196
Link Distance (ft)	1006	210	215
Upstream Blk Time (%)			2
Queuing Penalty (veh)			8
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Hansen Wy & Neal St/SR 174

Movement	WB	NB	NB
Directions Served	TR	LT	TR
Maximum Queue (ft)	392	94	89
Average Queue (ft)	195	51	43
95th Queue (ft)	366	79	75
Link Distance (ft)	527	374	374
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	92	174	150	127
Average Queue (ft)	78	123	65	53
95th Queue (ft)	100	178	114	103
Link Distance (ft)	80	153	265	265
Upstream Blk Time (%)	8	5		
Queuing Penalty (veh)	28	23		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: S Auburn St & Neal St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	T	R	L	TR	L	TR
Maximum Queue (ft)	100	427	123	80	76	76	63	137
Average Queue (ft)	29	150	77	49	55	65	28	63
95th Queue (ft)	83	330	127	88	87	88	53	108
Link Distance (ft)		677	80		59	59		427
Upstream Blk Time (%)			7	0	9	18		
Queuing Penalty (veh)			24	0	21	41		
Storage Bay Dist (ft)	60			70			110	
Storage Blk Time (%)	1	31	11	0				1
Queuing Penalty (veh)	5	22	11	1				0

Intersection: 10: E Bennett St & Project Driveway 1

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	55	72
Average Queue (ft)	8	36
95th Queue (ft)	33	58
Link Distance (ft)	2244	1159
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: E Bennett St & Project Driveway 2

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	80	31
Average Queue (ft)	24	21
95th Queue (ft)	60	43
Link Distance (ft)	856	784
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 255

Intersection	
Intersection Delay, s/veh	18.9
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	374	72	23	635	93	30
Future Vol, veh/h	374	72	23	635	93	30
Peak Hour Factor	0.97	0.97	0.80	0.80	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	386	74	29	794	115	37
Number of Lanes	2	0	0	2	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	2
HCM Control Delay	12.5	23.8	11.9
HCM LOS	B	C	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	76%	0%	0%	10%	0%
Vol Thru, %	0%	100%	63%	90%	100%
Vol Right, %	24%	0%	37%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	123	249	197	235	423
LT Vol	93	0	0	23	0
Through Vol	0	249	125	212	423
RT Vol	30	0	72	0	0
Lane Flow Rate	152	257	203	293	529
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.273	0.433	0.327	0.463	0.828
Departure Headway (Hd)	6.477	6.058	5.798	5.681	5.632
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	554	594	620	634	646
Service Time	4.513	3.796	3.537	3.411	3.362
HCM Lane V/C Ratio	0.274	0.433	0.327	0.462	0.819
HCM Control Delay	11.9	13.4	11.3	13.2	29.7
HCM Lane LOS	B	B	B	B	D
HCM 95th-tile Q	1.1	2.2	1.4	2.4	8.8

Intersection	
Intersection Delay, s/veh	39.6
Intersection LOS	E

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	186	37	56	695	169	204
Future Vol, veh/h	186	37	56	695	169	204
Peak Hour Factor	0.76	0.76	0.78	0.78	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	245	49	72	891	186	224
Number of Lanes	1	0	0	2	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	17	57	15.1
HCM LOS	C	F	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	19%	0%
Vol Thru, %	0%	0%	83%	81%	100%
Vol Right, %	0%	100%	17%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	169	204	223	288	463
LT Vol	169	0	0	56	0
Through Vol	0	0	186	232	463
RT Vol	0	204	37	0	0
Lane Flow Rate	186	224	293	369	594
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.406	0.415	0.532	0.667	1.058
Departure Headway (Hd)	8.047	6.82	6.666	6.51	6.411
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	449	531	546	557	570
Service Time	5.747	4.52	4.666	4.241	4.141
HCM Lane V/C Ratio	0.414	0.422	0.537	0.662	1.042
HCM Control Delay	16.1	14.3	17	21.4	79.1
HCM Lane LOS	C	B	C	C	F
HCM 95th-tile Q	1.9	2	3.1	4.9	17.1

Intersection	
Intersection Delay, s/veh	19.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	60	282	21	0	0	0	0	171	171	171	358	0
Future Vol, veh/h	60	282	21	0	0	0	0	171	171	171	358	0
Peak Hour Factor	0.88	0.88	0.88	0.92	0.92	0.92	0.93	0.93	0.93	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	68	320	24	0	0	0	0	184	184	199	416	0
Number of Lanes	0	2	0	0	0	0	0	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	15.2	21	22.5
HCM LOS	C	C	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	30%	0%	100%	0%
Vol Thru, %	50%	70%	87%	0%	100%
Vol Right, %	50%	0%	13%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	342	201	162	171	358
LT Vol	0	60	0	171	0
Through Vol	171	141	141	0	358
RT Vol	171	0	21	0	0
Lane Flow Rate	368	228	184	199	416
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.656	0.463	0.361	0.387	0.751
Departure Headway (Hd)	6.418	7.297	7.052	7.008	6.499
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	563	491	508	511	554
Service Time	4.482	5.066	4.821	4.777	4.267
HCM Lane V/C Ratio	0.654	0.464	0.362	0.389	0.751
HCM Control Delay	21	16.3	13.8	14.2	26.4
HCM Lane LOS	C	C	B	B	D
HCM 95th-tile Q	4.8	2.4	1.6	1.8	6.5

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	84	124	126	164	245	109
Future Vol, veh/h	84	124	126	164	245	109
Conflicting Peds, #/hr	0	1	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	89	89	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	97	143	142	184	278	124

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	468	0
Stage 1	-	-	0	-
Stage 2	-	-	468	-
Critical Hdwy	4.12	-	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.52	-
Follow-up Hdwy	2.218	-	4.018	3.318
Pot Cap-1 Maneuver	-	-	493	-
Stage 1	-	-	-	-
Stage 2	-	-	561	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	0	-
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	NB	SB
HCM Control Delay, s		
HCM LOS		-

Minor Lane/Major Mvmt	NBL	NBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	-
HCM Lane LOS	-	-	-
HCM 95th %tile Q(veh)	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	269	1	127	159	0	0	0	0	49	208	104
Future Volume (veh/h)	0	269	1	127	159	0	0	0	0	49	208	104
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	306	1	143	179	0				60	257	128
Peak Hour Factor	0.88	0.88	0.88	0.89	0.89	0.89				0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	659	2	324	307	0				157	687	358
Arrive On Green	0.00	0.35	0.35	0.35	0.35	0.00				0.34	0.34	0.34
Sat Flow, veh/h	0	1863	6	400	867	0				461	2014	1051
Grp Volume(v), veh/h	0	0	307	322	0	0				241	0	204
Grp Sat Flow(s),veh/h/ln	0	0	1869	1267	0	0				1847	0	1679
Q Serve(g_s), s	0.0	0.0	3.6	3.1	0.0	0.0				2.8	0.0	2.6
Cycle Q Clear(g_c), s	0.0	0.0	3.6	6.8	0.0	0.0				2.8	0.0	2.6
Prop In Lane	0.00		0.00	0.44		0.00				0.25		0.63
Lane Grp Cap(c), veh/h	0	0	661	631	0	0				630	0	572
V/C Ratio(X)	0.00	0.00	0.46	0.51	0.00	0.00				0.38	0.00	0.36
Avail Cap(c_a), veh/h	0	0	1707	1417	0	0				1317	0	1197
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	7.1	8.0	0.0	0.0				7.1	0.0	7.0
Incr Delay (d2), s/veh	0.0	0.0	0.5	0.6	0.0	0.0				0.4	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.0	1.1	0.0	0.0				0.7	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	7.6	8.7	0.0	0.0				7.5	0.0	7.4
LnGrp LOS	A	A	A	A	A	A				A	A	A
Approach Vol, veh/h		307			322						445	
Approach Delay, s/veh		7.6			8.7						7.5	
Approach LOS		A			A						A	

Timer - Assigned Phs		4		6		8
Phs Duration (G+Y+Rc), s		14.1		14.4		14.1
Change Period (Y+Rc), s		4.0		4.7		4.0
Max Green Setting (Gmax), s		26.0		20.3		26.0
Max Q Clear Time (g_c+I1), s		5.6		4.8		8.8
Green Ext Time (p_c), s		1.8		2.4		2.1

Intersection Summary	
HCM 6th Ctrl Delay	7.9
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	225	158	0	189	71	110	256	5	50	218	84
Future Volume (veh/h)	59	225	158	0	189	71	110	256	5	50	218	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	1.00		0.95	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	247	174	0	208	78	126	294	6	68	299	115
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.87	0.87	0.87	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	502	357	252	0	664	533	435	757	15	532	528	203
Arrive On Green	0.36	0.36	0.36	0.00	0.36	0.36	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	1072	1006	709	0	1870	1501	969	1826	37	1074	1274	490
Grp Volume(v), veh/h	65	0	421	0	208	78	126	0	300	68	0	414
Grp Sat Flow(s),veh/h/ln	1072	0	1715	0	1870	1501	969	0	1863	1074	0	1764
Q Serve(g_s), s	1.6	0.0	7.3	0.0	2.8	1.2	4.0	0.0	3.9	1.6	0.0	6.2
Cycle Q Clear(g_c), s	4.4	0.0	7.3	0.0	2.8	1.2	10.2	0.0	3.9	5.5	0.0	6.2
Prop In Lane	1.00		0.41	0.00		1.00	1.00		0.02	1.00		0.28
Lane Grp Cap(c), veh/h	502	0	609	0	664	533	435	0	772	532	0	731
V/C Ratio(X)	0.13	0.00	0.69	0.00	0.31	0.15	0.29	0.00	0.39	0.13	0.00	0.57
Avail Cap(c_a), veh/h	769	0	1037	0	1131	908	758	0	1394	890	0	1320
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.7	0.0	9.6	0.0	8.1	7.6	11.7	0.0	7.1	9.0	0.0	7.8
Incr Delay (d2), s/veh	0.1	0.0	1.4	0.0	0.3	0.1	0.4	0.0	0.3	0.1	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.2	0.0	0.9	0.3	0.7	0.0	1.1	0.3	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.8	0.0	11.0	0.0	8.4	7.7	12.0	0.0	7.4	9.1	0.0	8.5
LnGrp LOS	A	A	B	A	A	A	B	A	A	A	A	A
Approach Vol, veh/h		486			286			426			482	
Approach Delay, s/veh		10.8			8.2			8.8			8.6	
Approach LOS		B			A			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	18.4	16.3	18.4	16.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	26.0	21.0	26.0	21.0
Max Q Clear Time (g_c+I1), s	12.2	9.3	8.2	4.8
Green Ext Time (p_c), s	2.1	2.5	2.9	1.3

Intersection Summary	
HCM 6th Ctrl Delay	9.2
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	106	156	232	12	7	62
Future Vol, veh/h	106	156	232	12	7	62
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	115	170	252	13	8	67

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	265	0	-	0	659	259
Stage 1	-	-	-	-	259	-
Stage 2	-	-	-	-	400	-
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	1299	-	-	-	429	780
Stage 1	-	-	-	-	784	-
Stage 2	-	-	-	-	677	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1299	-	-	-	387	780
Mov Cap-2 Maneuver	-	-	-	-	387	-
Stage 1	-	-	-	-	707	-
Stage 2	-	-	-	-	677	-

Approach	EB	WB	SB
HCM Control Delay, s	3.3	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1299	-	-	-	707
HCM Lane V/C Ratio	0.089	-	-	-	0.106
HCM Control Delay (s)	8	0	-	-	10.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.4

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	148	150	2	11	94
Future Vol, veh/h	15	148	150	2	11	94
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	16	161	163	2	12	102

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	165	0	-	0	357	164
Stage 1	-	-	-	-	164	-
Stage 2	-	-	-	-	193	-
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	1413	-	-	-	641	881
Stage 1	-	-	-	-	865	-
Stage 2	-	-	-	-	840	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1413	-	-	-	633	881
Mov Cap-2 Maneuver	-	-	-	-	633	-
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	840	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1413	-	-	-	846
HCM Lane V/C Ratio	0.012	-	-	-	0.135
HCM Control Delay (s)	7.6	0	-	-	9.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.5

1: Railroad Ave & Idaho Maryland Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	1.2	0.1	0.7
Total Del/Veh (s)	5.9	11.5	5.2	9.0

2: SR 20 EB Ramps & Idaho Maryland Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.3	0.0	1.9	0.6
Total Del/Veh (s)	8.6	8.5	5.5	7.7

3: Ophir St & E Bennett St Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.4	10.6	0.7	6.3

4: E Bennett Wy & Hansen Wy/SR 20 EB On-Ramp Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.1
Total Del/Veh (s)	9.8	8.5	10.9	9.9

5: E Bennett Wy & Tinloy St/SR 20 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.8	0.0	0.4	1.0
Total Del/Veh (s)	42.6	14.0	2.2	22.1

6: SR 174 & Ophir St Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.0	0.3	0.2	0.2
Total Del/Veh (s)	1.7	0.5	14.0	6.0

7: Hansen Wy & Neal St/SR 174 Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.1
Total Del/Veh (s)	1.6	9.7	9.0	6.3

8: Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.0	0.0
Total Del/Veh (s)	11.8	17.5	8.7	11.9

9: S Auburn St & Neal St Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	7.4	0.0	0.0	1.0	2.5
Total Del/Veh (s)	87.0	13.1	18.1	17.7	38.0

10: E Bennett St & Project Driveway 1 Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Del/Veh (s)	4.6	0.7	4.6	2.9

11: E Bennett St & Project Driveway 2 Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.2	0.1
Total Del/Veh (s)	1.2	0.3	3.9	1.4

Total Zone Performance

Denied Del/Veh (s)	1.6
Total Del/Veh (s)	499.6

Intersection: 1: Railroad Ave & Idaho Maryland Rd

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	LT	T	LR
Maximum Queue (ft)	56	110	142	223	78
Average Queue (ft)	37	48	48	103	42
95th Queue (ft)	53	75	99	179	66
Link Distance (ft)	110	110		550	438
Upstream Blk Time (%)		0			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)			180		
Storage Blk Time (%)				1	
Queuing Penalty (veh)				6	

Intersection: 2: SR 20 EB Ramps & Idaho Maryland Rd

Movement	EB	WB	WB	NB	NB
Directions Served	TR	LT	T	L	R
Maximum Queue (ft)	138	134	118	71	75
Average Queue (ft)	63	61	67	39	42
95th Queue (ft)	108	97	99	63	67
Link Distance (ft)	664	110	110		738
Upstream Blk Time (%)		0	0		
Queuing Penalty (veh)		1	2		
Storage Bay Dist (ft)				360	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Ophir St & E Bennett St

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	95	130	52
Average Queue (ft)	60	69	5
95th Queue (ft)	89	109	25
Link Distance (ft)	308	2244	215
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: E Bennett Wy & Hansen Wy/SR 20 EB On-Ramp

Movement	EB	EB	NB	SB	SB
Directions Served	LT	TR	TR	L	T
Maximum Queue (ft)	86	75	102	79	191
Average Queue (ft)	35	46	51	60	78
95th Queue (ft)	60	66	84	91	131
Link Distance (ft)	833	833	527		201
Upstream Blk Time (%)					0
Queuing Penalty (veh)					0
Storage Bay Dist (ft)				40	
Storage Blk Time (%)				9	26
Queuing Penalty (veh)				38	51

Intersection: 5: E Bennett Wy & Tinloy St/SR 20 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	160	692	84	155	50
Average Queue (ft)	115	245	28	50	9
95th Queue (ft)	191	531	66	99	29
Link Distance (ft)		684		201	340
Upstream Blk Time (%)		0			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)	110		50		
Storage Blk Time (%)	20	36	1	9	
Queuing Penalty (veh)	61	122	2	5	

Intersection: 6: SR 174 & Ophir St

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	68	53	217
Average Queue (ft)	19	4	102
95th Queue (ft)	50	25	185
Link Distance (ft)	1006	210	215
Upstream Blk Time (%)			0
Queuing Penalty (veh)			1
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Hansen Wy & Neal St/SR 174

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	TR
Maximum Queue (ft)	27	181	93	62
Average Queue (ft)	1	75	49	33
95th Queue (ft)	9	121	79	55
Link Distance (ft)	153	527	374	374
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	113	160	84	186
Average Queue (ft)	82	100	46	59
95th Queue (ft)	105	157	80	107
Link Distance (ft)	80	153	265	265
Upstream Blk Time (%)	13	1		
Queuing Penalty (veh)	41	3		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: S Auburn St & Neal St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	T	R	L	TR	L	TR
Maximum Queue (ft)	100	711	134	80	76	121	165	313
Average Queue (ft)	62	404	83	38	62	74	44	140
95th Queue (ft)	132	796	134	85	90	100	116	235
Link Distance (ft)		677	80		59	59		427
Upstream Blk Time (%)		16	8	0	30	27		
Queuing Penalty (veh)		0	25	0	67	61		
Storage Bay Dist (ft)	60			70			110	
Storage Blk Time (%)	1	61	13	0				14
Queuing Penalty (veh)	6	40	10	0				10

Intersection: 10: E Bennett St & Project Driveway 1

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	75	56
Average Queue (ft)	29	31
95th Queue (ft)	71	49
Link Distance (ft)	2244	1159
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: E Bennett St & Project Driveway 2

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	32	78
Average Queue (ft)	5	34
95th Queue (ft)	24	60
Link Distance (ft)	856	784
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 552

Appendix D – Cumulative (2035) No-Project Conditions Intersections Level of Service Worksheets

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	683	139	26	366	84	35
Future Volume (veh/h)	683	139	26	366	84	35
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	776	158	31	436	114	47
Peak Hour Factor	0.88	0.88	0.84	0.84	0.74	0.74
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1491	304	214	1647	169	70
Arrive On Green	0.51	0.51	0.51	0.51	0.14	0.14
Sat Flow, veh/h	3034	599	77	3332	1210	499
Grp Volume(v), veh/h	469	465	245	222	162	0
Grp Sat Flow(s),veh/h/ln	1777	1762	1707	1617	1720	0
Q Serve(g_s), s	4.1	4.1	0.0	1.8	2.1	0.0
Cycle Q Clear(g_c), s	4.1	4.1	1.7	1.8	2.1	0.0
Prop In Lane		0.34	0.13		0.70	0.29
Lane Grp Cap(c), veh/h	901	894	1040	820	240	0
V/C Ratio(X)	0.52	0.52	0.24	0.27	0.67	0.00
Avail Cap(c_a), veh/h	1707	1693	1709	1553	1445	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	3.8	3.8	3.2	3.3	9.5	0.0
Incr Delay (d2), s/veh	0.5	0.5	0.1	0.2	3.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.3	0.1	0.1	0.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.3	4.3	3.4	3.4	12.8	0.0
LnGrp LOS	A	A	A	A	B	A
Approach Vol, veh/h	934			467	162	
Approach Delay, s/veh	4.3			3.4	12.8	
Approach LOS	A			A	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	7.2	16.0	16.0
Change Period (Y+Rc), s	4.0	* 4.2	* 4.2
Max Green Setting (Gmax), s	19.5	* 22	* 22
Max Q Clear Time (g_c+I1), s	4.1	6.1	3.8
Green Ext Time (p_c), s	0.4	5.7	2.8

Intersection Summary	
HCM 6th Ctrl Delay	4.9
HCM 6th LOS	A

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	324	42	58	375	255	513
Future Volume (veh/h)	324	42	58	375	255	513
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	368	48	64	412	300	604
Peak Hour Factor	0.88	0.88	0.91	0.91	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	546	71	167	921	825	734
Arrive On Green	0.34	0.34	0.34	0.34	0.46	0.46
Sat Flow, veh/h	1621	211	167	2823	1781	1585
Grp Volume(v), veh/h	0	416	242	234	300	604
Grp Sat Flow(s),veh/h/ln	0	1832	1288	1617	1781	1585
Q Serve(g_s), s	0.0	8.0	0.6	4.6	4.5	13.5
Cycle Q Clear(g_c), s	0.0	8.0	8.6	4.6	4.5	13.5
Prop In Lane		0.12	0.26		1.00	1.00
Lane Grp Cap(c), veh/h	0	617	545	544	825	734
V/C Ratio(X)	0.00	0.67	0.44	0.43	0.36	0.82
Avail Cap(c_a), veh/h	0	1791	1507	1580	1819	1619
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	11.7	10.5	10.5	7.1	9.5
Incr Delay (d2), s/veh	0.0	1.3	0.6	0.5	0.3	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.7	1.4	1.4	1.1	3.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	12.9	11.1	11.1	7.4	11.9
LnGrp LOS	A	B	B	B	A	B
Approach Vol, veh/h	416			476	904	
Approach Delay, s/veh	12.9			11.1	10.4	
Approach LOS	B			B	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	23.0	18.0	18.0
Change Period (Y+Rc), s	4.0	* 4.2	* 4.2
Max Green Setting (Gmax), s	41.8	* 40	* 40
Max Q Clear Time (g_c+I1), s	15.5	10.0	10.6
Green Ext Time (p_c), s	3.4	2.8	3.2

Intersection Summary	
HCM 6th Ctrl Delay	11.2
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	348	4	0	0	0	0	210	302	166	250	0
Future Volume (veh/h)	76	348	4	0	0	0	0	210	302	166	250	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	88	405	5				0	241	347	173	260	0
Peak Hour Factor	0.86	0.86	0.86				0.87	0.87	0.87	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	148	722	9				0	374	539	434	1011	0
Arrive On Green	0.24	0.24	0.24				0.00	0.54	0.54	0.54	0.54	0.00
Sat Flow, veh/h	624	3040	39				0	692	997	827	1870	0
Grp Volume(v), veh/h	259	0	239				0	0	588	173	260	0
Grp Sat Flow(s),veh/h/ln	1839	0	1863				0	0	1689	827	1870	0
Q Serve(g_s), s	4.7	0.0	4.2				0.0	0.0	9.3	7.1	2.8	0.0
Cycle Q Clear(g_c), s	4.7	0.0	4.2				0.0	0.0	9.3	16.4	2.8	0.0
Prop In Lane	0.34		0.02				0.00		0.59	1.00		0.00
Lane Grp Cap(c), veh/h	437	0	443				0	0	913	434	1011	0
V/C Ratio(X)	0.59	0.00	0.54				0.00	0.00	0.64	0.40	0.26	0.00
Avail Cap(c_a), veh/h	893	0	905				0	0	1480	712	1638	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.8	0.0	12.6				0.0	0.0	6.1	11.9	4.6	0.0
Incr Delay (d2), s/veh	1.3	0.0	1.0				0.0	0.0	0.8	0.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	1.5				0.0	0.0	2.0	1.1	0.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.1	0.0	13.7				0.0	0.0	6.9	12.5	4.8	0.0
LnGrp LOS	B	A	B				A	A	A	B	A	A
Approach Vol, veh/h		498						588			433	
Approach Delay, s/veh		13.9						6.9			7.9	
Approach LOS		B						A			A	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	24.7	13.2	24.7
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2
Max Green Setting (Gmax), s	* 33	* 18	* 33
Max Q Clear Time (g_c+I1), s	11.3	6.7	18.4
Green Ext Time (p_c), s	4.3	2.3	2.3

Intersection Summary	
HCM 6th Ctrl Delay	9.5
HCM 6th LOS	A

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	151	220	173	12	270	0	0	264	107
Future Volume (veh/h)	0	0	0	151	220	173	12	270	0	0	264	107
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				178	259	204	14	307	0	0	322	130
Peak Hour Factor				0.85	0.85	0.85	0.88	0.88	0.88	0.82	0.82	0.82
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				309	462	385	388	683	0	0	462	187
Arrive On Green				0.33	0.33	0.33	0.37	0.37	0.00	0.00	0.37	0.37
Sat Flow, veh/h				931	1395	1160	938	1870	0	0	1266	511
Grp Volume(v), veh/h				349	0	292	14	307	0	0	0	452
Grp Sat Flow(s),veh/h/ln				1824	0	1662	938	1870	0	0	0	1777
Q Serve(g_s), s				4.6	0.0	4.1	0.4	3.6	0.0	0.0	0.0	6.3
Cycle Q Clear(g_c), s				4.6	0.0	4.1	6.7	3.6	0.0	0.0	0.0	6.3
Prop In Lane				0.51		0.70	1.00		0.00	0.00		0.29
Lane Grp Cap(c), veh/h				605	0	551	388	683	0	0	0	649
V/C Ratio(X)				0.58	0.00	0.53	0.04	0.45	0.00	0.00	0.00	0.70
Avail Cap(c_a), veh/h				1156	0	1053	782	1469	0	0	0	1396
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				8.0	0.0	7.9	10.7	7.0	0.0	0.0	0.0	7.8
Incr Delay (d2), s/veh				0.9	0.0	0.8	0.0	0.5	0.0	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
%ile BackOfQ(50%),veh/ln				1.1	0.0	0.9	0.1	0.9	0.0	0.0	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				8.9	0.0	8.7	10.7	7.5	0.0	0.0	0.0	9.2
LnGrp LOS				A	A	A	B	A	A	A	A	A
Approach Vol, veh/h					641			321			452	
Approach Delay, s/veh					8.8			7.6			9.2	
Approach LOS					A			A			A	

Timer - Assigned Phs	2		6		8			
Phs Duration (G+Y+Rc), s	14.8		14.8		14.2			
Change Period (Y+Rc), s	* 4.2		* 4.2		4.6			
Max Green Setting (Gmax), s	* 23		* 23		18.4			
Max Q Clear Time (g_c+I1), s	8.7		8.3		6.6			
Green Ext Time (p_c), s	1.6		2.5		3.1			

Intersection Summary	
HCM 6th Ctrl Delay	8.6
HCM 6th LOS	A

Notes

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

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	46	170	230	335	181	63
Future Vol, veh/h	46	170	230	335	181	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, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	83	83	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	53	198	277	404	232	81

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	958	0
Stage 1	-	-	0	-
Stage 2	-	-	958	-
Critical Hdwy	4.12	-	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.52	-
Follow-up Hdwy	2.218	-	4.018	3.318
Pot Cap-1 Maneuver	-	-	257	-
Stage 1	-	-	-	-
Stage 2	-	-	336	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	0	-
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	NB	SB
HCM Control Delay, s		
HCM LOS		-

Minor Lane/Major Mvmt	NBL	NBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	-
HCM Lane LOS	-	-	-
HCM 95th %tile Q(veh)	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	246	10	130	211	0	0	0	0	72	171	64
Future Volume (veh/h)	0	246	10	130	211	0	0	0	0	72	171	64
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	300	12	183	297	0				97	231	86
Peak Hour Factor	0.82	0.82	0.82	0.71	0.71	0.71				0.74	0.74	0.74
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	801	32	335	443	0				235	580	225
Arrive On Green	0.00	0.45	0.45	0.45	0.45	0.00				0.29	0.29	0.29
Sat Flow, veh/h	0	1786	71	416	989	0				805	1987	770
Grp Volume(v), veh/h	0	0	312	480	0	0				221	0	193
Grp Sat Flow(s),veh/h/ln	0	0	1857	1405	0	0				1830	0	1732
Q Serve(g_s), s	0.0	0.0	3.7	6.1	0.0	0.0				3.3	0.0	3.0
Cycle Q Clear(g_c), s	0.0	0.0	3.7	9.9	0.0	0.0				3.3	0.0	3.0
Prop In Lane	0.00		0.04	0.38		0.00				0.44		0.44
Lane Grp Cap(c), veh/h	0	0	833	778	0	0				535	0	506
V/C Ratio(X)	0.00	0.00	0.37	0.62	0.00	0.00				0.41	0.00	0.38
Avail Cap(c_a), veh/h	0	0	1552	1341	0	0				999	0	946
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	6.1	7.8	0.0	0.0				9.5	0.0	9.5
Incr Delay (d2), s/veh	0.0	0.0	0.3	0.8	0.0	0.0				0.5	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.0	2.0	0.0	0.0				1.0	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	6.4	8.6	0.0	0.0				10.1	0.0	9.9
LnGrp LOS	A	A	A	A	A	A				B	A	A
Approach Vol, veh/h		312			480						414	
Approach Delay, s/veh		6.4			8.6						10.0	
Approach LOS		A			A						A	

Timer - Assigned Phs		4		6		8
Phs Duration (G+Y+Rc), s		19.0		14.5		19.0
Change Period (Y+Rc), s		4.0		4.7		4.0
Max Green Setting (Gmax), s		28.0		18.3		28.0
Max Q Clear Time (g_c+I1), s		5.7		5.3		11.9
Green Ext Time (p_c), s		1.9		2.0		3.2

Intersection Summary		
HCM 6th Ctrl Delay	8.5	
HCM 6th LOS	A	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	237	122	0	176	89	110	259	1	60	196	43
Future Volume (veh/h)	63	237	122	0	176	89	110	259	1	60	196	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	82	308	158	0	226	114	118	278	1	67	220	48
Peak Hour Factor	0.77	0.77	0.77	0.78	0.78	0.78	0.93	0.93	0.93	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	559	450	231	0	725	608	495	634	2	491	506	110
Arrive On Green	0.39	0.39	0.39	0.00	0.39	0.39	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1034	1161	595	0	1870	1569	1108	1862	7	1097	1486	324
Grp Volume(v), veh/h	82	0	466	0	226	114	118	0	279	67	0	268
Grp Sat Flow(s),veh/h/ln	1034	0	1756	0	1870	1569	1108	0	1869	1097	0	1810
Q Serve(g_s), s	1.8	0.0	6.5	0.0	2.5	1.4	2.7	0.0	3.4	1.5	0.0	3.4
Cycle Q Clear(g_c), s	4.2	0.0	6.5	0.0	2.5	1.4	6.1	0.0	3.4	4.9	0.0	3.4
Prop In Lane	1.00		0.34	0.00		1.00	1.00		0.00	1.00		0.18
Lane Grp Cap(c), veh/h	559	0	680	0	725	608	495	0	636	491	0	616
V/C Ratio(X)	0.15	0.00	0.69	0.00	0.31	0.19	0.24	0.00	0.44	0.14	0.00	0.43
Avail Cap(c_a), veh/h	861	0	1194	0	1272	1067	1135	0	1716	1125	0	1662
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.8	0.0	7.5	0.0	6.3	5.9	9.9	0.0	7.5	9.4	0.0	7.5
Incr Delay (d2), s/veh	0.1	0.0	1.2	0.0	0.2	0.1	0.2	0.0	0.5	0.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.7	0.0	0.7	0.3	0.5	0.0	1.0	0.3	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.9	0.0	8.7	0.0	6.5	6.1	10.1	0.0	8.0	9.5	0.0	8.0
LnGrp LOS	A	A	A	A	A	A	B	A	A	A	A	A
Approach Vol, veh/h		548			340			397			335	
Approach Delay, s/veh		8.6			6.4			8.6			8.3	
Approach LOS		A			A			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	14.0	15.4	14.0	15.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	27.0	20.0	27.0	20.0
Max Q Clear Time (g_c+I1), s	8.1	8.5	6.9	4.5
Green Ext Time (p_c), s	2.1	2.8	1.9	1.5

Intersection Summary	
HCM 6th Ctrl Delay	8.1
HCM 6th LOS	A

1: Railroad Ave & Idaho Maryland Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	1.1	0.2	0.3
Total Del/Veh (s)	5.7	13.6	11.0	8.7

2: SR 20 EB Ramps & Idaho Maryland Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.4	0.0	1.9	1.0
Total Del/Veh (s)	19.9	13.4	12.7	14.5

3: Ophir St & E Bennett St Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.8	10.7	0.7	5.6

4: E Bennett Wy & Hansen Wy/SR 20 EB On-Ramp Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.0	0.1
Total Del/Veh (s)	13.7	10.0	11.4	11.7

5: E Bennett Wy & Tinloy St/SR 20 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.9	0.0	0.4	1.0
Total Del/Veh (s)	11.8	13.2	11.8	12.1

6: SR 174 & Ophir St Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.0	0.4	0.0	0.2
Total Del/Veh (s)	1.2	0.6	11.1	3.4

7: Hansen Wy & Neal St/SR 174 Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.2	0.1	0.1
Total Del/Veh (s)	1.2	13.3	8.6	7.7

8: Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	7.9	0.0	3.0
Total Del/Veh (s)	9.8	20.3	13.1	14.9

9: S Auburn St & Neal St Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.9	0.0	0.0	1.1	0.5
Total Del/Veh (s)	22.8	11.3	12.1	16.2	16.1

Total Zone Performance

Denied Del/Veh (s)	1.7
Total Del/Veh (s)	211.9

Intersection: 1: Railroad Ave & Idaho Maryland Rd

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	LT	T	LR
Maximum Queue (ft)	126	125	206	249	118
Average Queue (ft)	84	99	51	120	61
95th Queue (ft)	138	144	123	208	106
Link Distance (ft)	110	110		550	438
Upstream Blk Time (%)	2	5			
Queuing Penalty (veh)	10	26			
Storage Bay Dist (ft)			180		
Storage Blk Time (%)				2	
Queuing Penalty (veh)				5	

Intersection: 2: SR 20 EB Ramps & Idaho Maryland Rd

Movement	EB	WB	WB	NB	NB
Directions Served	TR	LT	T	L	R
Maximum Queue (ft)	295	121	138	228	339
Average Queue (ft)	148	87	95	110	128
95th Queue (ft)	252	134	149	192	243
Link Distance (ft)	664	110	110		738
Upstream Blk Time (%)		3	8		
Queuing Penalty (veh)		9	22		
Storage Bay Dist (ft)				360	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Ophir St & E Bennett St

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	156	98	30
Average Queue (ft)	83	54	1
95th Queue (ft)	138	85	10
Link Distance (ft)	308	2244	215
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: E Bennett Wy & Hansen Wy/SR 20 EB On-Ramp

Movement	EB	EB	NB	SB	SB
Directions Served	LT	TR	TR	L	T
Maximum Queue (ft)	125	152	200	79	215
Average Queue (ft)	68	63	116	58	93
95th Queue (ft)	110	104	184	90	184
Link Distance (ft)	833	833	527		201
Upstream Blk Time (%)					1
Queuing Penalty (veh)					4
Storage Bay Dist (ft)				40	
Storage Blk Time (%)				13	17
Queuing Penalty (veh)				35	29

Intersection: 5: E Bennett Wy & Tinloy St/SR 20 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	159	178	84	173	264
Average Queue (ft)	83	83	14	83	107
95th Queue (ft)	146	144	44	145	180
Link Distance (ft)		684		201	340
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	110		50		
Storage Blk Time (%)	3	2	0	15	
Queuing Penalty (veh)	9	6	1	2	

Intersection: 6: SR 174 & Ophir St

Movement	EB	SB
Directions Served	LR	TR
Maximum Queue (ft)	68	154
Average Queue (ft)	18	77
95th Queue (ft)	52	128
Link Distance (ft)	1006	215
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Hansen Wy & Neal St/SR 174

Movement	WB	NB	NB
Directions Served	TR	LT	TR
Maximum Queue (ft)	206	75	117
Average Queue (ft)	101	43	30
95th Queue (ft)	161	68	64
Link Distance (ft)	527	374	374
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	90	172	134	105
Average Queue (ft)	77	138	62	56
95th Queue (ft)	99	177	109	94
Link Distance (ft)	80	153	265	265
Upstream Blk Time (%)	10	8		
Queuing Penalty (veh)	36	25		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: S Auburn St & Neal St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	T	R	L	TR	L	TR
Maximum Queue (ft)	100	295	132	80	75	98	129	153
Average Queue (ft)	43	151	89	49	55	68	41	90
95th Queue (ft)	104	267	142	93	84	99	84	138
Link Distance (ft)		677	80		59	59		427
Upstream Blk Time (%)			11	1	9	20		
Queuing Penalty (veh)			41	0	20	46		
Storage Bay Dist (ft)	60			70			110	
Storage Blk Time (%)	3	33	14	1			0	3
Queuing Penalty (veh)	12	27	16	2			1	2

Zone Summary

Zone wide Queuing Penalty: 385

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	487	77	26	768	108	30
Future Volume (veh/h)	487	77	26	768	108	30
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	502	79	32	960	133	37
Peak Hour Factor	0.97	0.97	0.80	0.80	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1609	252	179	1772	190	53
Arrive On Green	0.52	0.52	0.52	0.52	0.14	0.14
Sat Flow, veh/h	3171	482	43	3475	1350	375
Grp Volume(v), veh/h	289	292	527	465	171	0
Grp Sat Flow(s),veh/h/ln	1777	1783	1816	1617	1735	0
Q Serve(g_s), s	2.3	2.3	0.0	4.7	2.3	0.0
Cycle Q Clear(g_c), s	2.3	2.3	4.6	4.7	2.3	0.0
Prop In Lane		0.27	0.06		0.78	0.22
Lane Grp Cap(c), veh/h	929	932	1106	845	244	0
V/C Ratio(X)	0.31	0.31	0.48	0.55	0.70	0.00
Avail Cap(c_a), veh/h	1662	1668	1824	1513	1353	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	3.3	3.3	3.9	3.9	10.0	0.0
Incr Delay (d2), s/veh	0.2	0.2	0.3	0.6	3.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.4	0.4	0.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.5	3.5	4.2	4.5	13.6	0.0
LnGrp LOS	A	A	A	A	B	A
Approach Vol, veh/h	581			992	171	
Approach Delay, s/veh	3.5			4.3	13.6	
Approach LOS	A			A	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	7.4	16.9	16.9
Change Period (Y+Rc), s	4.0	* 4.2	* 4.2
Max Green Setting (Gmax), s	19.0	* 23	* 23
Max Q Clear Time (g_c+I1), s	4.3	4.3	6.7
Green Ext Time (p_c), s	0.4	3.4	6.1

Intersection Summary	
HCM 6th Ctrl Delay	5.0
HCM 6th LOS	A

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	262	38	80	799	150	245
Future Volume (veh/h)	262	38	80	799	150	245
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	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	345	50	103	1024	165	269
Peak Hour Factor	0.76	0.76	0.78	0.78	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	860	125	222	1679	425	378
Arrive On Green	0.54	0.54	0.54	0.54	0.24	0.24
Sat Flow, veh/h	1592	231	200	3194	1781	1585
Grp Volume(v), veh/h	0	395	583	544	165	269
Grp Sat Flow(s),veh/h/ln	0	1823	1692	1617	1781	1585
Q Serve(g_s), s	0.0	4.7	2.2	8.6	2.9	5.8
Cycle Q Clear(g_c), s	0.0	4.7	8.2	8.6	2.9	5.8
Prop In Lane		0.13	0.18		1.00	1.00
Lane Grp Cap(c), veh/h	0	984	1028	873	425	378
V/C Ratio(X)	0.00	0.40	0.57	0.62	0.39	0.71
Avail Cap(c_a), veh/h	0	2007	1934	1780	1009	898
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	5.0	5.7	5.9	11.8	12.9
Incr Delay (d2), s/veh	0.0	0.3	0.5	0.7	0.6	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.0	1.7	1.7	0.9	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	5.3	6.2	6.6	12.4	15.4
LnGrp LOS	A	A	A	A	B	B
Approach Vol, veh/h	395			1127	434	
Approach Delay, s/veh	5.3			6.4	14.3	
Approach LOS	A			A	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	12.8	24.2	24.2
Change Period (Y+Rc), s	4.0	* 4.2	* 4.2
Max Green Setting (Gmax), s	21.0	* 41	* 41
Max Q Clear Time (g_c+I1), s	7.8	6.7	10.6
Green Ext Time (p_c), s	1.2	2.7	9.4

Intersection Summary	
HCM 6th Ctrl Delay	7.9
HCM 6th LOS	A

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	324	3	0	0	0	0	129	168	177	387	0
Future Volume (veh/h)	79	324	3	0	0	0	0	129	168	177	387	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	90	368	3				0	139	181	206	450	0
Peak Hour Factor	0.88	0.88	0.88				0.93	0.93	0.93	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	172	745	6				0	344	448	607	881	0
Arrive On Green	0.25	0.25	0.25				0.00	0.47	0.47	0.47	0.47	0.00
Sat Flow, veh/h	688	2988	25				0	731	951	1058	1870	0
Grp Volume(v), veh/h	240	0	221				0	0	320	206	450	0
Grp Sat Flow(s),veh/h/ln	1836	0	1866				0	0	1682	1058	1870	0
Q Serve(g_s), s	3.4	0.0	3.0				0.0	0.0	3.7	4.7	5.0	0.0
Cycle Q Clear(g_c), s	3.4	0.0	3.0				0.0	0.0	3.7	8.5	5.0	0.0
Prop In Lane	0.37		0.01				0.00		0.57	1.00		0.00
Lane Grp Cap(c), veh/h	458	0	465				0	0	793	607	881	0
V/C Ratio(X)	0.52	0.00	0.48				0.00	0.00	0.40	0.34	0.51	0.00
Avail Cap(c_a), veh/h	1148	0	1167				0	0	1555	1086	1729	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	9.7	0.0	9.6				0.0	0.0	5.2	8.0	5.5	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.8				0.0	0.0	0.3	0.3	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.9				0.0	0.0	0.7	0.7	1.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.7	0.0	10.4				0.0	0.0	5.5	8.3	6.0	0.0
LnGrp LOS	B	A	B				A	A	A	A	A	A
Approach Vol, veh/h		461						320			656	
Approach Delay, s/veh		10.5						5.5			6.7	
Approach LOS		B						A			A	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	18.4	11.7	18.4
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2
Max Green Setting (Gmax), s	* 28	* 19	* 28
Max Q Clear Time (g_c+I1), s	5.7	5.4	10.5
Green Ext Time (p_c), s	2.0	2.3	3.6

Intersection Summary	
HCM 6th Ctrl Delay	7.7
HCM 6th LOS	A

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	217	270	196	20	189	0	0	354	214
Future Volume (veh/h)	0	0	0	217	270	196	20	189	0	0	354	214
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				247	307	223	23	217	0	0	385	233
Peak Hour Factor				0.88	0.88	0.88	0.87	0.87	0.87	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				355	459	351	291	818	0	0	475	287
Arrive On Green				0.33	0.33	0.33	0.44	0.44	0.00	0.00	0.44	0.44
Sat Flow, veh/h				1065	1378	1053	805	1870	0	0	1085	657
Grp Volume(v), veh/h				422	0	355	23	217	0	0	0	618
Grp Sat Flow(s),veh/h/ln				1817	0	1679	805	1870	0	0	0	1742
Q Serve(g_s), s				7.7	0.0	6.9	1.0	2.8	0.0	0.0	0.0	11.9
Cycle Q Clear(g_c), s				7.7	0.0	6.9	12.9	2.8	0.0	0.0	0.0	11.9
Prop In Lane				0.59		0.63	1.00		0.00	0.00		0.38
Lane Grp Cap(c), veh/h				606	0	560	291	818	0	0	0	762
V/C Ratio(X)				0.70	0.00	0.64	0.08	0.27	0.00	0.00	0.00	0.81
Avail Cap(c_a), veh/h				851	0	787	425	1130	0	0	0	1052
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				11.1	0.0	10.8	15.0	6.9	0.0	0.0	0.0	9.4
Incr Delay (d2), s/veh				1.5	0.0	1.2	0.1	0.2	0.0	0.0	0.0	3.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.4	0.0	2.0	0.2	0.8	0.0	0.0	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				12.6	0.0	12.0	15.1	7.0	0.0	0.0	0.0	12.8
LnGrp LOS				B	A	B	B	A	A	A	A	B
Approach Vol, veh/h					777			240			618	
Approach Delay, s/veh					12.3			7.8			12.8	
Approach LOS					B			A			B	

Timer - Assigned Phs	2		6		8			
Phs Duration (G+Y+Rc), s	21.0		21.0		17.4			
Change Period (Y+Rc), s	* 4.2		* 4.2		4.6			
Max Green Setting (Gmax), s	* 23		* 23		18.0			
Max Q Clear Time (g_c+I1), s	14.9		13.9		9.7			
Green Ext Time (p_c), s	0.8		3.0		3.1			

Intersection Summary		
HCM 6th Ctrl Delay	11.9	
HCM 6th LOS	B	

Notes

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

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	57	141	143	156	239	74
Future Vol, veh/h	57	141	143	156	239	74
Conflicting Peds, #/hr	0	1	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	89	89	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	162	161	175	272	84

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	497	0
Stage 1	-	-	0	-
Stage 2	-	-	497	-
Critical Hdwy	4.12	-	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.52	-
Follow-up Hdwy	2.218	-	4.018	3.318
Pot Cap-1 Maneuver	-	-	475	-
Stage 1	-	-	-	-
Stage 2	-	-	545	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	0	-
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	NB	SB
HCM Control Delay, s		
HCM LOS		-

Minor Lane/Major Mvmt	NBL	NBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	-
HCM Lane LOS	-	-	-
HCM 95th %tile Q(veh)	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	286	1	121	166	0	0	0	0	39	262	150
Future Volume (veh/h)	0	286	1	121	166	0	0	0	0	39	262	150
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	325	1	136	187	0				48	323	185
Peak Hour Factor	0.88	0.88	0.88	0.89	0.89	0.89				0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	663	2	308	318	0				100	685	416
Arrive On Green	0.00	0.36	0.36	0.36	0.36	0.00				0.34	0.34	0.34
Sat Flow, veh/h	0	1864	6	367	894	0				292	1999	1214
Grp Volume(v), veh/h	0	0	326	323	0	0				305	0	251
Grp Sat Flow(s),veh/h/ln	0	0	1869	1261	0	0				1856	0	1650
Q Serve(g_s), s	0.0	0.0	3.9	3.0	0.0	0.0				3.7	0.0	3.4
Cycle Q Clear(g_c), s	0.0	0.0	3.9	6.9	0.0	0.0				3.7	0.0	3.4
Prop In Lane	0.00		0.00	0.42		0.00				0.16		0.74
Lane Grp Cap(c), veh/h	0	0	665	626	0	0				636	0	565
V/C Ratio(X)	0.00	0.00	0.49	0.52	0.00	0.00				0.48	0.00	0.44
Avail Cap(c_a), veh/h	0	0	1685	1395	0	0				1306	0	1161
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	7.2	8.1	0.0	0.0				7.5	0.0	7.4
Incr Delay (d2), s/veh	0.0	0.0	0.6	0.7	0.0	0.0				0.6	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.1	1.1	0.0	0.0				1.0	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	7.8	8.7	0.0	0.0				8.0	0.0	7.9
LnGrp LOS	A	A	A	A	A	A				A	A	A
Approach Vol, veh/h		326			323						556	
Approach Delay, s/veh		7.8			8.7						8.0	
Approach LOS		A			A						A	

Timer - Assigned Phs		4		6		8
Phs Duration (G+Y+Rc), s		14.3		14.6		14.3
Change Period (Y+Rc), s		4.0		4.7		4.0
Max Green Setting (Gmax), s		26.0		20.3		26.0
Max Q Clear Time (g_c+I1), s		5.9		5.7		8.9
Green Ext Time (p_c), s		2.0		3.0		2.1

Intersection Summary	
HCM 6th Ctrl Delay	8.1
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	240	180	0	196	81	125	291	6	57	248	96
Future Volume (veh/h)	67	240	180	0	196	81	125	291	6	57	248	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	1.00		0.95	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	74	264	198	0	215	89	144	334	7	78	340	132
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.87	0.87	0.87	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	463	347	260	0	664	533	404	819	17	513	570	221
Arrive On Green	0.35	0.35	0.35	0.00	0.35	0.35	0.45	0.45	0.45	0.45	0.45	0.45
Sat Flow, veh/h	1055	977	733	0	1870	1501	919	1825	38	1035	1271	493
Grp Volume(v), veh/h	74	0	462	0	215	89	144	0	341	78	0	472
Grp Sat Flow(s),veh/h/ln	1055	0	1710	0	1870	1501	919	0	1863	1035	0	1764
Q Serve(g_s), s	2.2	0.0	9.7	0.0	3.4	1.7	5.7	0.0	5.0	2.2	0.0	8.2
Cycle Q Clear(g_c), s	5.7	0.0	9.7	0.0	3.4	1.7	13.9	0.0	5.0	7.3	0.0	8.2
Prop In Lane	1.00		0.43	0.00		1.00	1.00		0.02	1.00		0.28
Lane Grp Cap(c), veh/h	463	0	607	0	664	533	404	0	836	513	0	792
V/C Ratio(X)	0.16	0.00	0.76	0.00	0.32	0.17	0.36	0.00	0.41	0.15	0.00	0.60
Avail Cap(c_a), veh/h	606	0	839	0	918	737	601	0	1235	735	0	1169
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.6	0.0	11.6	0.0	9.6	9.0	13.7	0.0	7.6	10.0	0.0	8.5
Incr Delay (d2), s/veh	0.2	0.0	2.7	0.0	0.3	0.1	0.5	0.0	0.3	0.1	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	3.4	0.0	1.2	0.5	1.1	0.0	1.6	0.4	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.8	0.0	14.3	0.0	9.9	9.2	14.2	0.0	7.9	10.2	0.0	9.2
LnGrp LOS	B	A	B	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		536			304			485			550	
Approach Delay, s/veh		14.0			9.7			9.8			9.3	
Approach LOS		B			A			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	22.3	18.5	22.3	18.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	27.0	20.0	27.0	20.0
Max Q Clear Time (g_c+I1), s	15.9	11.7	10.2	5.4
Green Ext Time (p_c), s	2.3	2.3	3.4	1.3

Intersection Summary	
HCM 6th Ctrl Delay	10.8
HCM 6th LOS	B

1: Railroad Ave & Idaho Maryland Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	1.6	0.2	0.9
Total Del/Veh (s)	7.5	16.9	13.0	13.2

2: SR 20 EB Ramps & Idaho Maryland Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.3	0.1	1.7	0.5
Total Del/Veh (s)	9.7	8.6	12.1	9.6

3: Ophir St & E Bennett St Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.4	10.9	0.5	5.8

4: E Bennett Wy & Hansen Wy/SR 20 EB On-Ramp Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.1
Total Del/Veh (s)	14.3	8.2	11.0	11.5

5: E Bennett Wy & Tinloy St/SR 20 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	2.0	0.0	0.6	1.2
Total Del/Veh (s)	15.7	17.1	18.0	16.8

6: SR 174 & Ophir St Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.0	0.1
Total Del/Veh (s)	1.4	0.4	9.8	4.1

7: Hansen Wy & Neal St/SR 174 Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.1
Total Del/Veh (s)	1.7	14.3	9.7	8.2

8: Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	1.6	0.0	0.4
Total Del/Veh (s)	11.1	21.8	10.9	13.8

9: S Auburn St & Neal St Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	4.7	0.0	0.6	1.0	1.7
Total Del/Veh (s)	71.2	12.2	16.1	19.8	31.8

Total Zone Performance

Denied Del/Veh (s)	1.6
Total Del/Veh (s)	454.4

Intersection: 1: Railroad Ave & Idaho Maryland Rd

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	LT	T	LR
Maximum Queue (ft)	118	121	254	372	136
Average Queue (ft)	68	75	134	207	56
95th Queue (ft)	122	127	256	327	100
Link Distance (ft)	110	110		550	438
Upstream Blk Time (%)	2	3			
Queuing Penalty (veh)	6	9			
Storage Bay Dist (ft)			180		
Storage Blk Time (%)			1	10	
Queuing Penalty (veh)			6	49	

Intersection: 2: SR 20 EB Ramps & Idaho Maryland Rd

Movement	EB	WB	WB	NB	NB
Directions Served	TR	LT	T	L	R
Maximum Queue (ft)	286	143	164	116	158
Average Queue (ft)	97	102	119	69	67
95th Queue (ft)	181	143	153	114	127
Link Distance (ft)	664	110	110		738
Upstream Blk Time (%)		6	13		
Queuing Penalty (veh)		30	70		
Storage Bay Dist (ft)				360	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Ophir St & E Bennett St

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	162	102	30
Average Queue (ft)	77	46	2
95th Queue (ft)	124	76	12
Link Distance (ft)	308	2244	215
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: E Bennett Wy & Hansen Wy/SR 20 EB On-Ramp

Movement	EB	EB	NB	SB	SB
Directions Served	LT	TR	TR	L	T
Maximum Queue (ft)	126	131	155	79	215
Average Queue (ft)	69	64	60	57	117
95th Queue (ft)	107	108	104	92	203
Link Distance (ft)	833	833	527		201
Upstream Blk Time (%)					1
Queuing Penalty (veh)					6
Storage Bay Dist (ft)				40	
Storage Blk Time (%)				17	18
Queuing Penalty (veh)				75	37

Intersection: 5: E Bennett Wy & Tinloy St/SR 20 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	160	310	84	175	355
Average Queue (ft)	105	132	19	72	198
95th Queue (ft)	171	235	53	129	339
Link Distance (ft)		684		201	340
Upstream Blk Time (%)					1
Queuing Penalty (veh)					0
Storage Bay Dist (ft)	110		50		
Storage Blk Time (%)	5	8	6	13	
Queuing Penalty (veh)	18	32	13	3	

Intersection: 6: SR 174 & Ophir St

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	50	32	146
Average Queue (ft)	12	1	79
95th Queue (ft)	35	10	119
Link Distance (ft)	1006	210	215
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Hansen Wy & Neal St/SR 174

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	TR
Maximum Queue (ft)	29	231	135	58
Average Queue (ft)	2	96	46	30
95th Queue (ft)	12	170	86	50
Link Distance (ft)	153	527	374	374
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	107	172	115	149
Average Queue (ft)	77	117	60	82
95th Queue (ft)	105	175	97	129
Link Distance (ft)	80	153	265	265
Upstream Blk Time (%)	9	4		
Queuing Penalty (veh)	32	12		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: S Auburn St & Neal St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	T	R	L	TR	L	TR
Maximum Queue (ft)	100	729	141	80	92	97	165	283
Average Queue (ft)	54	343	90	36	66	66	47	143
95th Queue (ft)	122	713	145	78	95	100	121	242
Link Distance (ft)		677	80		59	59		427
Upstream Blk Time (%)		12	12	0	32	17		
Queuing Penalty (veh)		0	44	0	73	39		
Storage Bay Dist (ft)	60			70			110	
Storage Blk Time (%)	4	60	17	0			1	19
Queuing Penalty (veh)	19	44	15	1			3	15

Zone Summary

Zone wide Queuing Penalty: 652

Appendix E – Cumulative Plus Project Conditions Intersections Level of Service Worksheets

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	689	139	26	374	84	35
Future Volume (veh/h)	689	139	26	374	84	35
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	783	158	31	445	114	47
Peak Hour Factor	0.88	0.88	0.84	0.84	0.74	0.74
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1499	302	212	1654	169	70
Arrive On Green	0.51	0.51	0.51	0.51	0.14	0.14
Sat Flow, veh/h	3039	594	76	3335	1210	499
Grp Volume(v), veh/h	472	469	250	226	162	0
Grp Sat Flow(s),veh/h/ln	1777	1763	1709	1617	1720	0
Q Serve(g_s), s	4.1	4.1	0.0	1.9	2.1	0.0
Cycle Q Clear(g_c), s	4.1	4.1	1.8	1.9	2.1	0.0
Prop In Lane		0.34	0.12		0.70	0.29
Lane Grp Cap(c), veh/h	904	897	1043	823	240	0
V/C Ratio(X)	0.52	0.52	0.24	0.27	0.68	0.00
Avail Cap(c_a), veh/h	1700	1687	1705	1547	1439	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	3.8	3.8	3.2	3.3	9.5	0.0
Incr Delay (d2), s/veh	0.5	0.5	0.1	0.2	3.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.3	0.1	0.1	0.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.3	4.3	3.4	3.4	12.8	0.0
LnGrp LOS	A	A	A	A	B	A
Approach Vol, veh/h	941			476	162	
Approach Delay, s/veh	4.3			3.4	12.8	
Approach LOS	A			A	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	7.2	16.1	16.1
Change Period (Y+Rc), s	4.0	* 4.2	* 4.2
Max Green Setting (Gmax), s	19.5	* 22	* 22
Max Q Clear Time (g_c+I1), s	4.1	6.1	3.9
Green Ext Time (p_c), s	0.4	5.7	2.9

Intersection Summary	
HCM 6th Ctrl Delay	4.9
HCM 6th LOS	A

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	324	42	58	383	255	519
Future Volume (veh/h)	324	42	58	383	255	519
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	368	48	64	421	300	611
Peak Hour Factor	0.88	0.88	0.91	0.91	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	545	71	164	922	830	739
Arrive On Green	0.34	0.34	0.34	0.34	0.47	0.47
Sat Flow, veh/h	1621	211	165	2824	1781	1585
Grp Volume(v), veh/h	0	416	247	238	300	611
Grp Sat Flow(s),veh/h/ln	0	1832	1287	1617	1781	1585
Q Serve(g_s), s	0.0	8.1	0.6	4.8	4.5	13.9
Cycle Q Clear(g_c), s	0.0	8.1	8.7	4.8	4.5	13.9
Prop In Lane		0.12	0.26		1.00	1.00
Lane Grp Cap(c), veh/h	0	617	542	544	830	739
V/C Ratio(X)	0.00	0.67	0.46	0.44	0.36	0.83
Avail Cap(c_a), veh/h	0	1764	1486	1556	1792	1594
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	11.8	10.7	10.7	7.1	9.6
Incr Delay (d2), s/veh	0.0	1.3	0.6	0.6	0.3	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.8	1.4	1.4	1.2	3.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	13.1	11.3	11.3	7.4	12.1
LnGrp LOS	A	B	B	B	A	B
Approach Vol, veh/h	416			485	911	
Approach Delay, s/veh	13.1			11.3	10.5	
Approach LOS	B			B	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	23.4	18.2	18.2
Change Period (Y+Rc), s	4.0	* 4.2	* 4.2
Max Green Setting (Gmax), s	41.8	* 40	* 40
Max Q Clear Time (g_c+I1), s	15.9	10.1	10.7
Green Ext Time (p_c), s	3.5	2.8	3.3

Intersection Summary	
HCM 6th Ctrl Delay	11.3
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	348	28	0	0	0	0	247	320	166	297	0
Future Volume (veh/h)	76	348	28	0	0	0	0	247	320	166	297	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	88	405	33				0	284	368	173	309	0
Peak Hour Factor	0.86	0.86	0.86				0.87	0.87	0.87	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	138	670	57				0	420	544	401	1063	0
Arrive On Green	0.24	0.24	0.24				0.00	0.57	0.57	0.57	0.57	0.00
Sat Flow, veh/h	587	2840	241				0	739	957	780	1870	0
Grp Volume(v), veh/h	276	0	250				0	0	652	173	309	0
Grp Sat Flow(s),veh/h/ln	1841	0	1827				0	0	1696	780	1870	0
Q Serve(g_s), s	5.8	0.0	5.2				0.0	0.0	11.6	8.6	3.7	0.0
Cycle Q Clear(g_c), s	5.8	0.0	5.2				0.0	0.0	11.6	20.1	3.7	0.0
Prop In Lane	0.32		0.13				0.00		0.56	1.00		0.00
Lane Grp Cap(c), veh/h	434	0	431				0	0	964	401	1063	0
V/C Ratio(X)	0.64	0.00	0.58				0.00	0.00	0.68	0.43	0.29	0.00
Avail Cap(c_a), veh/h	790	0	784				0	0	1313	562	1448	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	14.7	0.0	14.5				0.0	0.0	6.5	13.6	4.8	0.0
Incr Delay (d2), s/veh	1.6	0.0	1.2				0.0	0.0	0.8	0.7	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	1.9				0.0	0.0	2.6	1.3	0.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.3	0.0	15.7				0.0	0.0	7.3	14.3	4.9	0.0
LnGrp LOS	B	A	B				A	A	A	B	A	A
Approach Vol, veh/h		526						652			482	
Approach Delay, s/veh		16.0						7.3			8.3	
Approach LOS		B						A			A	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	28.6	14.3	28.6
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2
Max Green Setting (Gmax), s	* 33	* 18	* 33
Max Q Clear Time (g_c+I1), s	13.6	7.8	22.1
Green Ext Time (p_c), s	4.8	2.3	2.3

Intersection Summary	
HCM 6th Ctrl Delay	10.4
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	165	220	173	31	288	0	0	295	107
Future Volume (veh/h)	0	0	0	165	220	173	31	288	0	0	295	107
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				194	259	204	35	327	0	0	360	130
Peak Hour Factor				0.85	0.85	0.85	0.88	0.88	0.88	0.82	0.82	0.82
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				324	447	372	372	719	0	0	504	182
Arrive On Green				0.33	0.33	0.33	0.38	0.38	0.00	0.00	0.38	0.38
Sat Flow, veh/h				989	1365	1133	906	1870	0	0	1311	473
Grp Volume(v), veh/h				357	0	300	35	327	0	0	0	490
Grp Sat Flow(s),veh/h/ln				1821	0	1666	906	1870	0	0	0	1784
Q Serve(g_s), s				5.0	0.0	4.5	1.0	4.0	0.0	0.0	0.0	7.1
Cycle Q Clear(g_c), s				5.0	0.0	4.5	8.2	4.0	0.0	0.0	0.0	7.1
Prop In Lane				0.54		0.68	1.00		0.00	0.00		0.27
Lane Grp Cap(c), veh/h				597	0	546	372	719	0	0	0	686
V/C Ratio(X)				0.60	0.00	0.55	0.09	0.45	0.00	0.00	0.00	0.71
Avail Cap(c_a), veh/h				1072	0	981	711	1419	0	0	0	1354
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				8.6	0.0	8.4	11.5	7.0	0.0	0.0	0.0	8.0
Incr Delay (d2), s/veh				1.0	0.0	0.9	0.1	0.5	0.0	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
%ile BackOfQ(50%),veh/ln				1.3	0.0	1.1	0.2	1.0	0.0	0.0	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				9.6	0.0	9.3	11.6	7.5	0.0	0.0	0.0	9.4
LnGrp LOS				A	A	A	B	A	A	A	A	A
Approach Vol, veh/h					657			362			490	
Approach Delay, s/veh					9.4			7.9			9.4	
Approach LOS					A			A			A	

Timer - Assigned Phs	2		6		8			
Phs Duration (G+Y+Rc), s	16.0		16.0		14.6			
Change Period (Y+Rc), s	* 4.2		* 4.2		4.6			
Max Green Setting (Gmax), s	* 23		* 23		18.0			
Max Q Clear Time (g_c+I1), s	10.2		9.1		7.0			
Green Ext Time (p_c), s	1.7		2.8		3.1			

Intersection Summary	
HCM 6th Ctrl Delay	9.0
HCM 6th LOS	A

Notes

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

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	86	170	230	366	205	94
Future Vol, veh/h	86	170	230	366	205	94
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, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	83	83	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	100	198	277	441	263	121

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	995	0
Stage 1	-	-	0	-
Stage 2	-	-	995	-
Critical Hdwy	4.12	-	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.52	-
Follow-up Hdwy	2.218	-	4.018	3.318
Pot Cap-1 Maneuver	-	-	~ 245	-
Stage 1	-	-	-	-
Stage 2	-	-	323	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	0	-
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	NB	SB
HCM Control Delay, s		
HCM LOS		-

Minor Lane/Major Mvmt	NBL	NBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	-
HCM Lane LOS	-	-	-
HCM 95th %tile Q(veh)	-	-	-

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	263	10	149	223	0	0	0	0	72	190	64
Future Volume (veh/h)	0	263	10	149	223	0	0	0	0	72	190	64
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	321	12	210	314	0				97	257	86
Peak Hour Factor	0.82	0.82	0.82	0.71	0.71	0.71				0.74	0.74	0.74
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	880	33	355	452	0				205	564	197
Arrive On Green	0.00	0.49	0.49	0.49	0.49	0.00				0.27	0.27	0.27
Sat Flow, veh/h	0	1791	67	441	920	0				758	2086	728
Grp Volume(v), veh/h	0	0	333	524	0	0				234	0	206
Grp Sat Flow(s),veh/h/ln	0	0	1858	1361	0	0				1832	0	1739
Q Serve(g_s), s	0.0	0.0	4.1	8.0	0.0	0.0				3.9	0.0	3.6
Cycle Q Clear(g_c), s	0.0	0.0	4.1	12.1	0.0	0.0				3.9	0.0	3.6
Prop In Lane	0.00		0.04	0.40		0.00				0.41		0.42
Lane Grp Cap(c), veh/h	0	0	913	807	0	0				496	0	470
V/C Ratio(X)	0.00	0.00	0.36	0.65	0.00	0.00				0.47	0.00	0.44
Avail Cap(c_a), veh/h	0	0	1678	1391	0	0				917	0	871
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	5.8	7.8	0.0	0.0				11.2	0.0	11.0
Incr Delay (d2), s/veh	0.0	0.0	0.2	0.9	0.0	0.0				0.7	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.1	2.5	0.0	0.0				1.3	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	6.0	8.7	0.0	0.0				11.9	0.0	11.7
LnGrp LOS	A	A	A	A	A	A				B	A	B
Approach Vol, veh/h		333			524						440	
Approach Delay, s/veh		6.0			8.7						11.8	
Approach LOS		A			A						B	

Timer - Assigned Phs		4		6		8
Phs Duration (G+Y+Rc), s		22.0		14.6		22.0
Change Period (Y+Rc), s		4.0		4.7		4.0
Max Green Setting (Gmax), s		33.0		18.3		33.0
Max Q Clear Time (g_c+I1), s		6.1		5.9		14.1
Green Ext Time (p_c), s		2.2		2.1		3.9

Intersection Summary		
HCM 6th Ctrl Delay	9.1	
HCM 6th LOS	A	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	254	122	0	188	89	110	259	1	60	196	43
Future Volume (veh/h)	63	254	122	0	188	89	110	259	1	60	196	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	82	330	158	0	241	114	118	278	1	67	220	48
Peak Hour Factor	0.77	0.77	0.77	0.78	0.78	0.78	0.93	0.93	0.93	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	558	486	233	0	763	641	474	624	2	471	498	109
Arrive On Green	0.41	0.41	0.41	0.00	0.41	0.41	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1021	1191	570	0	1870	1570	1108	1862	7	1097	1486	324
Grp Volume(v), veh/h	82	0	488	0	241	114	118	0	279	67	0	268
Grp Sat Flow(s),veh/h/ln	1021	0	1761	0	1870	1570	1108	0	1869	1097	0	1810
Q Serve(g_s), s	1.8	0.0	7.1	0.0	2.7	1.4	2.9	0.0	3.6	1.6	0.0	3.6
Cycle Q Clear(g_c), s	4.6	0.0	7.1	0.0	2.7	1.4	6.5	0.0	3.6	5.2	0.0	3.6
Prop In Lane	1.00		0.32	0.00		1.00	1.00		0.00	1.00		0.18
Lane Grp Cap(c), veh/h	558	0	719	0	763	641	474	0	626	471	0	606
V/C Ratio(X)	0.15	0.00	0.68	0.00	0.32	0.18	0.25	0.00	0.45	0.14	0.00	0.44
Avail Cap(c_a), veh/h	994	0	1470	0	1561	1310	1028	0	1560	1018	0	1511
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.8	0.0	7.5	0.0	6.3	5.9	10.6	0.0	8.1	10.1	0.0	8.1
Incr Delay (d2), s/veh	0.1	0.0	1.1	0.0	0.2	0.1	0.3	0.0	0.5	0.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.9	0.0	0.7	0.3	0.6	0.0	1.1	0.3	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.9	0.0	8.7	0.0	6.5	6.0	10.9	0.0	8.6	10.3	0.0	8.6
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		570			355			397			335	
Approach Delay, s/veh		8.6			6.3			9.3			8.9	
Approach LOS		A			A			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	14.4	16.7	14.4	16.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	26.0	26.0	26.0	26.0
Max Q Clear Time (g_c+I1), s	8.5	9.1	7.2	4.7
Green Ext Time (p_c), s	2.1	3.5	1.8	1.8

Intersection Summary	
HCM 6th Ctrl Delay	8.3
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	32	224	187	4	11	95
Future Vol, veh/h	32	224	187	4	11	95
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	35	243	203	4	12	103

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	207	0	-	0	518	205
Stage 1	-	-	-	-	205	-
Stage 2	-	-	-	-	313	-
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	1364	-	-	-	518	836
Stage 1	-	-	-	-	829	-
Stage 2	-	-	-	-	741	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1364	-	-	-	502	836
Mov Cap-2 Maneuver	-	-	-	-	502	-
Stage 1	-	-	-	-	804	-
Stage 2	-	-	-	-	741	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1364	-	-	-	782
HCM Lane V/C Ratio	0.026	-	-	-	0.147
HCM Control Delay (s)	7.7	0	-	-	10.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	110	224	176	12	2	15
Future Vol, veh/h	110	224	176	12	2	15
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	120	243	191	13	2	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	204	0	-	0	681	198
Stage 1	-	-	-	-	198	-
Stage 2	-	-	-	-	483	-
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	1368	-	-	-	416	843
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	620	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1368	-	-	-	374	843
Mov Cap-2 Maneuver	-	-	-	-	374	-
Stage 1	-	-	-	-	751	-
Stage 2	-	-	-	-	620	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1368	-	-	-	735
HCM Lane V/C Ratio	0.087	-	-	-	0.025
HCM Control Delay (s)	7.9	0	-	-	10
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.1

1: Railroad Ave & Idaho Maryland Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	1.1	0.3	0.4
Total Del/Veh (s)	5.6	15.7	11.9	9.3

2: SR 20 EB Ramps & Idaho Maryland Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.3	0.0	2.0	1.0
Total Del/Veh (s)	16.4	13.5	11.7	13.3

3: Ophir St & E Bennett St Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	11.2	12.5	1.0	7.4

4: E Bennett Wy & Hansen Wy/SR 20 EB On-Ramp Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.0	0.1
Total Del/Veh (s)	16.2	12.8	11.4	13.4

5: E Bennett Wy & Tinloy St/SR 20 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.8	0.0	0.5	0.9
Total Del/Veh (s)	13.0	13.2	12.3	12.8

6: SR 174 & Ophir St Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.0	0.5	0.0	0.2
Total Del/Veh (s)	1.8	0.8	16.2	4.8

7: Hansen Wy & Neal St/SR 174 Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.2	0.1	0.1
Total Del/Veh (s)	1.2	20.1	8.6	10.3

8: Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	9.6	0.0	3.8
Total Del/Veh (s)	10.3	20.2	15.2	15.8

9: S Auburn St & Neal St Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	1.1	0.0	0.0	1.1	0.5
Total Del/Veh (s)	42.3	10.3	14.0	17.5	22.8

10: E Bennett St & Project Driveway 1 Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Del/Veh (s)	2.7	0.5	3.8	2.2

11: E Bennett St & Project Driveway 2 Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.1	0.1
Total Del/Veh (s)	2.3	0.3	3.3	1.6

Total Zone Performance

Denied Del/Veh (s)	1.8
Total Del/Veh (s)	243.2

Intersection: 1: Railroad Ave & Idaho Maryland Rd

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	LT	T	LR
Maximum Queue (ft)	137	126	205	200	162
Average Queue (ft)	72	98	60	104	63
95th Queue (ft)	130	140	137	173	111
Link Distance (ft)	110	110		550	438
Upstream Blk Time (%)	1	4			
Queuing Penalty (veh)	7	20			
Storage Bay Dist (ft)			180		
Storage Blk Time (%)			1	1	
Queuing Penalty (veh)			1	2	

Intersection: 2: SR 20 EB Ramps & Idaho Maryland Rd

Movement	EB	WB	WB	NB	NB
Directions Served	TR	LT	T	L	R
Maximum Queue (ft)	291	128	134	167	325
Average Queue (ft)	145	90	96	94	122
95th Queue (ft)	232	134	141	150	235
Link Distance (ft)	664	110	110		738
Upstream Blk Time (%)		3	8		
Queuing Penalty (veh)		7	21		
Storage Bay Dist (ft)				360	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Ophir St & E Bennett St

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	182	141	30
Average Queue (ft)	95	73	2
95th Queue (ft)	155	109	12
Link Distance (ft)	308	2244	215
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: E Bennett Wy & Hansen Wy/SR 20 EB On-Ramp

Movement	EB	EB	NB	SB	SB
Directions Served	LT	TR	TR	L	T
Maximum Queue (ft)	144	119	274	80	218
Average Queue (ft)	81	70	149	58	104
95th Queue (ft)	133	108	257	88	202
Link Distance (ft)	833	833	527		201
Upstream Blk Time (%)					1
Queuing Penalty (veh)					6
Storage Bay Dist (ft)				40	
Storage Blk Time (%)				19	17
Queuing Penalty (veh)				58	29

Intersection: 5: E Bennett Wy & Tinloy St/SR 20 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	158	201	84	215	255
Average Queue (ft)	81	91	23	91	113
95th Queue (ft)	135	148	59	158	200
Link Distance (ft)		684		201	340
Upstream Blk Time (%)				0	
Queuing Penalty (veh)				2	
Storage Bay Dist (ft)	110		50		
Storage Blk Time (%)	2	2	1	18	
Queuing Penalty (veh)	7	8	4	6	

Intersection: 6: SR 174 & Ophir St

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	151	120	221
Average Queue (ft)	25	7	96
95th Queue (ft)	75	46	160
Link Distance (ft)	1006	210	215
Upstream Blk Time (%)			0
Queuing Penalty (veh)			1
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Hansen Wy & Neal St/SR 174

Movement	WB	NB	NB
Directions Served	TR	LT	TR
Maximum Queue (ft)	324	116	63
Average Queue (ft)	123	46	37
95th Queue (ft)	238	88	61
Link Distance (ft)	527	374	374
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	105	174	184	142
Average Queue (ft)	78	146	80	62
95th Queue (ft)	104	177	135	110
Link Distance (ft)	80	153	265	265
Upstream Blk Time (%)	14	11		
Queuing Penalty (veh)	54	37		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: S Auburn St & Neal St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	T	R	L	TR	L	TR
Maximum Queue (ft)	99	620	140	80	76	94	105	144
Average Queue (ft)	49	262	88	51	60	70	35	79
95th Queue (ft)	116	535	141	99	91	92	71	126
Link Distance (ft)		677	80		59	59		427
Upstream Blk Time (%)			10	1	19	24		
Queuing Penalty (veh)			41	0	43	55		
Storage Bay Dist (ft)	60			70			110	
Storage Blk Time (%)	2	47	14	2			0	2
Queuing Penalty (veh)	10	38	16	4			0	1

Intersection: 10: E Bennett St & Project Driveway 1

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	52	73
Average Queue (ft)	6	38
95th Queue (ft)	28	61
Link Distance (ft)	2244	1159
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: E Bennett St & Project Driveway 2

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	75	22	31
Average Queue (ft)	27	1	14
95th Queue (ft)	66	7	38
Link Distance (ft)	856	909	784
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 480

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	496	77	26	774	108	30
Future Volume (veh/h)	496	77	26	774	108	30
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	511	79	32	968	133	37
Peak Hour Factor	0.97	0.97	0.80	0.80	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1619	249	178	1779	189	53
Arrive On Green	0.52	0.52	0.52	0.52	0.14	0.14
Sat Flow, veh/h	3180	475	43	3475	1350	375
Grp Volume(v), veh/h	293	297	531	469	171	0
Grp Sat Flow(s),veh/h/ln	1777	1784	1816	1617	1735	0
Q Serve(g_s), s	2.3	2.3	0.0	4.7	2.3	0.0
Cycle Q Clear(g_c), s	2.3	2.3	4.6	4.7	2.3	0.0
Prop In Lane		0.27	0.06		0.78	0.22
Lane Grp Cap(c), veh/h	932	936	1109	848	244	0
V/C Ratio(X)	0.31	0.32	0.48	0.55	0.70	0.00
Avail Cap(c_a), veh/h	1655	1661	1815	1506	1347	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	3.3	3.3	3.9	3.9	10.0	0.0
Incr Delay (d2), s/veh	0.2	0.2	0.3	0.6	3.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.4	0.4	0.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.5	3.5	4.2	4.5	13.7	0.0
LnGrp LOS	A	A	A	A	B	A
Approach Vol, veh/h	590			1000	171	
Approach Delay, s/veh	3.5			4.3	13.7	
Approach LOS	A			A	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	7.4	17.0	17.0
Change Period (Y+Rc), s	4.0	* 4.2	* 4.2
Max Green Setting (Gmax), s	19.0	* 23	* 23
Max Q Clear Time (g_c+I1), s	4.3	4.3	6.7
Green Ext Time (p_c), s	0.4	3.5	6.1

Intersection Summary	
HCM 6th Ctrl Delay	5.0
HCM 6th LOS	A

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	262	38	80	805	150	254
Future Volume (veh/h)	262	38	80	805	150	254
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	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	345	50	103	1032	165	279
Peak Hour Factor	0.76	0.76	0.78	0.78	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	858	124	220	1676	435	387
Arrive On Green	0.54	0.54	0.54	0.54	0.24	0.24
Sat Flow, veh/h	1592	231	200	3194	1781	1585
Grp Volume(v), veh/h	0	395	587	548	165	279
Grp Sat Flow(s),veh/h/ln	0	1823	1692	1617	1781	1585
Q Serve(g_s), s	0.0	4.8	2.4	8.9	2.9	6.1
Cycle Q Clear(g_c), s	0.0	4.8	8.5	8.9	2.9	6.1
Prop In Lane		0.13	0.18		1.00	1.00
Lane Grp Cap(c), veh/h	0	983	1024	871	435	387
V/C Ratio(X)	0.00	0.40	0.57	0.63	0.38	0.72
Avail Cap(c_a), veh/h	0	1969	1899	1746	990	881
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	5.1	5.9	6.1	11.9	13.1
Incr Delay (d2), s/veh	0.0	0.3	0.5	0.8	0.5	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.1	1.8	1.8	0.9	1.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	5.4	6.4	6.8	12.4	15.7
LnGrp LOS	A	A	A	A	B	B
Approach Vol, veh/h	395			1135	444	
Approach Delay, s/veh	5.4			6.6	14.5	
Approach LOS	A			A	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	13.2	24.6	24.6
Change Period (Y+Rc), s	4.0	* 4.2	* 4.2
Max Green Setting (Gmax), s	21.0	* 41	* 41
Max Q Clear Time (g_c+I1), s	8.1	6.8	10.9
Green Ext Time (p_c), s	1.2	2.7	9.4

Intersection Summary	
HCM 6th Ctrl Delay	8.1
HCM 6th LOS	A

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	324	23	0	0	0	0	181	194	177	427	0
Future Volume (veh/h)	79	324	23	0	0	0	0	181	194	177	427	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	90	368	26				0	195	209	206	497	0
Peak Hour Factor	0.88	0.88	0.88				0.93	0.93	0.93	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	161	695	51				0	412	442	555	942	0
Arrive On Green	0.25	0.25	0.25				0.00	0.50	0.50	0.50	0.50	0.00
Sat Flow, veh/h	652	2812	207				0	819	878	980	1870	0
Grp Volume(v), veh/h	254	0	230				0	0	404	206	497	0
Grp Sat Flow(s),veh/h/ln	1838	0	1833				0	0	1697	980	1870	0
Q Serve(g_s), s	4.1	0.0	3.6				0.0	0.0	5.2	5.8	6.1	0.0
Cycle Q Clear(g_c), s	4.1	0.0	3.6				0.0	0.0	5.2	11.1	6.1	0.0
Prop In Lane	0.35		0.11				0.00		0.52	1.00		0.00
Lane Grp Cap(c), veh/h	454	0	453				0	0	854	555	942	0
V/C Ratio(X)	0.56	0.00	0.51				0.00	0.00	0.47	0.37	0.53	0.00
Avail Cap(c_a), veh/h	1026	0	1024				0	0	1401	871	1544	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.1	0.0	10.9				0.0	0.0	5.4	9.1	5.7	0.0
Incr Delay (d2), s/veh	1.1	0.0	0.9				0.0	0.0	0.4	0.4	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	1.2				0.0	0.0	1.0	0.9	1.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.2	0.0	11.8				0.0	0.0	5.9	9.5	6.1	0.0
LnGrp LOS	B	A	B				A	A	A	A	A	A
Approach Vol, veh/h		484						404			703	
Approach Delay, s/veh		12.0						5.9			7.1	
Approach LOS		B						A			A	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	21.2	12.5	21.2
Change Period (Y+Rc), s	* 4.2	* 4.2	* 4.2
Max Green Setting (Gmax), s	* 28	* 19	* 28
Max Q Clear Time (g_c+I1), s	7.2	6.1	13.1
Green Ext Time (p_c), s	2.6	2.4	3.8

Intersection Summary	
HCM 6th Ctrl Delay	8.3
HCM 6th LOS	A

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	231	270	196	46	215	0	0	380	214
Future Volume (veh/h)	0	0	0	231	270	196	46	215	0	0	380	214
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				262	307	223	53	247	0	0	413	233
Peak Hour Factor				0.88	0.88	0.88	0.87	0.87	0.87	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				368	450	344	277	835	0	0	499	282
Arrive On Green				0.33	0.33	0.33	0.45	0.45	0.00	0.00	0.45	0.45
Sat Flow, veh/h				1108	1355	1034	785	1870	0	0	1117	630
Grp Volume(v), veh/h				429	0	363	53	247	0	0	0	646
Grp Sat Flow(s),veh/h/ln				1815	0	1682	785	1870	0	0	0	1747
Q Serve(g_s), s				8.2	0.0	7.3	2.5	3.4	0.0	0.0	0.0	12.9
Cycle Q Clear(g_c), s				8.2	0.0	7.3	15.5	3.4	0.0	0.0	0.0	12.9
Prop In Lane				0.61		0.61	1.00		0.00	0.00		0.36
Lane Grp Cap(c), veh/h				603	0	559	277	835	0	0	0	781
V/C Ratio(X)				0.71	0.00	0.65	0.19	0.30	0.00	0.00	0.00	0.83
Avail Cap(c_a), veh/h				820	0	760	383	1090	0	0	0	1018
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				11.6	0.0	11.3	16.5	7.0	0.0	0.0	0.0	9.7
Incr Delay (d2), s/veh				1.8	0.0	1.3	0.3	0.2	0.0	0.0	0.0	4.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.7	0.0	2.2	0.4	1.0	0.0	0.0	0.0	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				13.5	0.0	12.6	16.8	7.2	0.0	0.0	0.0	14.1
LnGrp LOS				B	A	B	B	A	A	A	A	B
Approach Vol, veh/h					792			300			646	
Approach Delay, s/veh					13.1			8.9			14.1	
Approach LOS					B			A			B	

Timer - Assigned Phs	2		6		8			
Phs Duration (G+Y+Rc), s	22.0		22.0		17.8			
Change Period (Y+Rc), s	* 4.2		* 4.2		4.6			
Max Green Setting (Gmax), s	* 23		* 23		18.0			
Max Q Clear Time (g_c+I1), s	17.5		14.9		10.2			
Green Ext Time (p_c), s	0.8		2.9		3.0			

Intersection Summary		
HCM 6th Ctrl Delay	12.7	
HCM 6th LOS	B	

Notes

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

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	91	141	143	183	274	118
Future Vol, veh/h	91	141	143	183	274	118
Conflicting Peds, #/hr	0	1	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	89	89	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	105	162	161	206	311	134

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	528	0
Stage 1	-	-	0	-
Stage 2	-	-	528	-
Critical Hdwy	4.12	-	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.52	-
Follow-up Hdwy	2.218	-	4.018	3.318
Pot Cap-1 Maneuver	-	-	456	-
Stage 1	-	-	-	-
Stage 2	-	-	528	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	0	-
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	NB	SB
HCM Control Delay, s		
HCM LOS		-

Minor Lane/Major Mvmt	NBL	NBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	-
HCM Lane LOS	-	-	-
HCM 95th %tile Q(veh)	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	300	1	148	183	0	0	0	0	39	288	150
Future Volume (veh/h)	0	300	1	148	183	0	0	0	0	39	288	150
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	341	1	166	206	0				48	356	185
Peak Hour Factor	0.88	0.88	0.88	0.89	0.89	0.89				0.81	0.81	0.81
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	747	2	331	338	0				88	667	368
Arrive On Green	0.00	0.40	0.40	0.40	0.40	0.00				0.32	0.32	0.32
Sat Flow, veh/h	0	1864	5	409	843	0				277	2089	1152
Grp Volume(v), veh/h	0	0	342	372	0	0				322	0	267
Grp Sat Flow(s),veh/h/ln	0	0	1869	1252	0	0				1857	0	1661
Q Serve(g_s), s	0.0	0.0	4.2	4.3	0.0	0.0				4.4	0.0	4.1
Cycle Q Clear(g_c), s	0.0	0.0	4.2	8.4	0.0	0.0				4.4	0.0	4.1
Prop In Lane	0.00		0.00	0.45		0.00				0.15		0.69
Lane Grp Cap(c), veh/h	0	0	750	669	0	0				593	0	531
V/C Ratio(X)	0.00	0.00	0.46	0.56	0.00	0.00				0.54	0.00	0.50
Avail Cap(c_a), veh/h	0	0	1622	1312	0	0				1152	0	1030
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	6.8	8.1	0.0	0.0				8.7	0.0	8.6
Incr Delay (d2), s/veh	0.0	0.0	0.4	0.7	0.0	0.0				0.8	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.1	1.6	0.0	0.0				1.3	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	7.3	8.8	0.0	0.0				9.5	0.0	9.3
LnGrp LOS	A	A	A	A	A	A				A	A	A
Approach Vol, veh/h		342			372						589	
Approach Delay, s/veh		7.3			8.8						9.4	
Approach LOS		A			A						A	

Timer - Assigned Phs		4		6		8
Phs Duration (G+Y+Rc), s		16.5		14.6		16.5
Change Period (Y+Rc), s		4.0		4.7		4.0
Max Green Setting (Gmax), s		27.0		19.3		27.0
Max Q Clear Time (g_c+I1), s		6.2		6.4		10.4
Green Ext Time (p_c), s		2.1		3.0		2.5

Intersection Summary	
HCM 6th Ctrl Delay	8.7
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	254	180	0	213	81	125	291	6	57	248	96
Future Volume (veh/h)	67	254	180	0	213	81	125	291	6	57	248	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	1.00		0.95	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	74	279	198	0	234	89	144	334	7	78	340	132
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.87	0.87	0.87	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	452	361	256	0	673	540	399	816	17	509	568	221
Arrive On Green	0.36	0.36	0.36	0.00	0.36	0.36	0.45	0.45	0.45	0.45	0.45	0.45
Sat Flow, veh/h	1038	1003	712	0	1870	1502	919	1825	38	1035	1271	493
Grp Volume(v), veh/h	74	0	477	0	234	89	144	0	341	78	0	472
Grp Sat Flow(s),veh/h/ln	1038	0	1715	0	1870	1502	919	0	1863	1035	0	1764
Q Serve(g_s), s	2.3	0.0	10.2	0.0	3.8	1.7	5.8	0.0	5.1	2.3	0.0	8.4
Cycle Q Clear(g_c), s	6.1	0.0	10.2	0.0	3.8	1.7	14.2	0.0	5.1	7.4	0.0	8.4
Prop In Lane	1.00		0.42	0.00		1.00	1.00		0.02	1.00		0.28
Lane Grp Cap(c), veh/h	452	0	616	0	673	540	399	0	833	509	0	789
V/C Ratio(X)	0.16	0.00	0.77	0.00	0.35	0.16	0.36	0.00	0.41	0.15	0.00	0.60
Avail Cap(c_a), veh/h	580	0	828	0	904	726	588	0	1215	721	0	1150
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.9	0.0	11.8	0.0	9.7	9.0	14.0	0.0	7.7	10.2	0.0	8.6
Incr Delay (d2), s/veh	0.2	0.0	3.2	0.0	0.3	0.1	0.5	0.0	0.3	0.1	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	3.7	0.0	1.3	0.5	1.1	0.0	1.6	0.5	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.1	0.0	15.0	0.0	10.0	9.2	14.5	0.0	8.1	10.4	0.0	9.4
LnGrp LOS	B	A	B	A	B	A	B	A	A	B	A	A
Approach Vol, veh/h		551			323			485			550	
Approach Delay, s/veh		14.6			9.8			10.0			9.5	
Approach LOS		B			A			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	22.5	18.9	22.5	18.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	27.0	20.0	27.0	20.0
Max Q Clear Time (g_c+I1), s	16.2	12.2	10.4	5.8
Green Ext Time (p_c), s	2.2	2.2	3.4	1.4

Intersection Summary	
HCM 6th Ctrl Delay	11.2
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	106	175	251	12	7	62
Future Vol, veh/h	106	175	251	12	7	62
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	115	190	273	13	8	67

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	286	0	-	0	700	280
Stage 1	-	-	-	-	280	-
Stage 2	-	-	-	-	420	-
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	1276	-	-	-	405	759
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	663	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1276	-	-	-	364	759
Mov Cap-2 Maneuver	-	-	-	-	364	-
Stage 1	-	-	-	-	690	-
Stage 2	-	-	-	-	663	-

Approach	EB	WB	SB
HCM Control Delay, s	3.1	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1276	-	-	-	684
HCM Lane V/C Ratio	0.09	-	-	-	0.11
HCM Control Delay (s)	8.1	0	-	-	10.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.4

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	167	169	2	11	94
Future Vol, veh/h	15	167	169	2	11	94
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	16	182	184	2	12	102

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	186	0	-	0	399	185
Stage 1	-	-	-	-	185	-
Stage 2	-	-	-	-	214	-
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	1388	-	-	-	607	857
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	822	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1388	-	-	-	599	857
Mov Cap-2 Maneuver	-	-	-	-	599	-
Stage 1	-	-	-	-	836	-
Stage 2	-	-	-	-	822	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1388	-	-	-	820
HCM Lane V/C Ratio	0.012	-	-	-	0.139
HCM Control Delay (s)	7.6	0	-	-	10.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.5

1: Railroad Ave & Idaho Maryland Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	1.7	0.2	0.9
Total Del/Veh (s)	6.6	21.5	13.3	15.5

2: SR 20 EB Ramps & Idaho Maryland Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.4	0.1	1.8	0.5
Total Del/Veh (s)	12.8	10.0	11.3	10.9

3: Ophir St & E Bennett St Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.4	14.7	0.7	8.8

4: E Bennett Wy & Hansen Wy/SR 20 EB On-Ramp Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.1
Total Del/Veh (s)	13.8	9.4	10.9	11.4

5: E Bennett Wy & Tinloy St/SR 20 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.9	0.1	0.7	1.2
Total Del/Veh (s)	15.4	21.2	20.2	18.1

6: SR 174 & Ophir St Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.0	0.3	0.6	0.4
Total Del/Veh (s)	1.8	0.6	18.8	8.4

7: Hansen Wy & Neal St/SR 174 Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.1
Total Del/Veh (s)	1.6	12.0	8.7	7.4

8: Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	1.1	0.0	0.3
Total Del/Veh (s)	14.1	21.5	12.0	15.3

9: S Auburn St & Neal St Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	1.2	0.0	0.2	1.1	0.7
Total Del/Veh (s)	87.8	12.1	17.2	21.2	35.5

10: E Bennett St & Project Driveway 1 Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Del/Veh (s)	4.1	0.6	4.6	2.6

11: E Bennett St & Project Driveway 2 Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.2	0.1
Total Del/Veh (s)	1.2	0.3	4.0	1.5

Total Zone Performance

Denied Del/Veh (s)	1.2
Total Del/Veh (s)	516.0

Intersection: 1: Railroad Ave & Idaho Maryland Rd

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	LT	T	LR
Maximum Queue (ft)	119	126	255	565	174
Average Queue (ft)	68	77	143	224	59
95th Queue (ft)	111	125	292	421	103
Link Distance (ft)	110	110		550	438
Upstream Blk Time (%)	1	2		1	
Queuing Penalty (veh)	2	6		0	
Storage Bay Dist (ft)			180		
Storage Blk Time (%)			4	18	
Queuing Penalty (veh)			17	95	

Intersection: 2: SR 20 EB Ramps & Idaho Maryland Rd

Movement	EB	WB	WB	NB	NB
Directions Served	TR	LT	T	L	R
Maximum Queue (ft)	378	147	157	135	114
Average Queue (ft)	132	109	120	68	50
95th Queue (ft)	278	148	157	117	86
Link Distance (ft)	664	110	110		738
Upstream Blk Time (%)		10	14		
Queuing Penalty (veh)		54	79		
Storage Bay Dist (ft)				360	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Ophir St & E Bennett St

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	167	247	30
Average Queue (ft)	99	86	3
95th Queue (ft)	147	162	16
Link Distance (ft)	308	2244	215
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: E Bennett Wy & Hansen Wy/SR 20 EB On-Ramp

Movement	EB	EB	NB	SB	SB
Directions Served	LT	TR	TR	L	T
Maximum Queue (ft)	105	134	178	79	212
Average Queue (ft)	62	64	80	59	128
95th Queue (ft)	93	105	150	97	217
Link Distance (ft)	833	833	527		201
Upstream Blk Time (%)					1
Queuing Penalty (veh)					5
Storage Bay Dist (ft)				40	
Storage Blk Time (%)				14	21
Queuing Penalty (veh)				70	43

Intersection: 5: E Bennett Wy & Tinloy St/SR 20 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	159	209	84	218	355
Average Queue (ft)	106	117	39	82	183
95th Queue (ft)	171	190	86	170	297
Link Distance (ft)		684		201	340
Upstream Blk Time (%)				1	2
Queuing Penalty (veh)				1	0
Storage Bay Dist (ft)	110		50		
Storage Blk Time (%)	5	7	14	13	
Queuing Penalty (veh)	19	31	34	7	

Intersection: 6: SR 174 & Ophir St

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	70	31	226
Average Queue (ft)	20	5	129
95th Queue (ft)	57	24	220
Link Distance (ft)	1006	210	215
Upstream Blk Time (%)			1
Queuing Penalty (veh)			5
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Hansen Wy & Neal St/SR 174

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	TR
Maximum Queue (ft)	49	203	94	68
Average Queue (ft)	3	95	45	29
95th Queue (ft)	20	166	78	49
Link Distance (ft)	153	527	374	374
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	91	173	113	144
Average Queue (ft)	82	119	61	78
95th Queue (ft)	99	179	104	131
Link Distance (ft)	80	153	265	265
Upstream Blk Time (%)	15	6		
Queuing Penalty (veh)	54	18		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: S Auburn St & Neal St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	T	R	L	TR	L	TR
Maximum Queue (ft)	100	692	134	80	76	96	165	442
Average Queue (ft)	67	382	93	52	58	75	45	176
95th Queue (ft)	136	689	141	93	91	90	127	362
Link Distance (ft)		677	80		59	59		427
Upstream Blk Time (%)		2	12	1	31	24		1
Queuing Penalty (veh)		0	46	0	71	55		0
Storage Bay Dist (ft)	60			70			110	
Storage Blk Time (%)	2	70	17	1			1	17
Queuing Penalty (veh)	8	52	15	2			6	13

Intersection: 10: E Bennett St & Project Driveway 1

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	55	67
Average Queue (ft)	25	33
95th Queue (ft)	58	59
Link Distance (ft)	2244	1159
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: E Bennett St & Project Driveway 2

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	77	55
Average Queue (ft)	5	36
95th Queue (ft)	30	55
Link Distance (ft)	856	784
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 809