TRAFFIC IMPACT ANALYSIS

FOR THE

IDAHO-MARYLAND MINE PROJECT

Nevada County, CA

Prepared For:

Rise Grass Valley Inc.
P.O. Box 271
Grass Valley, CA 95945

Prepared By:

KDAnderson & Associates, Inc.
3853 Taylor Road, Suite G
Loomis, California 95650
(916) 660-1555

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TABLE OF CONTENTS

I. INTRODUCTION 1
I.1. Study Purpose and Objectives 1
I.2. Project Description 2

II. VEHICLE MILES TRAVELED (VMT) ANALSYIS 7
II.1. VMT Description 7
II.2. VMT Methodology and Analysis Criteria 7
II.3. Project Vehicle Miles Traveled (VMT) 9
II.4. Findings / Results 14
II.5. Transportation Demand Management (TDM) Strategies 15

III. VEHICLE LEVEL OF SERVICE (LOS) STUDY 17
III.1. Study Area 17
III.2. Study Area Intersections 17
III.3. Study Area Roadway Segments 23
III.4. Analysis Criteria 24
III.5. Roadway Segment Level of Service Methodology 26
III.6. Level of Service Thresholds of Significance 28
III.7. Non-Automobile Transportation 30
III.8. Existing Traffic Operating Conditions 30

IV. EXISTING PLUS APPROVED PROJECTS [EPAP] 50

V. PROJECT CHARACTERISTICS 69
V.1. Trip Generation 69
V.2. Trip Distribution & Assignment 72

VI. PROJECT TRAFFIC IMPACTS 87
VI.1. EPAP Plus Project Conditions (Scenario #1) 87
VI.2. EPAP Plus Project Conditions (Scenario #2) 108

VII. CUMULATIVE IMPACTS (2035) 128
VII.1. Year 2035 Forecasts / Conditions 128
VII.2. Cumulative Plus Project Conditions (Scenario #1) 146
VII.3. Cumulative Plus Project Conditions (Scenario #2) 166

VIII. PAVEMENT CONDITION ANALYSIS 185
VIII.1. Project Truck Trip Generation 185
VIII.2. Pavement Condition Analysis 186
VIII.3. Data Collection 189

IX. TRUCK TURN ASSESSMENT 192
IX.1. Methods of Analysis 192
IX.2. Results 193

X. SIGHT DISTANCE 200

XI. ACCELERATION ON GRADE 206

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TABLE OF CONTENTS (continued)

XII. VEHICLE LEVEL OF SERVICE FINDINGS AND RECOMMENDATIONS 207
XII.1. Existing Conditions - Recommendations 207
XII.2. Existing Plus Approved Project Conditions - Recommendations 208
XII.3. Existing Plus Approved Projects Plus Project Conditions (Scenario #1 – Centennial Site) 209
XII.4. Existing Plus Approved Projects Plus Project Conditions (Scenario #2 – To SR 49) 211
XII.5. Cumulative (2035) Conditions No Project – Recommendations 212
XII.6. Cumulative (2035) Plus Project Conditions (Scenario #1 – Centennial Site) 213
XII.7. Cumulative (2035) Plus Project Conditions (Scenario #2 – To SR 49) 214

XIII. SUMMARY OF TRAFFIC IMPROVEMENT RECOMMENDATIONS 217

XIV. REFERENCES 220

XV. APPENDICES 222

TRAFFIC IMPACT ANALYSIS FOR THE
IDAHO-MARYLAND MINE PROJECT
Nevada County, CA

I. INTRODUCTION

I.1. Study Purpose and Objectives

This technical study has been prepared for Rise Grass Valley Inc. ("Rise Grass Valley" or "Rise") to evaluate the potential traffic impacts associated with the proposed Idaho-Maryland Mine Project located in Nevada County, CA.

This report was prepared:

- to provide information for the CEQA analysis;
- to comply with the Nevada County Code & General Plan;
- in accordance with the County of Nevada Traffic Impact Study Guidelines, last updated November 2013 (Pack, 2013); and
- following City of Grass Valley Traffic Study Guidelines for applicable roadways and intersections.

The 2018 CEQA Guidelines Update includes new and revised provisions for analyzing the significance of transportation impacts. Specifically, CEQA Guidelines section 15064.3 was adopted, effective December 28, 2018, and states that Vehicle Miles Travelled (VMT) for land use projects "exceeding an applicable threshold of significance may indicate a significant impact." (14 CCR § 15064.3, subd. (b)(1).). **This new metric took effect state-wide July 1, 2020.** As a result of this new section, the significance threshold for transportation impacts in both CEQA Guidelines section 15064 and Appendix G (Environmental Checklist Form) are described in terms of VMT rather than LOS.

- A project must still be evaluated individually and cumulatively to determine whether the project is consistent with the local agency's General Plan. The project was evaluated under an Existing plus Approved Projects condition, i.e., existing plus near term condition which included local projects previously approved by Nevada County and Grass Valley. Cumulatively, it was analyzed under future conditions which may include either a list of past, present and probably future projects producing related or cumulative impacts or a summary of projections contained in an adopted local, regional or statewide plan or related planning document. For this project the Nevada County Transportation Commission travel demand model was used as the basis to establish Cumulative No Project conditions.

The Level of Service (LOS) analysis was evaluated for General Plan consistency and to identify feasible improvements to meet the General Plan Vehicle LOS Standard. Vehicle LOS is used to identify potential improvement projects that may be included in conditions of approval for the project entitlements.

The scope of this traffic impact analysis has been identified through consultation with Nevada County and the City of Grass Valley. In addition to VMT analysis, this study addresses the following scenarios for LOS analysis:

1. Existing Setting
2. Existing Plus Approved Projects [EPAP] (5-year)
    A. Existing Plus Approved Projects [EPAP] Conditions
    B. EPAP plus Project Conditions to Centennial site
    C. EPAP plus Project Conditions to SR 49
3. Cumulative Impacts (2035)
    A. 2035 Traffic Conditions
    B. 2035 Plus Project Conditions to Centennial site
    C. 2035 Plus Project Conditions to SR 49

The objective of the Vehicle LOS study is to identify those street intersections and roadways that may be impacted by development of this project based on Nevada County and City of Grass Valley significance criteria and to suggest strategies for locations that are adversely affected by this project.

The VMT analysis incorporates Transportation Alternatives pursuant to Nevada County Land Use and Development Code Sec. L-II 4.1.9. The Vehicle LOS study also includes an evaluation of truck turning movements, sight distance at key locations, acceleration on grade, and the Traffic Index (TI) to assess pavement conditions.

I.2. Project Description

Rise Grass Valley proposes to reinitiate underground mining and gold mineralization processing of the Idaho-Maryland Mine (the "project") in unincorporated Nevada County (County). The proposed facilities and operations will be located on two properties owned by Rise referred to as the Brunswick Industrial Site and the Centennial Industrial Site. The project sites are shown on the vicinity map in Figure 1. The project comprises five primary elements:

1. dewatering the existing underground mine workings,
2. mining existing and new underground mine workings,
3. processing gold mineralization and rock,

4. placing engineered fill at the Brunswick and Centennial Industrial Sites, and
5. export of engineered fill from the Brunswick Industrial Site to support local construction projects.

Rise is seeking approval of a new use permit and reclamation plan to build and operate the facilities for these project elements. This use permit and reclamation plan proposes to allow:

- operation of pumps and a water treatment facility to dewater the underground workings;
- construction of a water pipeline to transport treated water to an outfall located in South Fork Wolf Creek;
- construction of the necessary aboveground facilities at the Brunswick Industrial Site (e.g., headframes and hoists, surface structures, a mineral processing plant) to support underground mining and mineral processing;
- construction of a new service shaft and ventilation shaft from the underground mine to surface at the Brunswick Industrial Site;
- underground mining, including drilling, blasting, and gold mineralization removal;
- gold mineralization and rock processing at the Brunswick Industrial Site and off-site transport of gold concentrate;
- transport of engineered fill from the Brunswick Industrial Site and placement at the Centennial Industrial Site;
- transport of engineered fill from the Brunswick Industrial Site to off-site construction projects;
- placement of engineered fill at the Brunswick Industrial Site; and
- construction of a potable water pipeline to supply residences along a portion of East Bennett Road.

The majority of aboveground facilities, the access to the underground mining, the treated-water outfall structure, and a portion of the engineered fill will be located on Rise's 119-acre Brunswick Industrial Site. Engineered fill will also be placed on Rise's 56-acre Centennial Industrial Site. In addition, Rise owns approximately 2,585 acres of subsurface rights that encompass the historic Idaho-Maryland Mine workings and Idaho-Maryland Mine Project. Once the aboveground facilities are constructed, Rise will begin dewatering the mine, performing advanced exploration, and mining the underground workings.

The project is projected to include year-round underground mining with a production target of 1,000 tons per day of gold ore extraction. Approximately 500 tons per day of sand tailings and 500 tons per day of barren rock from tunneling would be used as engineered fill material. Gold concentrate will be shipped off-site for refining.

Active mining operations will result in the highest off-site traffic volume due to full employment in this phase, material and supplies delivery for both Brunswick and Centennial sites and shipping of gold concentrate to an off-site refiner.

I.2.a. *Brunswick Industrial Site*

The proposed project will reactivate the Idaho-Maryland Mine at the Brunswick Industrial Site located at 12625 Brunswick Road, along the west side of Brunswick Road and south of E. Bennett Road. This site is mainly surrounded by rural-residential properties and to a lesser degree by light industrial zoned property. The vicinity map is presented in Figure 1 and the project sites are shown in Figure 2.

Primary access to the Brunswick site will be via the existing access location approximately ½ mile south of the Brunswick Road / E. Bennett Road – Greenhorn Road intersection. This driveway will provide full access for all vehicles other than semi-trailer and dump trucks used for transporting engineered fill. The Brunswick Road driveway will provide inbound access for these vehicles while the secondary access, located at Millsite Road / E. Bennett Road intersection, will provide for right-turn only outbound truck movements from the site.

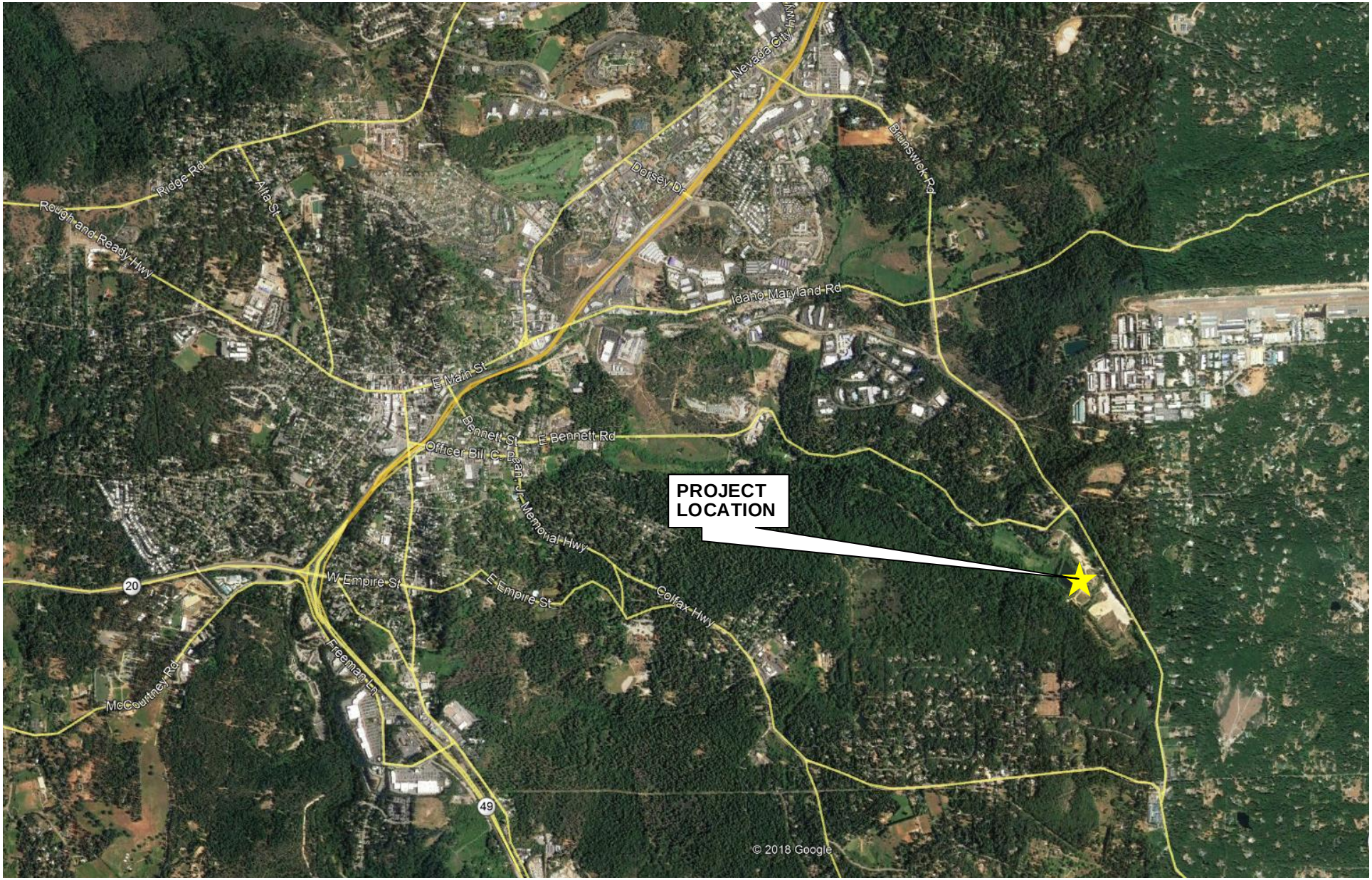
I.2.b. *Centennial Industrial Site*

Engineered fill will be transported by truck from the Brunswick Industrial Site and placed on the Centennial Industrial Site ("Centennial site"). It is projected that this will occur over a five-year time period within the 20-year analysis.

The Centennial site is located at 10350 Centennial Drive. The site is within Nevada County; however, the site will be accessed from a new driveway along Whispering Pines Lane in the City of Grass Valley. This site is surrounded by various properties consisting of a mixture of commercial / industrial and business park within the City of Grass Valley and light industrial uses within Nevada County. The vicinity map is presented in Figure 1 and the project sites are shown in Figure 2.

The engineered fill will be hauled to the Centennial Industrial site with proposed access along the west end of Whispering Pines Lane. A new driveway is proposed along Whispering Pines Lane approximately 180 feet east of the Centennial Drive intersection.

Figure 2 provides an aerial view of both Brunswick and Centennial sites relative to the surrounding area.

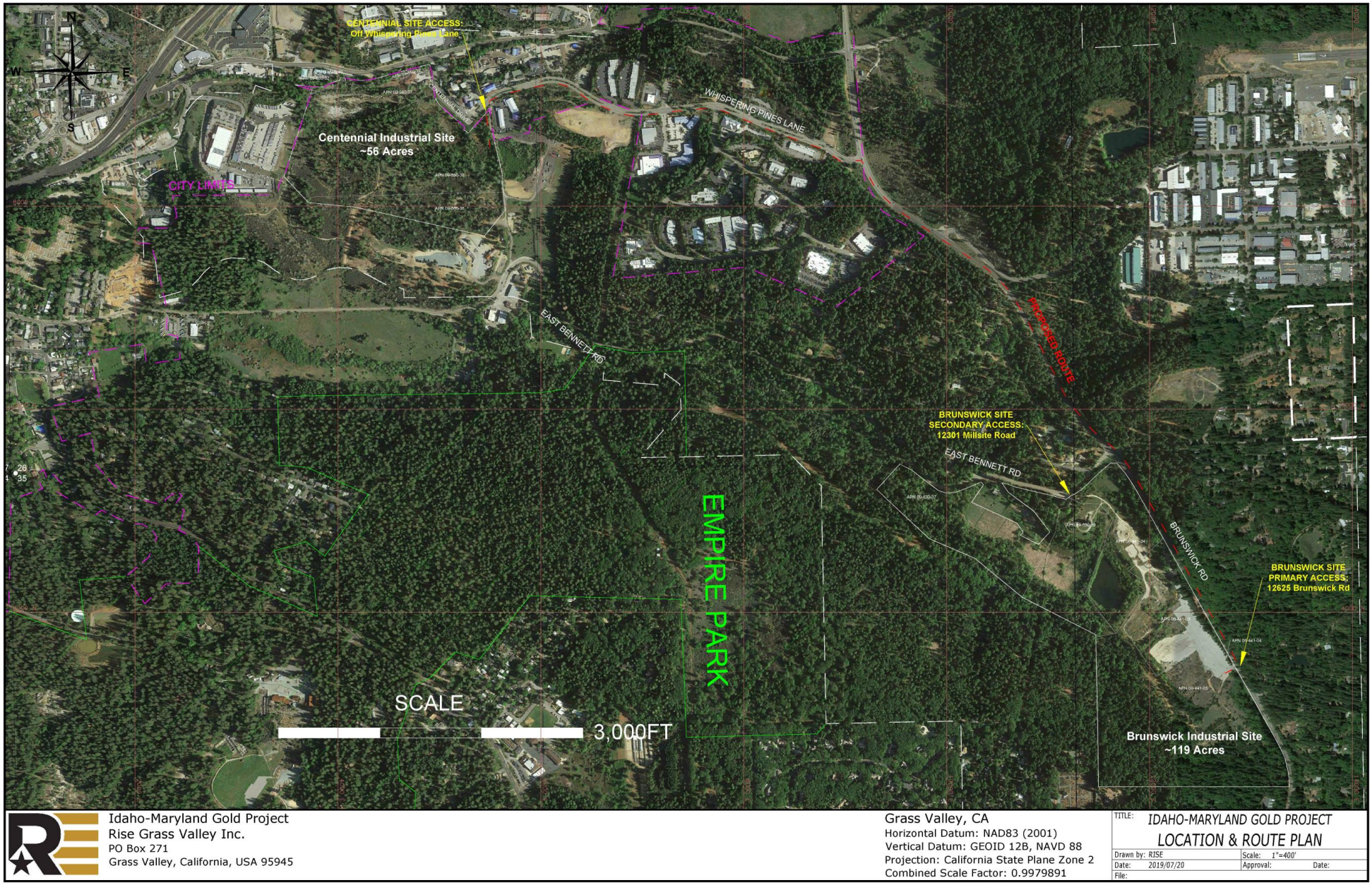


VICINITY MAP

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 1



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SITE PLAN

figure 2

II. VEHICLE MILES TRAVELED (VMT) ANALYSIS

II.1. VMT Description

As previously noted, the 2018 CEQA Guidelines Update includes new and revised provisions for analyzing the significance of transportation impacts using VMT in determining the significance of a project relative to the transportation system. The criterion considers the effect a project has on the vehicle miles traveled.

VMT is a metric that accounts for the number of vehicle trips generated and the length or distance of those trips (Fehr & Peers, 2019). The available measures of VMT for Nevada County include (Fehr & Peers, 2019):

- Total VMT – the sum of VMT for all vehicle trips and trip purposes.
- Residential VMT per capita – sum of VMT for trips originating from home, divided by the number of residents.
- VMT per worker – sum of VMT for trips from home to work, divided by the number of workers.

II.2. VMT Methodology and Analysis Criteria

Fehr & Peers prepared *Senate Bill 743, Vehicle Miles Traveled Implementation* for the Nevada County Transportation Commission (NCTC). NCTC, in turn distributed the document to the various agencies within the County so that each agency can develop their own significant threshold guidelines. Fehr & Peers recommends that VMT should be expressed as a generation rate and not a ratio. Since this project is an industrial land use project, it was determined that the preferred significance threshold metric was VMT per Worker (i.e., employee).

Methodologies and Threshold Recommendations were made by Fehr & Peers and are described below:

Thresholds of Significance Recommendation - A project's or plan's VMT impact may be considered less than significant if:

- The project or plan total weekday VMT per service population is less than or equal to the subarea mean under baseline conditions; and
- The project or plan is consistent with the jurisdiction's general plan and the Nevada County Regional Transportation Plan.

The subareas, based on similar travel characteristics and proximity, are recommended to be: City of Grass Valley, City of Nevada City, Town of Truckee, Alta Sierra, Lake of the Pines, Lake Wildwood and Penn Valley, the Remainder of Western Nevada County, and the Remainder of

Eastern Nevada County. The subarea threshold acknowledges the differences in VMT generation in different parts of Nevada County.

VMT Methodology for Land Use Projects and Land Use Plans

Table A-3, Home-Based VMT per Worker by Data Source, of the Fehr & Peers report presents results of the VMT measurement analysis from several data sources including the NCTC Travel Demand Model (TDM), the California State Travel Demand Model and MXD+, a trip generation tool developed by Fehr & Peers.

The NCTC TDM data, shown in Table 1, was used to determine the significance threshold for the Idaho-Maryland Mine Project. The Grass Valley subarea was used as the basis due to the project's proximity to the City.

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.

TABLE 1
HOME-BASED VMT PER WORKER

Location (SubArea)	NCTC TDM
Grass Valley	18.6
Nevada City	26.6
Truckee	N/A
Alta Sierra	27.8
Lake Wildwood	34.3
Penn Valley	18.6
Lake of the Pines	25.0
Unincorporated Nevada County	N/A

Source: Fehr & Peers, 2019 (Table A-3)

II.3. Project Vehicle Miles Traveled (VMT)

The Nevada County Transportation Commission travel demand model (TDM) for 2035 conditions was used to estimate the proposed project's daily VMT per service population for comparison to the NCTC baseline VMT per service population. Fehr & Peers was retained to conduct model runs to develop VMT projections for the Idaho-Maryland Mine Project (Fehr & Peers, 2020). Trip generation for the VMT analysis was based on the project building square footage and the trip generation rates contained in the TDM. An initial model run was performed to compare model trip generation to the project employee generation expected to occur. Fehr and Peers iteratively adjusted the input land use element of the model as it initially estimated higher volumes than the project is expected to generate. Project trips were then tracked throughout the model network using a select-zone analysis. Project VMT was calculated on each link by multiplying the link distance by the number of vehicles using a particular link. The methodology and results are described in the Fehr & Peers Memo in Appendix 1.

II.3.a. Heavy Truck Vehicle Miles Traveled

The VMT analysis did not include heavy trucks.

Rise intends to utilize heavy-trucks to transport engineered fill from the Brunswick site to offsite locations. The County is now preparing an Environmental Impact Report ("EIR") for the Project in compliance with the California Environmental Quality Act ("CEQA").

The new California Environmental Quality Act ("CEQA") requirement set forth in 14 CCR § 15064.3 to analyze traffic impacts in terms of vehicle miles traveled ("VMT") does not apply to the use of heavy trucks.

The intent of SB 743 and the associated CEQA Guidelines Section 15064.3 is to compel lead agencies to analyze VMT for passenger car and light truck trips related to land use projects. As noted by the Governor's Office of Planning and Research, the use of the term "automobiles" in the new regulation refers only to passenger cars and light trucks. Heavy trucks *can* be included in VMT analysis for convenience, but are not the subject of the new CEQA requirement. In this case, inclusion of heavy trucks would not be convenient and rather would make the EIR's traffic analysis confusing.

II.3.b. History of VMT Requirement

In 2013, the Legislature enacted Senate Bill 743 (Steinberg, 2013) ("SB 743"), which required the California Office of Planning and Research ("OPR") to establish criteria for determining the significance of transportation impacts of projects based on VMT. In 2018, the California Natural Resources Agency implemented the goals of SB 743 in issuing 14 CCR § 15064.3, which requires the use of a VMT metric to determine the significance of transportation impacts in place of the prior level of service ("LOS") metric.

The purpose of SB 743 and the associated VMT analysis requirement must be viewed in the context of the prior related climate-change statutes that led to this new traffic analysis methodology. As stated in Section 1 of SB 743, *"[w]ith the adoption of Chapter 728 of the Statutes of 2008, popularly known as the Sustainable Communities and Climate Protection Act of 2008 [known as SB 375], the Legislature signaled its commitment to encouraging land use and transportation planning decisions and investments that reduce vehicle miles traveled and contribute to the reductions in greenhouse gas emissions required in the California Global Warming Solutions Act of 2006 ...."* (Emphasis added.) As such, the text of SB 743 acknowledges that the implementation of VMT methodology stems from the goals set in SB 375, which in turn looks to AB 32 for the requirement to reduce emissions of GHG.

Section 1(b) of SB 375, enacted in 2008, states that "*[i]n 2006, the Legislature passed and the Governor signed Assembly Bill 32 (Chapter 488 of the Statutes of 2006; hereafter AB 32), which requires the State of California to reduce its greenhouse gas emissions to 1990 levels no later than 2020. According to the State Air Resources Board, in 1990 greenhouse gas emissions from automobiles and light trucks were 108 million metric tons, but by 2004 these emissions had increased to 135 million metric tons."*

Likewise, Section 1(c) of SB 375 states that *"[g]reenhouse gas emissions from automobiles and light trucks can be substantially reduced by new vehicle technology and by the increased use of low carbon fuel. However, even taking these measures into account, it will be necessary to achieve significant additional greenhouse gas reductions from changed land use patterns and improved transportation. Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32.*" As such, SB 375 was focused on reducing GHG emissions through changing land use patterns in a way that reduces automobile and light truck use, rather than by reducing use of heavy trucks for movement of goods. Nowhere in either SB 375 or SB 743 are heavy trucks mentioned because passenger cars/light trucks and land use patterns were the focus of these policies.

In December 2018, the Governor's Office of Planning and Research issued guidance ("OPR Guidance") on implementation of SB 743 and the related CEQA Guideline Section 14 CCR § 15064.3. The OPR Guidance clearly acknowledges the purpose of the VMT methodology is to reduce emission of GHG per the strategies set forth in SB 375: "*employing VMT as the metric of transportation impact statewide will help to ensure GHG reductions planned under SB 375 will be achieved through on-the-ground development, and will also play an important role in creating the additional GHG reductions needed beyond SB 375 across the State. Implementation of this change will rely, in part, on local land use decisions to reduce GHG emissions associated with the transportation sector, both at the project level, and in long-term plans (including general plans, climate action plans, specific plans, and transportation plans) and supporting sustainable community strategies developed under SB 375."* (OPR Guidance, p. 3.)

The new CEQA Guidelines Section 15064.3 does not specifically state what type of vehicles are to be include or excluded from the VMT analysis, and merely states "*[f]or the purposes of this section, 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project."* (14 CCR § 15064.3(a).) This requirement went into effect on July 1, 2020 and is therefore applicable to the Project. While the regulation itself is not crystal clear as to scope of the vehicles that should be included in a VMT analysis, the history of SB 375 and SB743 from which the regulation comes, dictate that the intent was to reduce passenger car and light truck trips through use of VMT traffic methodology and related mitigation requirements.

On the question of what types of vehicles are to be included in the VMT analysis, OPR stated in its 2018 Guidance that *"[p]roposed Section 15064.3, subdivision (a), states, "For the purposes of this section, 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project.' **Here, the term 'automobile' refers to on-road passenger vehicles, specifically cars and light trucks.** Heavy-duty truck VMT **could** be included for modeling convenience and ease of calculation (for example, where models or data provide combined auto and heavy truck VMT).*" (OPR Guidance, p. 4; Emphasis added.) Accordingly, OPR advises that the term "automobile" was not meant to include heavy trucks, but lead agencies **could** include heavy trucks where doing so was convenient under the applicable traffic model.

Additionally, the OPR Guidance addresses numerical transportation impact thresholds for a "land use project," but then only specifically describes residential, office, and retail projects, providing further evidence that movement of goods/materials in heavy trucks was meant to be excluded from the VMT requirement. (OPR Guidance, pp. 11-16.)

Based on the history of the VMT requirement traced through the text and intent of SB 375 and SB 743, and the State's guidance on implementation of this new requirement, it is clear that heavy truck trips are not required to be included in the VMT analysis, but **may** be included if convenient for modelling purposes.

II.3.c. *Examples of VMT Requirement Implementation in Other California Jurisdictions*

As examples of how other land use jurisdictions are approaching what vehicles to include in the new VMT traffic analysis, below are excerpts from new traffic impact analysis guidelines from the Cities of San Marcos, Clovis, San Diego, San Mateo, Irvine and Long Beach (collectively, the "Cities"):

San Marcos TIA Guidelines – 7.1.2020

2.1.3.3. Exclusion of Heavy Vehicle and Truck VMT

It shall be noted that SB 743 does not apply to goods movement (i.e. trucks). Section 15064.3 of the CEQA Guidelines states that VMT for transportation impacts refers to "... the amount and distance of automobile travel...". Therefore, the VMT associated with trucks and the movement of goods is not required to be analyzed and mitigated for the evaluation of transportation impacts under CEQA. VMT analysis and mitigation is limited to passenger vehicle and light truck trips. The VMT for all vehicles including heavy trucks related to a project will still be calculated as input for air quality, GHG, noise and energy impact analyses to be evaluated in non-transportation parts of the environmental analysis. In addition, heavy vehicle trips would still be assessed as part of the Local Transportation Analysis.

City of Long Beach – TIA Guidelines June, 2020

2.3 Project VMT Analysis

All land development projects that are not presumed to have a less than significant transportation impact related to CEQA Guidelines Section 15064.3, subdivision (b), according to the screening criteria provided above must conduct an analysis of the project's VMT. The VMT analysis will determine the appropriate VMT metric, identify the appropriate threshold of significance, calculate project VMT, identify the impact significance, and recommend appropriate mitigation. For the purposes of SB 743 and these guidelines, VMT to be analyzed is generated by on-road passenger vehicles, specifically cars and light-duty trucks. Heavy-duty trucks can be addressed in other CEQA sections (e.g., air quality, noise, GHG) and are subject to regulation in a separate collection of rules under CARB jurisdiction. While heavy-duty truck trips generated by Port or industrial activity are outside SB 743 regulation, all passenger vehicle trips generated by employees, including employees of the Port or industrial activities, are subject to VMT standards.

City of Clovis TIA Guidelines – 7.1.2020

12 2.1.3.3. Exclusion of Truck VMT

It shall be noted that SB 743 does not apply to goods movement (i.e. trucks). Section 15064.3 of the CEQA Guidelines states that VMT for transportation impacts refers to. "... the amount and distance of automobile travel...". Therefore the VMT associated with trucks and the movement of goods is not required to be analyzed and mitigated for the evaluation of transportation impacts under CEQA. Projects that generate a substantial amount of truck traffic also generate automobile trips, project-related automobile trips would be subject to VMT analysis and mitigation. The VMT for all vehicles including heavy trucks related to a project will still be calculated as input for air quality, GHG, noise and energy impact analyses to be evaluated in non-

transportation parts of the environmental analysis. The local transportation analysis requires an evaluation of truck traffic in terms of roadway and intersection operations, as discussed in Section 3.

City of San Diego TIA Guidelines – 3.20.2020

4.4.1 Recommendations Regarding Methodology

Vehicle Types

Vehicle Miles Traveled refers to on-road passenger vehicles, specifically cars and light trucks. Heavy-duty truck VMT could be included for modeling convenience and ease of calculation.

City of San Mateo TIA Guidelines – 7.16.2020

2.1.3.4. Exclusion of Truck VMT

It shall be noted that SB 743 does not apply to goods movement (i.e. trucks). Section 15064.3 of the CEQA Guidelines states that VMT for transportation impacts refers to. "… the amount and distance of automobile travel…". Therefore, the VMT associated with trucks and the movement of goods is not required to be analyzed and mitigated for the evaluation of transportation impacts under CEQA. Projects that generate a substantial amount of truck traffic also generate automobile trips, therefore project- related automobile trips would be subject to VMT analysis and mitigation. The VMT for all vehicles including heavy trucks related to a project will still be calculated as input for air quality, GHG, noise and energy impact analyses to be evaluated in non- transportation parts of the environmental analysis.

City of Irvine TIA Guidelines, SB743 Implementation VMT Technical Appendix – 5.12.2020

3.1 Screening Criteria

OPR Guidance Regarding Goods Movement: Section 3 of the Guidelines for Implementation of the California Environmental Quality Act specifies that VMT to be analyzed is defined as the amount and distance of automobile travel attributable to a project. SB 743 therefore does not require the inclusion of heavy-duty truck trips, utility vehicles or other types of vehicles in the VMT analysis. In the case of trucks, the State's strategy for the goods movement sector is not in VMT reduction, but in advances in technology (zero and near-zero emission control strategies).

City of Irvine Recommendation: VMT analysis will be performed for automobile trips only, which is consistent with State policy.

As demonstrated above, the approach taken by the Cities is consistent with the history of SB 375, SB 743 and the OPR Guidance on implementation of 14 CCR § 15064.3.

11.3.d. Analysis

As discussed above, the history of the VMT requirement can be traced back to SB 375 and ultimately back to AB 32 (the Global Warming Solutions Act of 2006) which aimed to fight global warming by establishing a program to reduce greenhouse gas emissions. In the subsequent sequence of California statues enacted to combat global warming/climate change, the VMT approach first appeared in SB 375, in 2008, as a means of reducing GHG emissions by encouraging developers to build homes closer to transportation hubs thereby reducing VMT for passenger cars and light trucks. SB 375 did not provide a strategy to reduce VMT for heavy trucks moving goods and materials, as heavy trucks were not the focus of that law. Likewise, SB 743, which seeks to implement many of the goals set forth in SB 375 did not include polices designed to reduce VMT for heavy trucks, and rather, was focused on passenger cars and light trucks.

While the regulation adopted to implement the VMT traffic analysis requirement could have been clearer as to the exclusion of heavy trucks from the required VMT analysis, OPR has provided clear guidance that heavy trucks were not intended to be considered "automobiles" for the purpose of CEQA VMT analysis. OPR advised that heavy trucks "could" be included for convenience in the context of traffic modelling or calculations, but the guidance is clear that this was not the intent of the regulation.

The inclusion of heavy trucks in the VMT analysis for the Project's EIR would be difficult, result in a confusing EIR, would deviate from the standard approach we observe trending among land use jurisdictions, and is plainly incorrect based on the history and intent of the VMT requirement.

II.4. Findings / Results

On a per worker basis, which is the recommended threshold of significance (Fehr & Peers, 2019), the Idaho-Maryland Mine Project is modelled to generate a daily rate per employee of 13.9 VMT under 2035 plus Project conditions. This is below the home-based VMT per worker for the Grass Valley area of 18.6 VMT per worker. Therefore, the project's impact on Vehicle Miles Travelled is less than significant.

II.5. Transportation Demand Management (TDM) Strategies

The Nevada County Land Use and Development Code, Section L-II 4.1.9, *Transportation Alternatives*, identifies that methods should be undertaken to reduce automobile dependence travel throughout the County. Land use applications requiring a development permit or a use permit shall address alternative transportation opportunities for employees, residents and/or customers served by the project. For projects that employ 50 or more persons, the applicant shall submit a detailed analysis of transportation alternatives, documenting feasible measures for reducing auto dependence.

The project is anticipated to employ approximately 312 direct employees during full operations. Project trip generation is described in Section V.1. of this report.

The project is not currently served by transit and the Nevada County Transit Services Division has no plans to bring service to this area. Currently, the nearest bus route to the Brunswick site is Route #3, the Grass Valley Loma Rica Loop route which operates between the Tinloy Street / Bank Street Transit Center and the Nevada County Airport.

An area for bicycle racks is incorporated into the site design at the Brunswick Industrial Site and will have a minimum of 11 racks (44 bicycle spaces).

As noted in the Findings section the project's impact on VMT is less than significant; however, the County also recognizes that projects requiring a development permit or use permit address alternative transportation opportunities for those served by the project. Below are transportation reduction alternatives based on the TDM strategies categorized in Appendix D, TDM Strategy Evaluation, of the *SB 743 Vehicle Miles Traveled Implementation [Draft]* report (Fehr & Peers, 2019).

Commute Trip Reduction, #3.4.11, TRT-11: Provide Employer-Sponsored Vanpool / Shuttle

This strategy would make available a company sponsored vanpool / shuttle to allow employees to commute in a single vehicle. Since employees are likely to be coming from throughout the area the use of specific locations for pick up, such as existing 'Park and Ride' lots in the County, would facilitate the reduction of commute vehicles. CAPCOA projects a 0.3% - 13.4% VMT commute reduction with this strategy.

The project could also institute a shuttle service between the project site(s) and the Tinloy Street / Bank Street Transit Center to provide a convenient location for employees to transfer from public transit or to be dropped off (i.e. kiss and ride). A shuttle could operate several times each day, during the 7:00 a.m. and 7:00 p.m. shift changes and at the end of the administrative workday, after 3:30 p.m.

Commute Trip Reduction, #3.4.3, TRT-3: Provide Ride-Sharing Programs

This strategy involves the employer providing ride share coordination and parking facilities to provide information for employees to ride share to and from work. The strategy is intended to match employees by location resulting in a reduction of commute vehicles. CAPCOA projects a 1% - 15% VMT commute reduction with this strategy.

Rideshare activities would provide incentives for employees commuting to and from the site. Ridesharing could be coordinated between employees along a similar route from their residence to the work site. The use of existing Park and Ride lots may provide a location for employees to meet and commute together, reducing the number of vehicles in the roadway network. There are three Caltrans Park and Ride locations in Nevada County, two in Penn Valley and one in Grass Valley; all are located along SR 20. There is also a Park and Ride location in Auburn for employees commuting along SR 49 from Placer County. Incentives may include the use of high occupancy vehicle (HOV) lanes, less maintenance on a single vehicle due to reduced use, and cost sharing between employees / employer.

III. VEHICLE LEVEL OF SERVICE (LOS) STUDY

III.1. Study Area

This study also addresses traffic conditions at 24 existing intersections and 11 roadway segments shown in Figure 3. The limits of the study area were reviewed and approved by Nevada County and City of Grass Valley staff. In addition to level of service analyses, a traffic index assessment was completed considering the haul routes of engineered fill along County and City roads and an AutoTURN assessment was completed considering the turning movements of haul trucks along the proposed routes. Specifically, truck movements were evaluated at the Brunswick and Centennial access locations, East Bennett Road at Brunswick Road and Brunswick Road at Whispering Pines Lane.

The text that follows describes the roadway facilities included in this analysis; intersections associated with SR 49 / SR 20 are referred to throughout this analysis as SR 49. The entirety of SR 49 proceeds in a northbound / southbound direction and is identified as such.

The quality of traffic flow is typically governed by the operation of major intersections and the daily volume of traffic along the roadways. The physical characteristics of the study intersections and roadways are described in the text which follows.

III.2. Study Area Intersections

1. The **Tinloy Street / Neal Street** intersection is a signal-controlled intersection providing access to downtown Grass Valley and SR 49. Southwest-bound Tinloy Street is a two-lane one-way street with left-through and through-right lanes. Neal Street is a two-way street with one eastbound and westbound lane along Neal Street. Crosswalks are present across both legs of Tinloy Street. Bike lanes are not present in the intersection.
2. The **Tinloy Street / S. Auburn Street** intersection is a signal-controlled intersection providing access to downtown Grass Valley and SR 49. Southwest-bound Tinloy Street is a two-lane one-way street with left-through and through-right lanes. S. Auburn Street is a two-way street with one southbound lane and two northbound lanes, one left-through and one through lane. Crosswalks are present across both legs of S. Auburn Street. Bike lanes are not present in the intersection.
3. The **Tinloy Street / E. Bennett Road – Southbound SR 49 off-ramp** intersection is a four-way stop-controlled intersection. The southbound SR 49 ramp is stop controlled and includes through-left and through-right lanes. Southbound E. Bennett Road includes a single uncontrolled lane while northbound E. Bennett Road includes a left lane and a through lane which are stop controlled. Crosswalks are present across the SR 49 ramp and E. Bennett Road approaches. Bike lanes are not present along any of these roads.

4. The **Hansen Way / E. Bennett Road** intersection is a four-way all-way stop controlled intersection. Hansen Way is a one-way northbound roadway consisting of through-left and through-right lanes on the approach leg. The eastbound E. Bennett Road approach includes a left turn lane and a through lane while westbound E. Bennett Road includes a through-right lane. Crosswalks are present along across both sides of Hansen Way while bike lanes are not present along any of the roadways.

5. The **E. Main Street / Idaho Maryland Road / SB SR 49 ramps** intersection is a modified one-lane roundabout. The E. Main Street approaches are along the southbound and eastbound approaches. The westbound Idaho Maryland Road approach includes two entry lanes, one for u- and left turning vehicles and one for through and right turning vehicles. The southbound E. Main approach includes a free right turn movement onto westbound E. Main Street and a single lane for through, left and u-turns. The eastbound E. Main Street and southbound SR 49 ramps approaches include a single lane for right, through, left and u-turns. Crosswalks are present along all the north, east and west approaches. Bike lanes are not present along any of the approaches.

6. The **Idaho Maryland Road / NB SR 49/20 ramps** intersection is an all-way stop tee intersection. The center of the intersection is about 175' west of the center of the Idaho Maryland / Railroad Avenue intersection, also all-way stop controlled. The eastbound Idaho Maryland Road approach includes a single through-right lane while the westbound approach includes a through-left lane and a through lane. The NB SR 49/20 off-ramp includes left and right lane turn lanes. Crosswalks are present across the west and south legs.

7. The **Idaho Maryland Road / Railroad Avenue** intersection is an all-way stop tee intersection just east of the NB SR 49/20 ramps as described above. The eastbound Idaho Maryland Road approach includes a through lane and a through-right lane while the westbound approach includes a through-left lane and a through lane. NB Railroad Avenue includes a single approach lane. A crosswalk is present across the Railroad Avenue leg.

8. The **E. Main Street / Brunswick Road** intersection is a split phase signal-controlled four leg intersection. The northbound E. Main Street approach includes left, through and right lanes while the southbound approach includes dual left turn lanes and a through-right lane. The westbound approach includes a left turn lane, a through-left lane and a right turn lane. The westbound right turn includes an overlap with the southbound left turn phase. The eastbound approach, Olympia Drive, is a single lane approach. Crosswalks are present across the southbound and westbound approaches. Bicycle lanes or marked sharrows, shared lanes for automobiles and bicycles, are present along the E. Main Street and Brunswick Road approaches.

9. The **Brunswick Road / Maltman Drive – SB SR 49 Off-ramp** intersection is a signal-controlled four leg intersection. The intersection is split phased along the Maltman Drive and SB SR 49 off-ramp approaches. The eastbound Brunswick Road approach includes a through lane and a through-right lane while the westbound Brunswick Road approach includes a left turn lane and two through lanes. The SB SR 49 off-ramp includes dual left turn lanes, a through

lane and a right turn lane while Maltman Drive includes a left turn lane and a right turn lane; the right turn lane is overlapped with the westbound left turn movement. A crosswalk is present across the Maltman Drive approach and bike lanes or sharrows are present along Brunswick Road.

10. The **Brunswick Road / NB SR 49 ramp** intersection is a signal-controlled intersection. Both approaches along Brunswick Road include a free right turn onto NB SR 49 and two through lanes. The off-ramp approach includes left and right turn lanes. A crosswalk exists across the ramp approach and marked bike lanes are present along the west side of the intersection.

11. The **Brunswick Road / Sutton Way** intersection is a four-way signal-controlled intersection. The eastbound Brunswick Road approach includes dual left turn lanes, two through lanes and a right turn lane. The westbound approach includes a left turn lane, a through lane and a through-right lane. Northbound Sutton Way includes dual left turn lanes and a through-right lane while the southbound approach includes a left turn lane, a through lane and a right turn lane. The southbound right turn lane has separate signal control than the rest of this approach and provides right green arrows with southbound Sutton Way, when eastbound through or left turn Brunswick Road movements are green and when northbound Sutton Way is green. Crosswalks exist across the north, south and east approaches while marked bike lanes are present along Brunswick Road east of the intersection. A bike lane is also present along the departure leg on the south side of Sutton Way while a northbound bike terminates prior to the Brunswick Road intersection.

12. The **Brunswick Road / Idaho Maryland Road** intersection is stop controlled along the Idaho Maryland Road approaches of the intersection. Northbound Brunswick Road includes a left lane and a through-right turn lane while the southbound approach includes left, through and right turn lanes. The eastbound Idaho Maryland Road approach includes a right turn only lane while the westbound approach includes a left lane and a right lane. Vehicles were observed along the Idaho Maryland Road approaches making illegal left and through movements. Those volumes were moved into legal movements for this analysis. Crosswalks and bike facilities are not present at this intersection.

13. The **Brunswick Road / Whispering Pines Lane** intersection is a tee intersection with stop control along Whispering Pines Lane. The northbound approach along Brunswick Road includes a left turn lane and a through lane while the southbound approach includes a through lane and a through-right lane; the outside lane merges into the through lane about 350 feet south of the intersection. The eastbound Whispering Pines Lane approach includes right and left turn lanes. Crosswalks and bike facilities are not present in the intersection.

14. The **Brunswick Road / E. Bennett Road – Greenhorn Road** intersection is an all-way stop controlled intersection. The Brunswick Road approaches include left turn lanes and through-right lanes while the E. Bennett Road and Greenhorn Road approaches include a single lane for all movements. Crosswalks and bike facilities are not present at this intersection.

15. The **Brunswick Road / SR 174** intersection is a tee intersection with stop control for Brunswick Road. The northbound SR 174 approach includes a single through-right lane with a slip ramp leading to northbound Brunswick Road. The southbound SR 174 approach includes a left turn lane and a through lane. The Brunswick Road approach is stop controlled and includes left and right turn lanes. Crosswalks and bike facilities are not present at this intersection.

16. The **Brunswick Road / Project Access** intersection is an existing tee intersection with stop control at the project driveway. Brunswick Road includes single lanes in each direction with a two-way left turn lane at the driveway. Bike facilities are not present.

17. The **E. Bennett Road / Millsite Road** intersection is an existing tee intersection providing a secondary access to the Brunswick site. The existing roadway along Millsite Road is unimproved. This driveway will provide right turn only access to Brunswick Road for larger haul trucks. E. Bennett Road includes single lanes in each direction. Bike facilities are not present.

18. The **Whispering Pines Lane / Centennial Industrial site** intersection is a future driveway that will provide access to the Centennial site. The driveway will be located about 180 feet east of Centennial Drive and will be used for employee and haul route truck traffic. Whispering Pines Lane is a two-lane divided roadway from Brunswick Road to just east of the proposed project driveway where the median ends. Although not marked as a bike lane the roadway includes a shoulder stripe to allow a bike lane.

19. The **Idaho Maryland Road / Centennial Road** intersection is a tee intersection with stop control at Centennial Road. Idaho Maryland Road includes a through lane and right turn lane along the eastbound approach and a left turn lane and through lane along the westbound approach. Centennial Drive is a single lane approach. Crosswalks and bike facilities are not present at this intersection.

20. The **Idaho Maryland Road / Sutton Way** intersection is an all-way stop controlled tee intersection. Idaho Maryland Road includes single lanes in each direction while Sutton Way includes right and left turn lanes. Crosswalks and bike facilities are not present at this intersection.

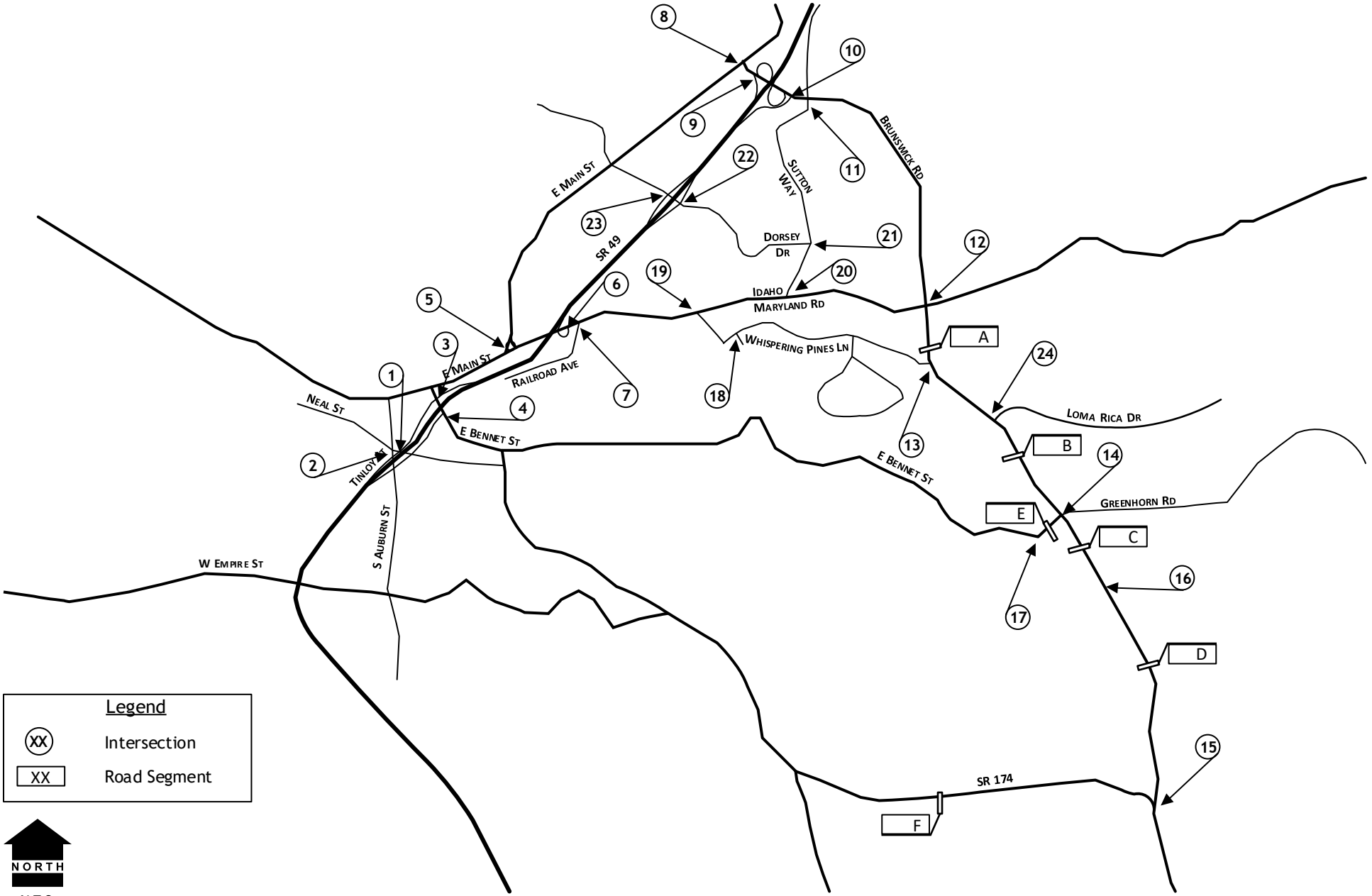
21. The **Sutton Way / Dorsey Drive** intersection is an all-way stop controlled tee intersection. Northbound Sutton Way includes a single lane for left and through movements while the southbound approach includes a through lane and right turn lane. The eastbound Dorsey Drive approach is a single lane; however, is wide enough to allow right turns past left turning vehicles. A crosswalk is present across the Dorsey Drive approach while bike facilities are not present.

22. The **SR 49 NB Ramps / Dorsey Drive** intersection is one-half of a diamond interchange. The intersection is signal-controlled. The eastbound Dorsey Drive approach includes a left turn lane and a through lane while the westbound approach includes two through lanes and a through-right lane; the inside through lane is a trap left turn lane for access onto southbound

SR 49. The northbound SR 49 off-ramp includes a left turn lane, a through-left lane and a right turn lane. Crosswalks are present along the northbound SR 49 ramps and the westbound Dorsey Drive approach. Bike lanes are present along Dorsey Drive.

23. The **SR 49 SB Ramps / Dorsey Drive** intersection is one-half of a diamond interchange. The intersection is signal controlled. The eastbound Dorsey Drive approach includes two through lanes and a right turn lane; the inside through lane is a trap left turn lane for access onto northbound SR 49. The westbound approach includes a left turn lane and two through lanes. Crosswalks are present along the southbound SR 49 ramps and the eastbound Dorsey Drive approach. Bike lanes are present along Dorsey Drive.

24. The **Brunswick Road / Loma Rica Drive** intersection is a three-way signal-controlled intersection. The signal operates with a westbound to northbound overlap with the southbound left turn phase. The southbound Brunswick Road approach includes a left turn lane and one through lane. The northbound approach includes a through lane and a right turn lane while westbound Loma Rica Drive includes left turn and right turn lanes. Crosswalks and bike lanes are not present at this intersection.



STUDY INTERSECTIONS AND ROADWAY SEGMENTS

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 3

III.3. Study Area Roadway Segments

1. **Brunswick Road – SR 49 to Whispering Pines Lane.** This segment is an approximately 1¼ mile segment. The segment varies from a four-lane section with turn lanes between SR 49 and west of Old Tunnel Road to a two-lane road plus center turn lane between Old Tunnel Road and Bubbling Wells Road; this makes up about ½-mile of the segment. Between Bubbling Wells Road and Idaho-Maryland Road, about ⅗-mile, the road is two lanes. From Idaho-Maryland Road to Whispering Pines Lane, Brunswick Road has one northbound lane with a turn lane and two southbound lanes; this portion is about ⅕-mile. Each lane is about 12' wide. North of Bubbling Wells Road curb, gutter and sidewalk is present as the roadway displays more urbanized standards while to the south the roadway has more rural characteristics with varying width paved and unpaved shoulders. The roadway is classified as a Class I Highway with rolling terrain. The roadway is posted as a 40-mph road north of Bubbling Wells Road and 50 mph south of Bubbling Wells Road. Midweek traffic volumes are about 12,300 bi-directionally.

2. **Brunswick Road – Whispering Pines Lane to E. Bennett Road.** This ¾-mile segment is generally a two-lane roadway with turn lanes over rolling terrain. The roadway is two lanes between E. Bennett Road and Loma Rica Drive, where it widens to provide turn lanes at the intersection. Between Loma Rica Drive and Whispering Pines Lane the northbound direction includes a single lane while the southbound direction consists of a two-lane section departing the Whispering Pines Lane intersection for about 300 feet at which point a lane drop occurs approaching Loma Rica Drive. Lanes are generally 12-feet wide with varying width paved and unpaved shoulders. The roadway is classified as a Class I Highway and is posted at 50 mph. Midweek traffic volumes are about 15,360 bi-directionally.

3. **Brunswick Road – E. Bennett Road to Project Driveway.** This ½-mile segment is generally a two-lane roadway. Lanes are generally 12-feet wide with varying width paved and unpaved shoulders. The roadway is classified as a Class I Highway with about a 5% downhill grade from E. Bennett Road and is posted at 50 mph. Midweek traffic volumes are about 9,440 bi-directionally.

4. **Brunswick Road – Project Driveway to SR 174.** This ⅔-mile segment is a two-lane roadway over rolling terrain. Lanes are generally 12-feet wide with varying width paved and unpaved shoulders. The roadway is classified as a Class I Highway and is posted at 50 mph. Midweek traffic volumes are about 9,420 bi-directionally.

5. **E. Bennett Road – Project Driveway to Brunswick Road.** This 600-foot is a two-lane roadway over rolling terrain and part of a larger segment to Union Jack Street. 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. Midweek traffic volumes are about 1,490 bi-directionally.

6. **SR 174 – Brunswick Road to Empire Street.** This approximately 2-mile segment is generally a two-lane roadway with left turn lanes at various intersections over rolling terrain. Lanes are generally 12-feet wide with varying width paved and unpaved shoulders. The roadway is classified as a Class I Highway and is posted at 50 mph. Midweek traffic volumes are about 8,300 bi-directionally.

III.4. Analysis Criteria

Intersection Level of Service Methodology. *Level of Service Analysis* has been employed to provide a basis for describing existing traffic conditions and for evaluating the significance of project traffic impacts. Level of Service measures the *quality* of traffic flow and is represented by letter designations from "A" to "F", with a grade of "A" referring to the best conditions, and "F" representing the worst conditions.

The analysis techniques presented in the *Highway Capacity Manual 6th Edition* were used to provide a basis for describing existing traffic conditions and evaluating the significance of project traffic impacts.

Various software programs have been developed to assist in calculating intersection Level of Service, and the level of sophistication of each program responds to factors that affect the overall flow of traffic. Three programs, (1) Synchro, (2) Synchro/Simtraffic, a simulation program, and (3) SIDRA, a roundabout intersection analysis program, were utilized for the analysis depending on the intersection characteristics.

Synchro software was used at the following intersections:

4. Hansen Way / E. Bennett Road
6. Idaho Maryland Road / NB SR 49/20 Ramps
7. Idaho Maryland Road / Railroad Avenue
12. Brunswick Road / Idaho Maryland Road
13. Brunswick Road / Whispering Pines Lane
14. Brunswick Road / E. Bennett Road – Greenhorn Road
15. Brunswick Road / SR 174
16. Brunswick Road / Project Access
17. E. Bennett Road / Millsite Road
18. Whispering Pines Lane / Centennial Industrial site driveway
19. Idaho Maryland Road / Centennial Road
20. Idaho Maryland Road / Sutton Way
21. Sutton Way / Dorsey Drive

The City of Grass Valley has previously identified the Brunswick Road / SR 49/20 interchange to be analyzed using Synchro/Simtraffic simulation software. Additional intersections were also

simulated based on non-standard traffic control conditions that Synchro cannot analyze. The following intersections utilized Synchro/Simtraffic simulation software:

1. Tinloy Street / Neal Street
2. Tinloy Street / S. Auburn Street
3. Tinloy Street / E. Bennett Road – SB SR 49 Off-Ramp
8. E. Main Street / Brunswick Road
9. Brunswick Road / Maltman Drive – SB SR 49 Off-Ramp
10. Brunswick Road / NB SR 49 Ramps
11. Brunswick Road / Sutton Way
22. NB SR 49 Ramps / Dorsey Drive
23. SB SR 49 Ramps /Dorsey Drive

SIDRA software was used at the following intersection:

5. E. Main Street / Idaho Maryland Road / SB SR 49 Ramps

Each of the intersections analyzed by Synchro/Simtraffic software is within the City of Grass Valley. As noted above, the City requires simulation of the Brunswick Road corridor. The remaining intersections were also simulated based on non-standard traffic control. 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. The simulation results contained herein reflect the average of the mean 10 one-hour simulation runs selected from a 20-run sample.

Roundabout analyses were conducted using *SIDRA* Version 8 software.

Applicable Level of Service thresholds based on average delay are shown in Table 2.

TABLE 2
LEVEL OF SERVICE DEFINITIONS

Level of Service	Signalized Intersection	Unsignalized Intersection	Roadway (Daily)
"A"	Uncongested operations, all queues clear in a single-signal cycle. Delay ≤ 10.0 sec	Little or no delay. Delay ≤ 10 sec/veh	Completely free flow.
"B"	Uncongested operations, all queues clear in a single cycle. Delay > 10.0 sec and ≤ 20.0 sec	Short traffic delays. Delay > 10 sec/veh and ≤ 15 sec/veh	Free flow, presence of other vehicles noticeable.
"C"	Light congestion, occasional backups on critical approaches. Delay > 20.0 sec and ≤ 35.0 sec	Average traffic delays. Delay > 15 sec/veh and ≤ 25 sec/veh	Ability to maneuver and select operating speed affected.
"D"	Significant congestion of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. Delay > 35.0 sec and ≤ 55.0 sec	Long traffic delays. Delay > 25 sec/veh and ≤ 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
"E"	Severe congestion with some long standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). Delay > 55.0 sec and ≤ 80.0 sec	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and ≤ 50 sec/veh	At or near capacity, flow quite unstable.
"F"	Total breakdown, stop-and-go operation. Delay > 80.0 sec	Intersection blocked by external causes. Delay > 50 sec/veh	Forced flow, breakdown.

Sources: Highway Capacity Manual, 6th Edition Transportation Research Board, 2016.

Sec/veh – seconds per vehicle

III.5. Roadway Segment Level of Service Methodology

Two-Lane Highway Roadway Segments. Roadway segments were analyzed using methods presented in the *Highway Capacity Manual 2010 (HCM);* the methods used in 2010 and HCM 6th Edition are similar. A two-lane highway is an undivided roadway with one lane in each direction. Passing a slower vehicle requires use of the opposing lane as sight distance and gaps in the opposing traffic stream permit. As volumes and geometric restrictions increase, the ability to pass decreases and platoons form. Motorists in platoons are subject to delay because they are unable to pass. The HCM divides these roadways into three types: Class I, Class II and Class III. They are defined as follows:

- *Class I two-lane highways* are highways where motorists expect to travel at relatively high speeds. Two-lane highways that are major intercity routes, primary connectors of major traffic generators, daily commuter routes, or major links in state or national highway networks are generally assigned to Class I. These facilities serve mostly long-distance trips or provide the connections between facilities that serve long-distance trips.

- *Class II two-lane highways* are highways where motorists do not necessarily expect to travel at high speeds. Two-lane highways functioning as access routes to Class I facilities, serving as scenic or recreational routes (and not as primary arterials), or passing through rugged terrain (where high-speed operation would be impossible) are assigned to Class II. Class II facilities most often serve relatively short trips, the beginning or ending portions of longer trips, or trips for which sightseeing plays a significant role.

- *Class III two-lane highways* are highways serving moderately developed areas. They may be portions of a Class I or Class II highway that pass through small towns or developed recreational areas. On such segments, local traffic often mixes with through traffic, and the density of unsignalized roadside access points is noticeably higher than in a purely rural area. Class III highways may also be longer segments passing through more spread-out recreational areas, also with increased roadside densities. Such segments are often accompanied by reduced speed limits that reflect the higher activity level.

Levels of Service. Three measures of effectiveness are incorporated into the methodology to determine automobile LOS:

1. Average Travel Speed (ATS) reflects mobility on a two-lane highway. It is defined as the highway segment length divided by the average travel time taken by vehicles to traverse it during a designated time interval.

2. Percent Time Spent Following (PTSF) represents the freedom to maneuver and the comfort and convenience of travel. It is the average percentage of time that vehicles must travel in platoons behind slower vehicles due to the inability to pass. Because this characteristic is difficult to measure in the field, a surrogate measure is the percentage of vehicles traveling at headways of less than 3.0 at a representative location within the highway segment. PTSF also represents the approximate percentage of vehicles traveling in platoons.

3. Percent of free-flow speed (PFFS) represents the ability of vehicles to travel at or near the posted speed limit.

Speed and delay due to passing restrictions are both important to motorists on Class I two-lane highways; therefore, LOS is defined in terms of both ATS and PTSF. Travel speed is not a significant issue on Class II highways; therefore, LOS is defined in only terms of PTSF. High speeds are not expected on Class III highways and since the length of the Class III segments may be generally limited, passing restrictions are also not a major concern. In Class III segments drivers are expected to want to travel at or near the speed limit. Therefore, PFFS is used to define LOS. The LOS criteria for two-lane highways are shown in Table 3.

TABLE 3
AUTOMOBILE LOS FOR TWO-LANE HIGHWAYS†

LOS	Class I Highways		Class II Highways	Class III Highways
	ATS (mi / hr)	PTSF (%)	PTSF (%)	PFFS (%)
A	>55	≤35	≤40	>91.7
B	>50-55	>35-50	>40-55	>83.3 – 91.7
C	>45-50	>50-65	>55-70	>75.0 – 83.3
D	>40-45	>65-80	>70-85	>66.7 – 75.0
E	≤40	>80	>85	≤66.7

† HCM 2010, Chapter 15, December 2010

The following Nevada County roadway segments were analyzed:

A. Brunswick Road, from Whispering Pines Lane to SR 49 (Class III)
B. Brunswick Road, between E. Bennett Road and Whispering Pines Lane (Class III)
C. Brunswick Road, between E. Bennett Road and the project driveway (Class III)
D. Brunswick Road, between the project driveway and SR 174(Class III)
E. SR 174, between Brunswick Road and Empire Street (Class I)
F. E. Bennett Road, between Millsite Road and Brunswick Road (Class III)

III.6. Level of Service Thresholds of Significance

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, except the SR 174 / Brunswick Road intersection and SR 174 east of Empire Street are within the Grass Valley Community Region as identified in the County's General Plan. The SR 174 / Brunswick Road intersection and SR 174 roadway segment, east of Empire Street, are a part of the State highway system.

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 Dorsey Marketplace 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 and SIDRA analyses. Those locations where the 95th percentile queue exceeds the available storage have also been noted. Nevada County notes that queuing impacts are considered to be substantial if the queues:

1) exceed the available storage capacity and extend through the adjacent street intersection,
2) extend through right- or left-turn pocket,
3) extend in the through lane blocking a right- or left-turn pocket, or
4) result in insufficient sight distance conditions.

In addition to the above parameters the queues projected under "Plus Project" conditions were also compared to "No Project" conditions to determine the extent of queues where existing queues exceed the available storage. For this report, "Plus Project" queues exceeding the turn lane are assumed to have a substantial impact if the "Plus Project" queue is greater than 25 feet of the "No Project" queue. This represents about one car length and is used by other agencies in assessing queuing impacts. The 25-foot length allows fluctuation in the results, especially in simulations where stochastic modeling results in some intersection queues increasing while others may decrease.

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 warrants 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. Since this analysis considered the peak hours of adjacent a.m. and p.m. street traffic as well as the peak hours of project traffic, the peak hour warrant was analyzed for each of the five hours. 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.

III.7. Non-Automobile Transportation

Public Transit. The Transit Services Division of the Nevada County Public Works Department provides bus service throughout Nevada County. The nearest bus route to either the Brunswick site or Centennial site is Route #3 which passes directly by the Centennial site.

The #3 Grass Valley Loma Rica Loop route operates between the Tinloy Street / Bank Street Transit Center and the Nevada County Airport. The route operates Monday through Friday only, with departures from the Transit Center at 8:30 a.m., 10:30 a.m., 12:30 p.m., 1:30 p.m., 3:30 p.m. and 5:30 p.m. The loop takes approximately 30 minutes.

Bicycle and Pedestrian Facilities. Designated bicycle facilities exist on various parts of County roadways and City of Grass Valley streets. There are no marked bicycle facilities near the Brunswick site. Whispering Pines Lane, which will provide access to the Centennial site, is a two-lane divided roadway with a wide shoulder which is not marked as a bike lane. Sidewalk is more prevalent within the City of Grass Valley than along Nevada County roadways; however, no sidewalk exists near the Brunswick site or Centennial site.

III.8. Existing Traffic Operating Conditions

Traffic Volume Counts. New traffic counts were conducted by National Data and Surveying Services (NDS). Intersection turning movements (ITM) were conducted the weeks of August 26, 2019 and October 21, 2019 on Tuesdays, Wednesdays or Thursdays while schools were in session. Roadway segment counts were conducted over a three-day midweek period from August 27 to August 29, 2019 while vehicle classification counts were conducted over a seven-day period from September 4 to September 10.

All counts were conducted based on accepted engineering practice. Five (5) time periods were studied based on direction from Nevada County. These included the "standard" a.m. and p.m. peak hours, when adjacent street traffic is at its highest, and at the three time periods when project employee trips are expected to occur. The standard time periods are generally in the two-hour windows from 7:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 6:00 p.m., with the peak hour defined as the highest four continuous 15-minute periods. The remaining three analysis periods include 6:30 a.m. to 7:30 a.m., 3:30 p.m. to 4:30 p.m., and 6:30 p.m. to 7:30 p.m. The 6:30 a.m. / p.m. to 7:30 a.m. / p.m. period coincides with mining operation shift changes at 7:00 a.m. / p.m. while the 3:30 p.m. to 4:30 p.m. period coincides with administrative personnel shift end at 3:30 p.m.; administrative personnel commence their workday at 7:00 a.m. This is referred to as 'project traffic hours' throughout the report. Unless the peak hour of adjacent street traffic is coincident with the peak hour of project traffic the 'plus project' scenarios will not make a noticeable

contribution to the area's traffic during the standard peak hours. Intersection turning movements are presented in Figures 4A through 4F with the peak hours identified in the footnotes occurring in the "standard" 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. hours.

After the Covid-19 pandemic began the County requested that the Brunswick Road / Loma Rica Drive intersection be analyzed. Covid-19 has resulted in reduced traffic patterns due to school and work closures. ITM's have been therefore, generally lower than usual traffic counts. ITM's were developed based on data analytics provided from *Streetlight Data*. *Streetlight Data* uses "Big-Data" derived travel pattern analytics against publicly available traffic movement ratios derived from traffic counts to project current ITM's. The 2019 daily traffic volume data counted along Brunswick Road was used to calibrate the intersection data. The midweek four months of March, April, September and October 2019 were used to develop the intersection turning movements.

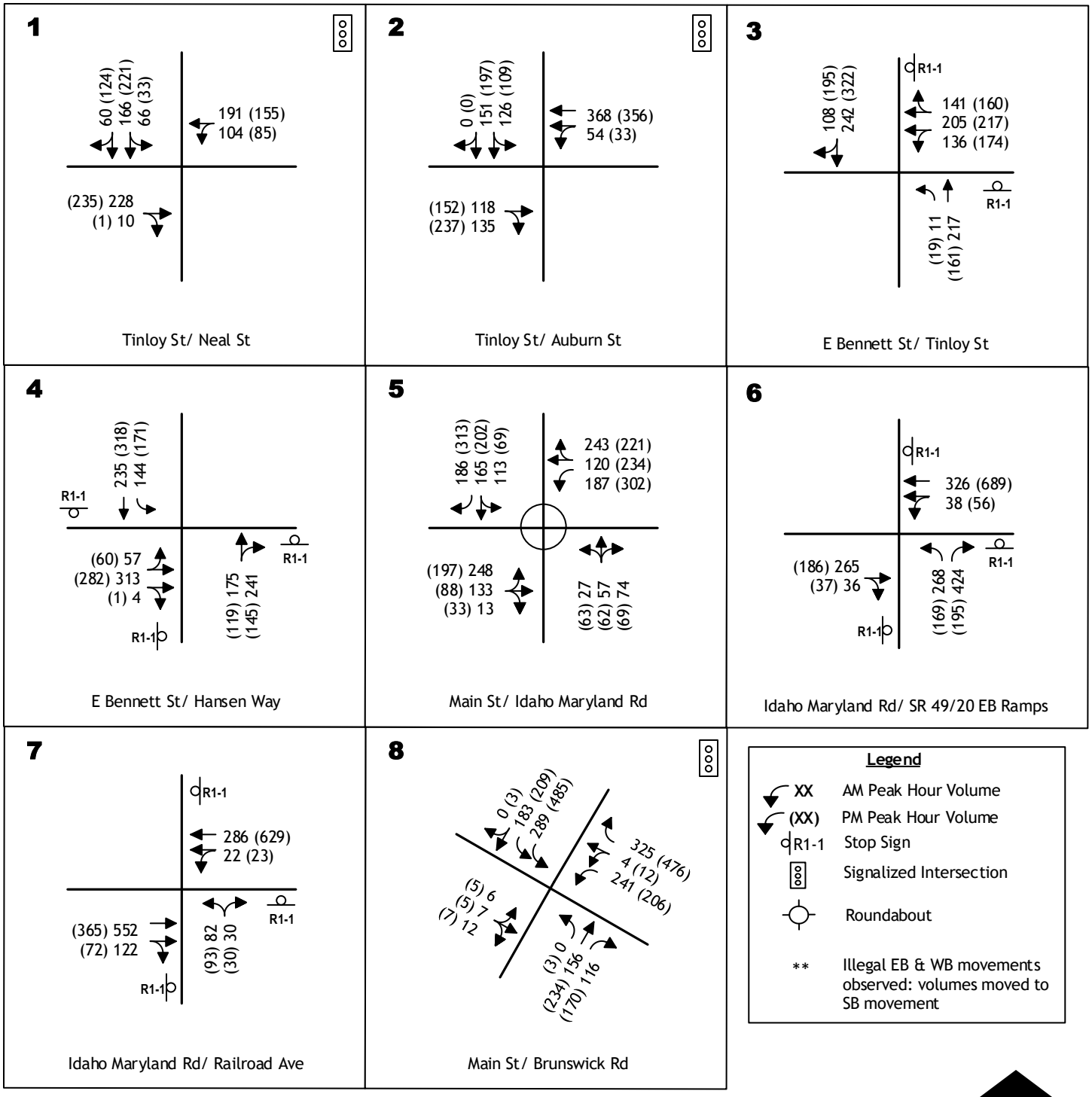
Intersection Levels of Service. Tables 4A and 4B summarize current operating Levels of Service at the study area intersections for each of the five time periods described. Three intersections currently operate at unacceptable Levels of Service, at LOS E or F. These intersections include:

12. Brunswick Road at Idaho Maryland Road where the westbound approach operates at LOS F,
15. Brunswick Road at SR 174 where the southbound approach operates at LOS F, and
19. Idaho Maryland Road at Centennial Drive where the northbound approach operates at LOS F.

Six intersections currently meet the peak hour signal warrant. The peak hour signal warrant is used to provide an informal analysis whether an intersection may be a candidate for signalization. This warrant is intended for use at locations where traffic conditions are such that for a minimum of one hour of an average day the minor street traffic cannot cross or enter the major street without undue delay. The warrant considers intersection volumes and the stopped time delay along the higher volume leg of the minor approach. While the warrant is applied only in unusual circumstances such as access from an office complex this warrant provides an indication whether an intersection may require further observation. An intersection may meet the minimum requirements but operate at acceptable levels of service. Prior to installation of a traffic signal a full warrant analysis / engineering study should be undertaken to determine whether the intersection overall safety and/or operation will be improved. Those intersections meeting the peak hour warrant include:

3. Bennett Road at Tinloy Street,
6. Idaho Maryland Road at SR 49/20 EB Ramps,
12. Brunswick Road at Idaho Maryland Road,
13. Brunswick Road at Whispering Pines Lane,
14. Brunswick Road at E. Bennett Road, and
15. Brunswick Road at SR 174.

The Brunswick Road / Idaho Maryland Road intersection and Brunswick Road / SR 174 intersection also operate below the accepted LOS D threshold.

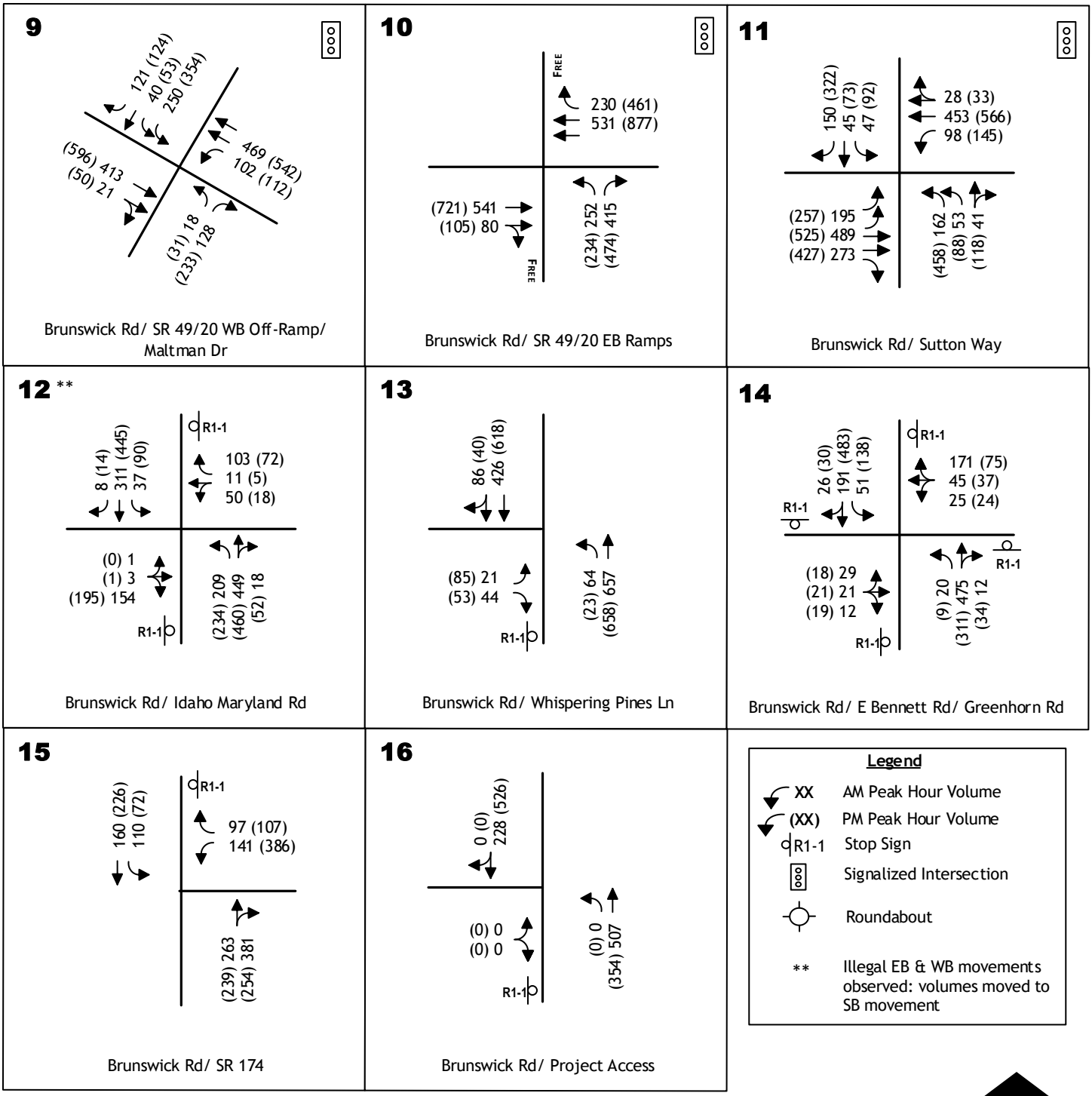


AM/PM PEAK HOURS EXISTING TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 4a

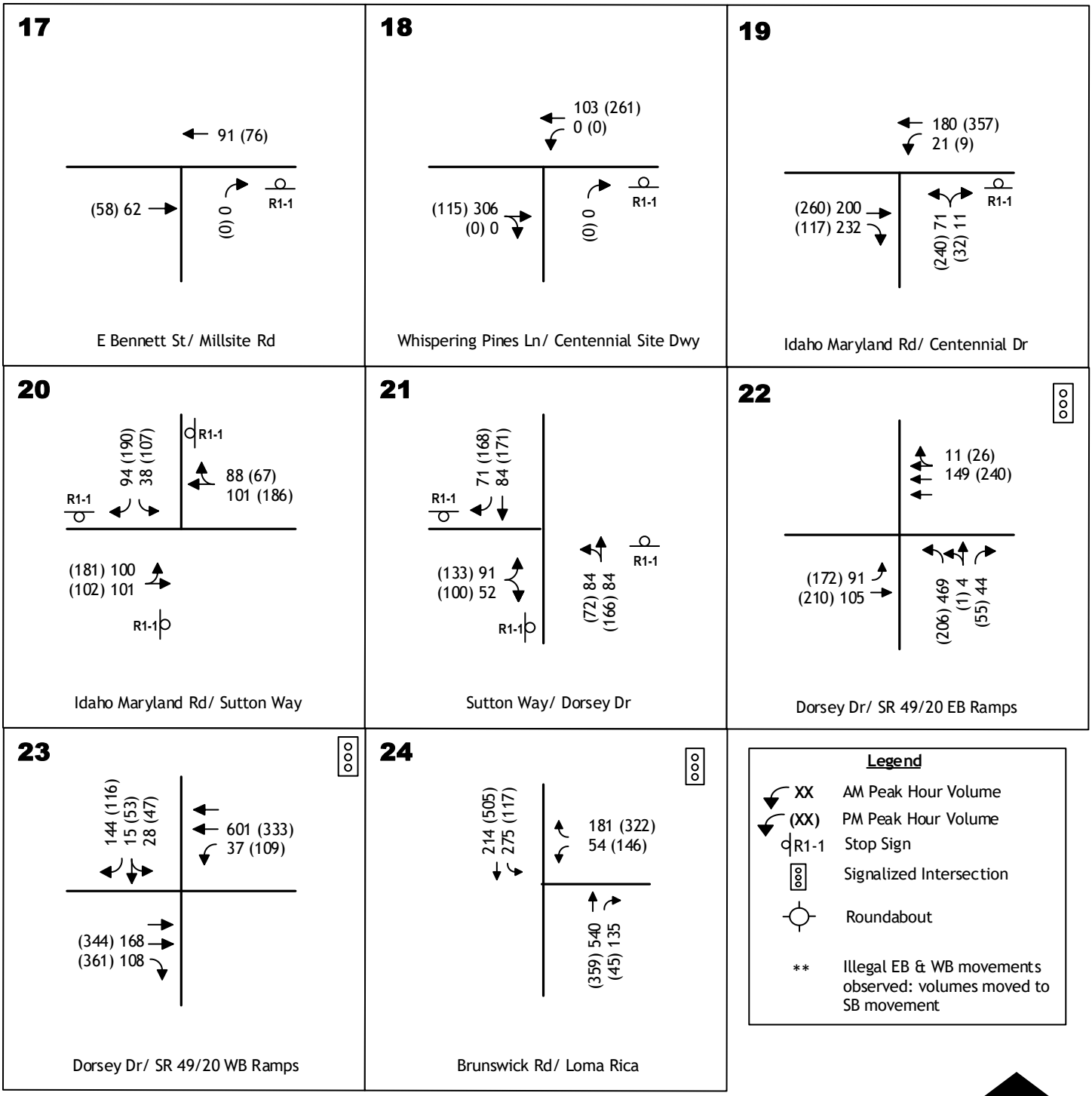


AM/PM PEAK HOURS EXISTING
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 4b

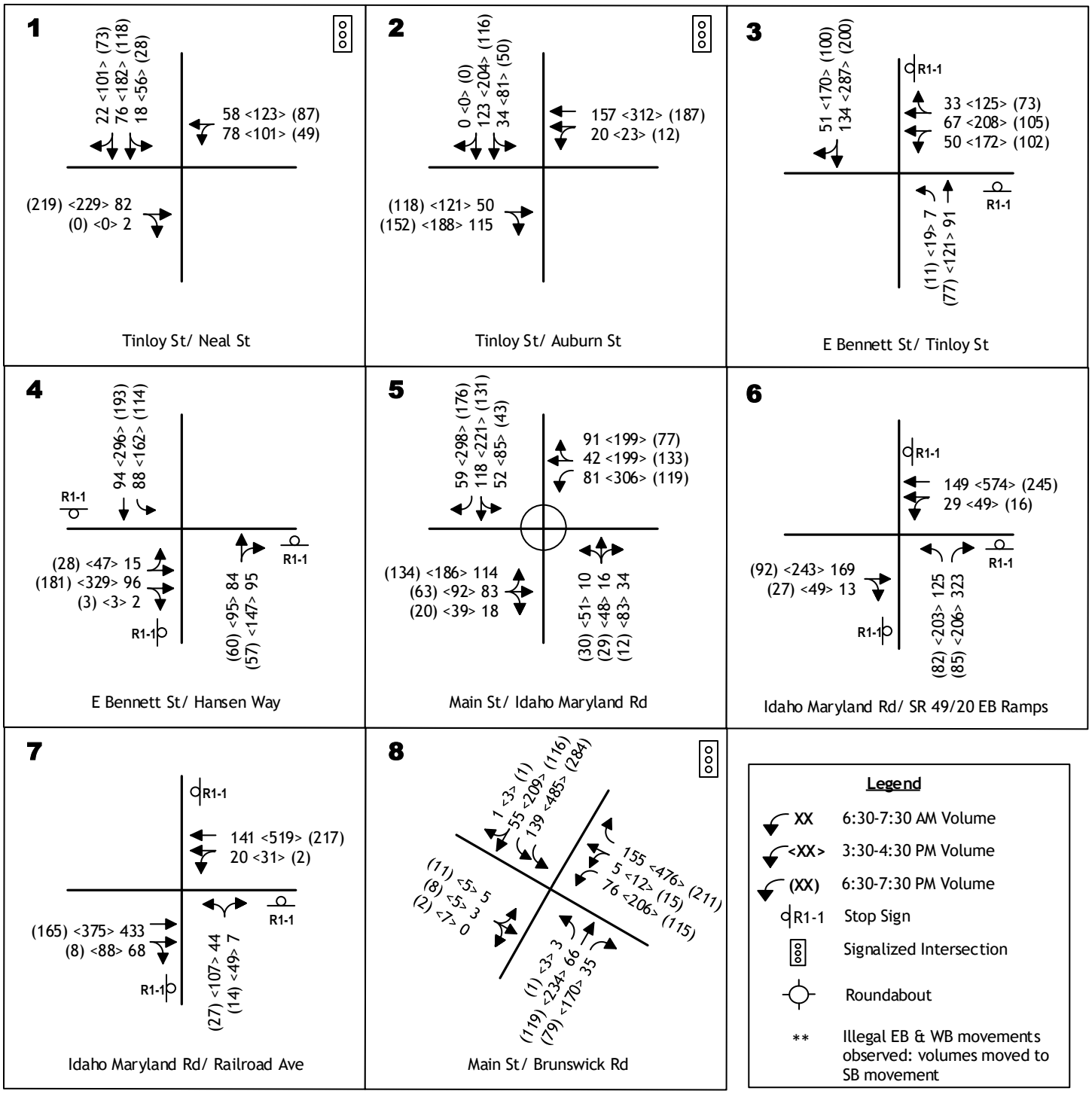


AM/PM PEAK HOURS EXISTING TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 4c

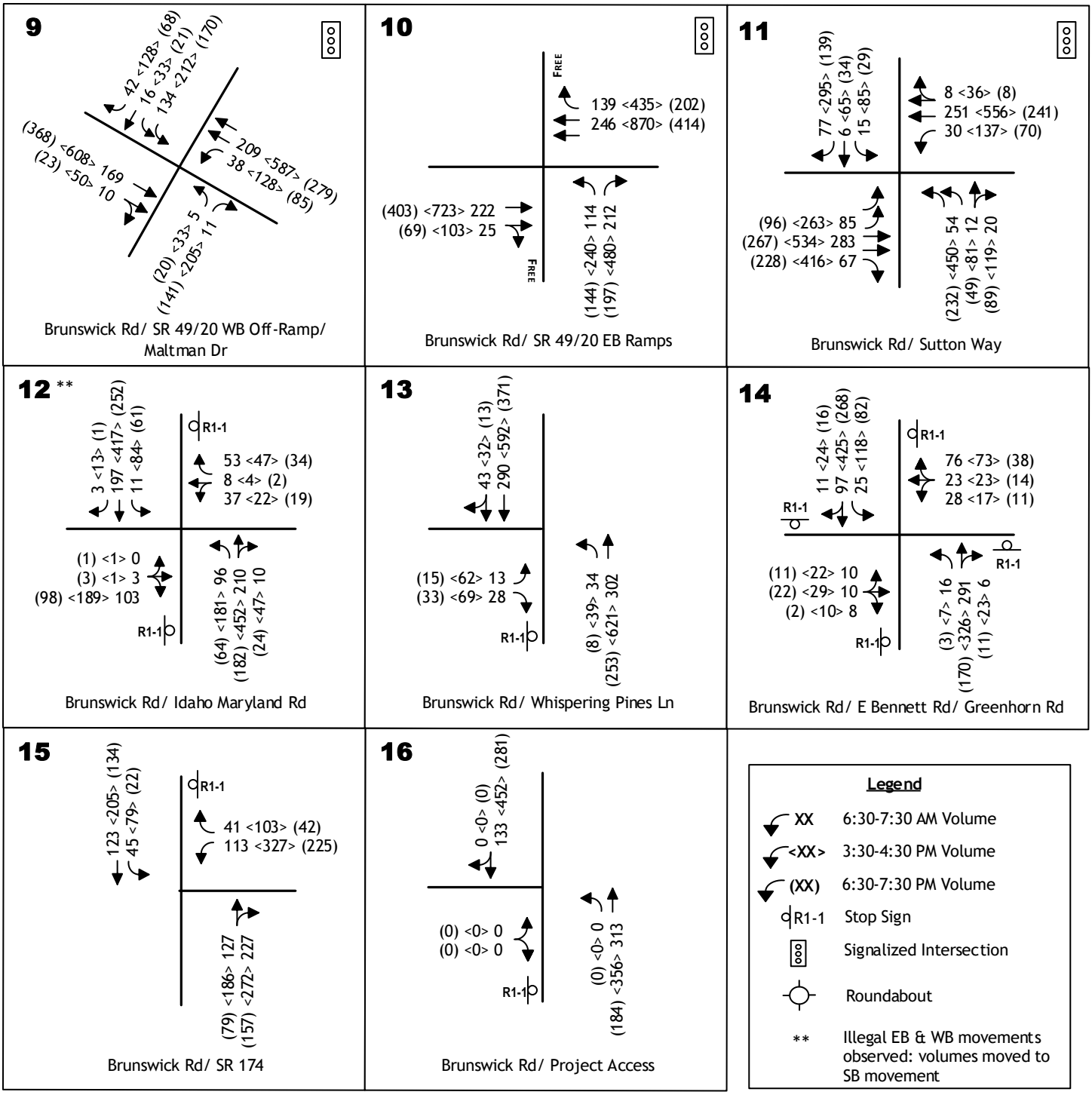


PROJECT TRAFFIC HOURS EXISTING
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 4d

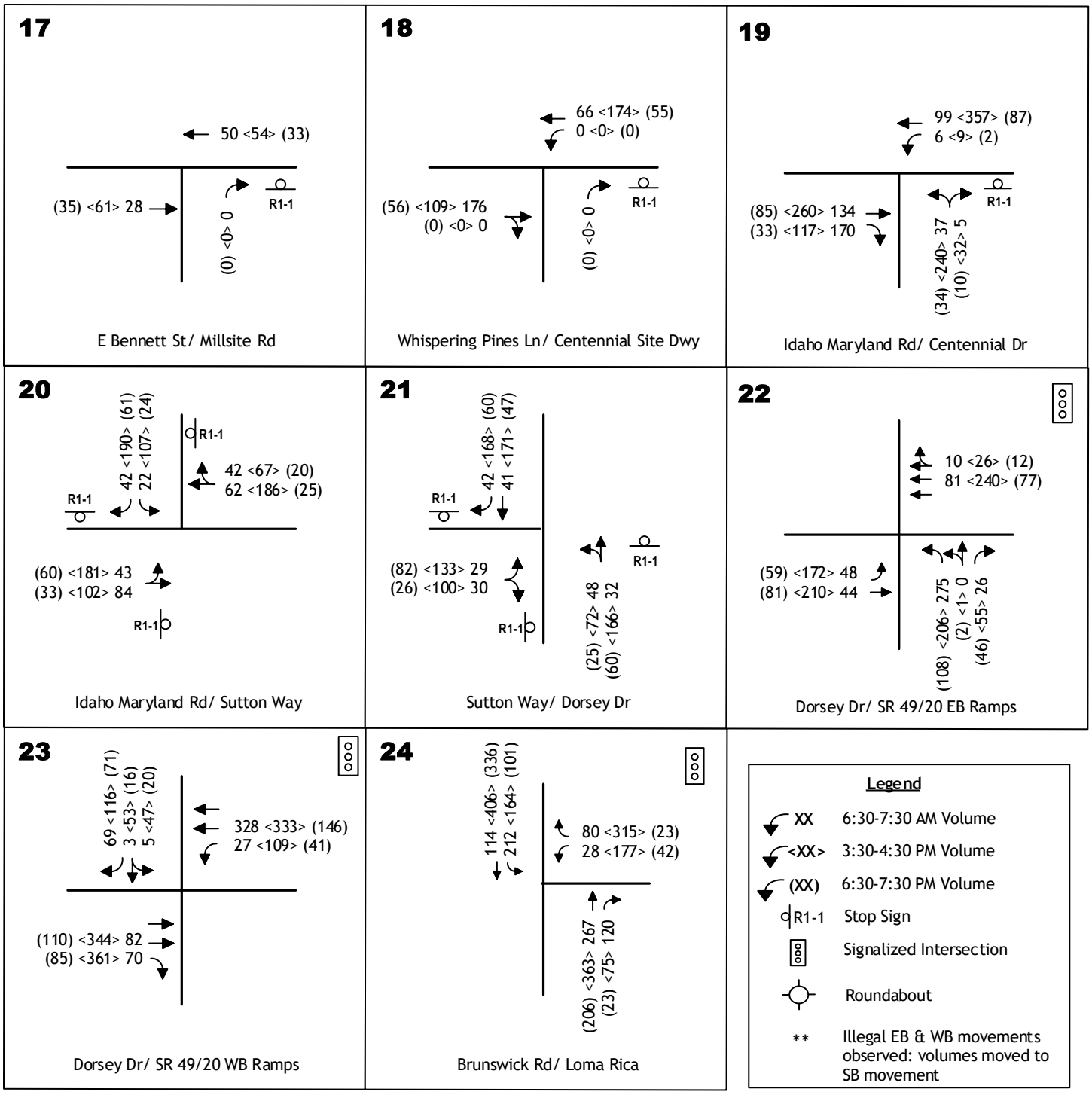


PROJECT TRAFFIC HOURS EXISTING
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 4e



PROJECT TRAFFIC HOURS EXISTING
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 4f

TABLE 4A
EXISTING LEVELS OF SERVICE AT INTERSECTIONS
(PEAK HOURS)

Location	Control	AM Peak Hour		PM Peak Hour		Meets Peak Hour Warrant?
		LOS	Average Delay	LOS	Average Delay	
1. Neal St / Tinloy St ‡◊	Signal	B	14.5	B	10.9	N/A
2. S. Auburn St / Tinloy St ‡◊	Signal	B	10.4	B	10.3	N/A
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp ‡◊	SB / WB Stop	A	6.2	A	7.0	Yes
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp ‡◊	AWS	C	19.0	C	15.4	No
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps ‡◊	Roundabout	A	7.2	A	6.9	N/A
6. Idaho Maryland Rd / SR 49 EB Ramps ‡◊	AWS	C	20.1	C	23.8	Yes
7. Idaho Maryland Rd / Railroad Ave ‡◊	AWS	B	12.2	C	16.3	No
8. E. Main St / Brunswick Rd – W. Olympia Dr ‡Δ	Signal	B	10.4	B	13.8	N/A
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr ‡♦	Signal	B	17.5	C	20.7	N/A
10. Brunswick Rd / SR 49 EB Ramps ‡▲	Signal	B	12.0	B	12.4	N/A
11. Brunswick Rd / Sutton Way ‡▲	Signal	B	11.8	C	22.4	N/A
12. Brunswick Rd / Idaho Maryland Rd ‡●	EB/WB Stop					Yes
NB Left		A	8.6	A	9.2	
SB Left		A	8.5	A	8.8	
EB		B	11.6	B	14.0	
WB		**F**	**73.7**	**F**	**61.8**	
13. Brunswick Rd / Whispering Pines Ln ‡●	EB Stop					Yes
NB Left		A	8.9	A	9.1	
EB		B	12.5	C	16.3	
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd †●	AWS	C	23.7	C	19.5	Yes
15. Brunswick Rd / SR 174 †●	SB Stop					Yes
SB		C	16.6	**F**	**72.9**	
EB Left		A	8.1	A	7.9	
16. Brunswick Rd / Project Driveway †●	EB Stop	Not Studied				

AWS – all way stop
Bold indicates intersection operates below threshold
† Nevada County
‡Grass Valley

◊ 8:00 – 9:00 a.m. / 4:30 – 5:30 p.m.
♦ 8:00 – 9:00 a.m. / 4:15 – 5:15 p.m.
● 7:45 – 8:45 a.m. / 4:30 – 5:30 p.m.

Δ 8:00 – 9:00 a.m. / 3:30 – 5:30 p.m.
▲ 8:00 – 9:00 a.m. / 3:45 – 4:45 p.m.

TABLE 4A (continued)
EXISTING LEVELS OF SERVICE AT INTERSECTIONS
(PEAK HOURS)

Location	Control	AM Peak Hour		PM Peak Hour		Meets Peak Hour Warrant?
		LOS	Average Delay	LOS	Average Delay	
17. E. Bennett Rd / Millsite Rd †●	NB Stop	Not Studied				
18. Whispering Pines Ln / Centennial Site Driveway ‡◊	NB Stop	Not Studied				
19. Idaho Maryland Rd / Centennial Dr ‡Δ NB WB Left	NB Stop	 B A	 12.1 8.3	 **F** A	 **59.1** 8.3	No
20. Idaho Maryland Rd /Sutton Way ‡Δ	AWS	A	9.2	B	12.4	No
21. Sutton Way / Dorsey Dr ‡Δ	AWS	A	8.8	B	11.7	No
22. Dorsey Dr / SR 49 EB Ramps ‡Δ	Signal	B	12.6	B	13.7	N/A
23. Dorsey Dr / SR 49 WB Ramps ‡Δ	Signal	A	6.5	A	8.8	N/A
24. Brunswick Rd / Loma Rica Dr†□	Signal	B	17.9	B	13.0	N/A

AWS – all way stop
Bold indicates intersection operates below threshold
† Nevada County
‡Grass Valley

◊ 8:00 – 9:00 a.m. / 4:30 – 5:30 p.m.
♦ 8:00 – 9:00 a.m. / 4:15 – 5:15 p.m.
● 7:45 – 8:45 a.m. / 4:30 – 5:30 p.m.

Δ 8:00 – 9:00 a.m. / 3:30 – 5:30 p.m.
▲ 8:00 – 9:00 a.m. / 3:45 – 4:45 p.m.
□ 8:00 – 9:00 a.m. / 5:00 – 6:00 p.m.

TABLE 4B
EXISTING LEVELS OF SERVICE AT INTERSECTIONS
(PROJECT TRAFFIC HOURS)

Location	Control	6:30 – 7:30 AM		3:30 – 4:30 PM		6:30 – 7:30 PM		Meets Traffic Signal Warrant?
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
1. Neal St / Tinloy St ‡	Signal	A	4.8	A	8.3	A	6.6	N/A
2. S. Auburn St / Tinloy St ‡	Signal	A	6.1	A	8.7	A	7.0	N/A
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp ‡	SB / WB Stop	A	3.9	A	6.1	A	4.1	Yes*
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp ‡	AWS	A	9.2	B	14.8	B	10.1	No
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps ‡	Roundabout	A	4.5	A	6.6	A	4.3	N/A
6. Idaho Maryland Rd / SR 49 EB Ramps ‡	AWS	B	13.5	C	18.2	A	9.5	No
7. Idaho Maryland Rd / Railroad Ave ‡	AWS	B	10.7	C	15.9	A	8.5	No
8. E. Main St / Brunswick Rd – W. Olympia Dr ‡	Signal	A	5.8	B	13.3	A	8.7	N/A
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr ‡	Signal	B	16.6	B	19.8	B	16.7	N/A
10. Brunswick Rd / SR 49 EB Ramps ‡	Signal	A	8.6	B	13.2	A	9.2	N/A
11. Brunswick Rd / Sutton Way ‡	Signal	A	4.8	C	21.3	A	9.1	N/A
12. Brunswick Rd / Idaho Maryland Rd ‡								
NB Left	EB/WB Stop	A	8.0	A	9.0	A	8.0	Yes*
SB Left		A	7.8	A	8.8	A	7.8	
EB		B	10.3	B	13.7	B	10.6	
WB		C	17.1	**F**	**70.7**	B	14.6	
13. Brunswick Rd / Whispering Pines Ln ‡								
NB Left	EB Stop	A	8.4	A	9.0	A	8.3	Yes*
EB		B	10.8	B	14.1	B	10.5	
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd †	AWS	B	10.6	C	17.4	B	10.5	Yes*
15. Brunswick Rd / SR 174 †								
SB	SB Stop	B	12.5	**E**	**35.1**	B	12.5	Yes*
EB Left		A	7.6	A	7.8	A	7.4	
16. Brunswick Rd / Project Driveway †	EB Stop	Not Studied						

AWS – all way stop
Bold indicates intersection operates below threshold
† Nevada County
‡Grass Valley
* meets warrant in 3:30 p.m. hour

TABLE 4B (continued)
EXISTING LEVELS OF SERVICE AT INTERSECTIONS
(PROJECT TRAFFIC HOURS)

Location	Control	6:30 – 7:30 AM		3:30 – 4:30 PM		6:30 – 7:30 PM		Meets Traffic Signal Warrant?
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
17. E. Bennett Rd / Millsite Rd †	NB Stop	Not Studied						
18. Whispering Pines Ln / Centennial Site Driveway ‡	NB Stop	Not Studied						
19. Idaho Maryland Rd / Centennial Dr ‡ NB WB Left	NB Stop	B A	11.3 8.2	**F** A	**59.1** 8.3	B A	10.1 7.6	No
20. Idaho Maryland Rd /Sutton Way ‡	AWS	A	8.1	B	12.4	A	8.0	No
21. Sutton Way / Dorsey Dr ‡	AWS	A	8.0	B	11.8	A	8.2	No
22. Dorsey Dr / SR 49 EB Ramps ‡	Signal	A	7.9	B	13.6	A	7.8	N/A
23. Dorsey Dr / SR 49 WB Ramps ‡	Signal	A	3.7	A	9.1	A	5.3	N/A
24. Brunswick Rd / Loma Rica Dr†	Signal	B	11.8	B	13.9	A	8.0	N/A

AWS – all way stop
Bold indicates intersection operates below threshold
† Nevada County
‡Grass Valley

Intersection Queues. The quality of traffic flow can also be affected by queuing. 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.

Tables 5A and 5B present information regarding current queuing each study intersection 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 highlighted. The 95th percentile queue exceeds available storage in 14 locations at nine intersections. The intersections of Neal Street at Tinloy Street and Tinloy Street at S. Auburn Street have queues that exceed the available storage and back up through the adjacent intersection. Similar conditions also exist at the westbound approach of the Idaho Maryland Rd / SR 49 EB Ramps intersection and the eastbound approach of Brunswick Road at SR 49 Westbound Off-Ramp - Maltman Drive intersection. It is assumed that one additional vehicle (25') can store in the available left or right turn taper and this occurs at three locations. Finally, the westbound left turn queues along Loma Rica Drive at Brunswick Road will exceed the available 100-foot storage lane. This movement is part of a protected westbound phase that includes a westbound right turn overlap. Based on the intersection level of service it appears that while the left turn queue will exceed the left turn lane the right turn overlap will continually clear the queues.

TABLE 5A
EXISTING QUEUES
(PEAK HOURS)

Location	Length*	AM Peak Hour Queue (feet)	PM Peak Hour Queue (feet)
1. Neal St / Tinloy St			
EB	70	115	118
WB	150	265	168
2. S. Auburn St / Tinloy St			
NB through	80	153	135
NB through-left	80	93	76
SB	75	99	138
WB	95	115	120
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp			
NB left turn	60	35	41
NB through	150	65	63
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp			
SB left turn	60	33	40
SB through	150	63	103

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 5A (continued)
EXISTING QUEUES
(PEAK HOURS)

Location	Length*	AM Peak Hour Queue (feet)	PM Peak Hour Queue (feet)
4. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps			
NB	---	26	26
SB	---	34	41
EB	---	84	54
WB	---	53	72
5. Idaho Maryland Rd / SR 49 EB Ramps			
NB right	---	170	45
NB left	355	90	48
WB	90	60	260
6. Idaho Maryland Rd / Railroad Ave			
EB	90	88	60
7. E. Main St / Brunswick Rd – W. Olympia Dr			
NB left	110	---	<25
NB right	125	76	117
SB left (2 lanes)	355	111	172
WB left (2 lanes)	150	91	94
WB right	150	95	150
8. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr			
NB left	100	50	83
NB right	100	74	152
SB left (2 lanes)	260	167	208
SB right	260	76	75
EB	160	145	201
WB left	145	99	106
9. Brunswick Rd / SR 49 EB Ramps			
NB left	200	221	213
NB right	---	209	231
10. Brunswick Rd / Sutton Way			
NB left (2 lanes)	280	94	250
SB left	190	65	104
SB right	180	---	---
EB left (2 lanes)	185	90	122
EB right	250	96	160
WB left	125	87	145

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 5A (continued)
EXISTING QUEUES
(PEAK HOURS)

Location	Length*	AM Peak Hour Queue (feet)	PM Peak Hour Queue (feet)
11. Brunswick Rd / Idaho Maryland Rd			
NB left	540	<25	<25
SB left	120	<25	<25
EB right	---	<25	38
WB left	60	113	58
12. Brunswick Rd / Whispering Pines Ln			
NB left	210	<25	<25
EB left	110	<25	28
13. Brunswick Rd / E. Bennett Rd – Greenhorn Rd			
NB left	225	<25	<25
SB left	260	<25	<25
EB	---	<25	<25
WB	---	55	<25
14. Brunswick Rd / SR 174			
SB left	90	48	345
EB left	130	<25	<25
19. Idaho Maryland Rd / Centennial Dr			
NB	---	<25	233
WB left	130	<25	<25
20. Idaho Maryland Rd /Sutton Way			
SB right	90	<25	38
SB left	---	<25	<25
ÈB	---	33	70
WB	---	28	55
21. Sutton Way / Dorsey Dr			
SB right	120	<25	30
SB thru	---	<25	35
NB	---	25	55
EB	---	<25	53
22. Dorsey Dr / SR 49 EB Ramps			
NB Left (2 lanes)	215	204	108
NB right	215	55	43
EB left	180	99	151

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 5A (continued)
EXISTING QUEUES
(PEAK HOURS)

Location	Length*	AM Peak Hour Queue (feet)	PM Peak Hour Queue (feet)
23. Dorsey Dr / SR 49 EB Ramps			
SB right	400	70	59
SB left-thru	400	62	84
EB right	155	51	120
WB left	180	58	96
24. Brunswick Rd / Loma Rica Dr			
NB right	410	33	<25
SB left	400	212	96
WB left	100	59	121

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 5B
EXISTING QUEUES
(PROJECT TRAFFIC HOURS)

Location	Length*	6:30 – 7:30 AM Queue (feet)	3:30 – 4:30 PM Queue (feet)	6:30 – 7:30 PM Queue (feet)
1. Neal St / Tinloy St				
EB	70	59	104	97
WB	150	81	125	87
2. S. Auburn St / Tinloy St				
NB through	80	63	117	74
NB through-left	80	55	74	55
SB	75	69	109	99
WB	95	84	97	74
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp				
NB left turn	60	27	39	32
NB through	150	44	58	48
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp				
SB left turn	60	<25	38	<25
SB through	150	<25	90	<25
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps				
NB	---	<25	<25	<25
SB	---	<25	47	<25
EB	---	29	55	27
WB	---	<25	52	26
6. Idaho Maryland Rd / SR 49 EB Ramps				
NB right	---	105	45	<25
NB left	355	30	58	<25
WB	90	<25	153	30
7. Idaho Maryland Rd / Railroad Ave				
EB	90	73	75	<25
8. E. Main St / Brunswick Rd – W. Olympia Dr				
NB left	110	<25	<25	<25
NB right	125	40	117	56
SB left (2 lanes)	355	57	183	98
WB left (2 lanes)	150	42	90	60
WB right	150	60	145	66
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr				
NB left	100	<25	80	51
NB right	100	30	128	83
SB left (2 lanes)	260	130	191	136
SB right	260	52	86	53
EB	160	49	202	122
WB left	145	60	107	51

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches Queuing distances based on stochastic modeling

TABLE 5B (continued)
EXISTING QUEUES
(PROJECT TRAFFIC HOURS)

Location	Length*	6:30 – 7:30 AM Queue (feet)	3:30 – 4:30 PM Queue (feet)	6:30 – 7:30 PM Queue (feet)
10. Brunswick Rd / SR 49 EB Ramps				
NB left	200	147	218	178
NB right	---	93	236	87
11. Brunswick Rd / Sutton Way				
NB left (2 lanes)	280	47	245	109
SB left	190	39	100	56
SB right	180	---	---	---
EB left (2 lanes)	185	56	117	65
EB right	250	44	160	82
WB left	125	43	145	68
12. Brunswick Rd / Idaho Maryland Rd				
NB left	540	<25	<25	<25
SB left	120	<25	<25	<25
EB right	---	<25	35	<25
WB left	60	<25	60	<25
13. Brunswick Rd / Whispering Pines Ln				
NB left	210	<25	<25	<25
EB left	110	<25	<25	<25
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd				
NB left	225	<25	<25	<25
SB left	260	<25	<25	<25
EB	---	<25	<25	<25
WB	---	<25	<25	<25
15. Brunswick Rd / SR 174				
SB left	90	25	198	43
EB left	130	<25	<25	<25
16. Brunswick Rd / Project Driveway				
NB left	TWLTL	---	---	---
19. Idaho Maryland Rd / Centennial Dr				
NB	---	<25	233	<25
WB left	130	<25	<25	<25
20. Idaho Maryland Rd /Sutton Way				
SB right	90	<25	38	<25
SB left	---	<25	<25	<25
ÈB	---	<25	70	<25
WB	---	<25	55	<25

Highlighted values indicate queue length in excess of available storage

* - longest lane for multiple turn lane approaches Queuing distances based on stochastic modeling

TABLE 5B (continued)
EXISTING QUEUES
(PROJECT TRAFFIC HOURS)

Location	Length*	6:30 – 7:30 AM Queue (feet)	3:30 – 4:30 PM Queue (feet)	6:30 – 7:30 PM Queue (feet)
21. Sutton Way / Dorsey Dr				
SB right	120	<25	38	<25
SB thru	---	<25	35	<25
NB	---	<25	55	<25
EB	---	<25	55	<25
22. Dorsey Dr / SR 49 EB Ramps				
NB Left (2 lanes)	215	100	104	58
NB right	215	30	40	38
EB left	180	58	141	61
23. Dorsey Dr / SR 49 EB Ramps				
SB right	400	46	61	44
SB left-thru	400	26	91	48
EB right	155	37	123	42
WB left	180	46	101	53
24. Brunswick Rd / Loma Rica Dr				
NB right	410	32	26	<25
SB left	400	131	132	63
WB left	100	32	159	35

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

Existing Roadway Segment Levels of Service. Table 6 summarizes the Levels of Service based on the current traffic volumes on study area roads with the existing roadway configuration. Applicable Level of Service thresholds and roadway classifications are presented.

The Levels of Service along Brunswick Road, E. Bennett Road and SR 174 were computed using the HCS two-lane roadway methodology. All segments along Brunswick Road and E. Bennett Road operate at LOS D or better while the SR 174 segment operates at LOS E. The SR 174 segment exceeds the LOS C threshold in both directions.

TABLE 6
EXISTING ROADWAY SEGMENT LEVELS OF SERVICE

Roadway	Location	Facility Classification	ATS/PTSF/LOS Existing PM Peak Hour
Brunswick Rd	SR 49 to Whispering Pines Ln	Class I Highway	
	NB		31.8 / 75.6 / D
	SB		31.7 / 76.3 / D
	Whispering Pines Ln to E. Bennett Rd	Class I Highway	
	NB		37.4 / 67.0 / C
	SB		36.6 / 82.6 / D
	E. Bennett Rd to Project Driveway	Class I Highway	
	NB		35.7 / 60.4 / C
	SB		35.7 / 76.9 / C
	Project Driveway to SR 174	Class I Highway	
	NB		34.1 / 66.4 / C
	SB		33.4 / 80.2 / D
E. Bennett Rd	Project Driveway to Brunswick Rd	Class III Highway	
	EB		35.4 / 35.4 / B
	WB		36.3 / 50.3 / B
SR 174	Brunswick Rd to Empire St	Class I Highway	
	EB		**30.3 / 59.6 / E**
	WB		**29.3 / 77.2 / E**

ATS – average travel speed
PTSF – percent time spent following
LOS – level of service
Bold indicates LOS threshold exceeded

IV. EXISTING PLUS APPROVED PROJECTS [EPAP]

The analysis of the near-term cumulative condition is intended to consider the impact of projects that are approved or are reasonably foreseeable in the next five years. This is referred to as the "Existing Plus Approved Projects" (EPAP) scenarios. Nevada County and City of Grass Valley staff were contacted to identify any approved or pending projects in the project vicinity.

Where available, trip generation developed for a project was assigned to the study intersections. When unavailable, KD Anderson & Associates used the best available information for those projects, generated trips for each and distributed and assigned trips to the study intersections. The Approved Projects traffic was then added to the existing volumes to develop the EPAP scenario. EPAP volumes are presented in Figure 5A through 5F. The following 11 projects were identified based on an approved project list provided by Nevada County and a project status log provided by Grass Valley.

1) **Guilded Springs** - The project is located on E. Main Street west of Bennett Road. The project consists of division of a 6.96-acre parcel into 27 single family residential lots;
2) **O-Reilly Auto Parts** - The project is located on Nevada City Highway north of Brunswick Road. It includes 8,694 square feet of retail use;
3) **740 Maltman Drive** - The project is located south of Brunswick Road and includes replacement of an existing 2,000 square foot building with a new 3,700 square foot professional office building;
4) **500 Idaho Maryland Road** - The project includes construction of two manufacturing buildings, one of which has already been completed, consisting of 22,500 square feet. The site is located east of Railroad Avenue;
5) **River Valley Bank** - The project includes construction of two buildings, a 3,500 square foot bank which has already been completed and a new 1,450 square foot professional office building;
6) **634 Town Talk Road** includes division of a 1.36-acre parcel into 11 lots in an R-3 zone. The project is located just east of Brunswick Road in the vicinity of the SR 49 interchange;
7) **130 Crown Point Circle** - This project is located in the Whispering Pines Specific Plan zone and includes construction of a 6,889 square foot dental office (medical office building);
8) **Loma Rica Ranch** - This includes the first phase of the Loma Rica Ranch Specific Plan (LRRSP). The LRRSP area includes lands between Sutton Way to east of Brunswick Road north of Idaho Maryland Road. This first phase includes 175 single family residential units and 60 duplex/ townhome lots. Phase 1 is scheduled to begin construction in the Spring 2021;
9) **Dorsey Marketplace** - This project considered two alternative site plans. Alternative A included commercial development of 181,900 square feet, construction of 90 multiple-family residential units and a 3,200 square foot clubhouse. Alternative B provided up to

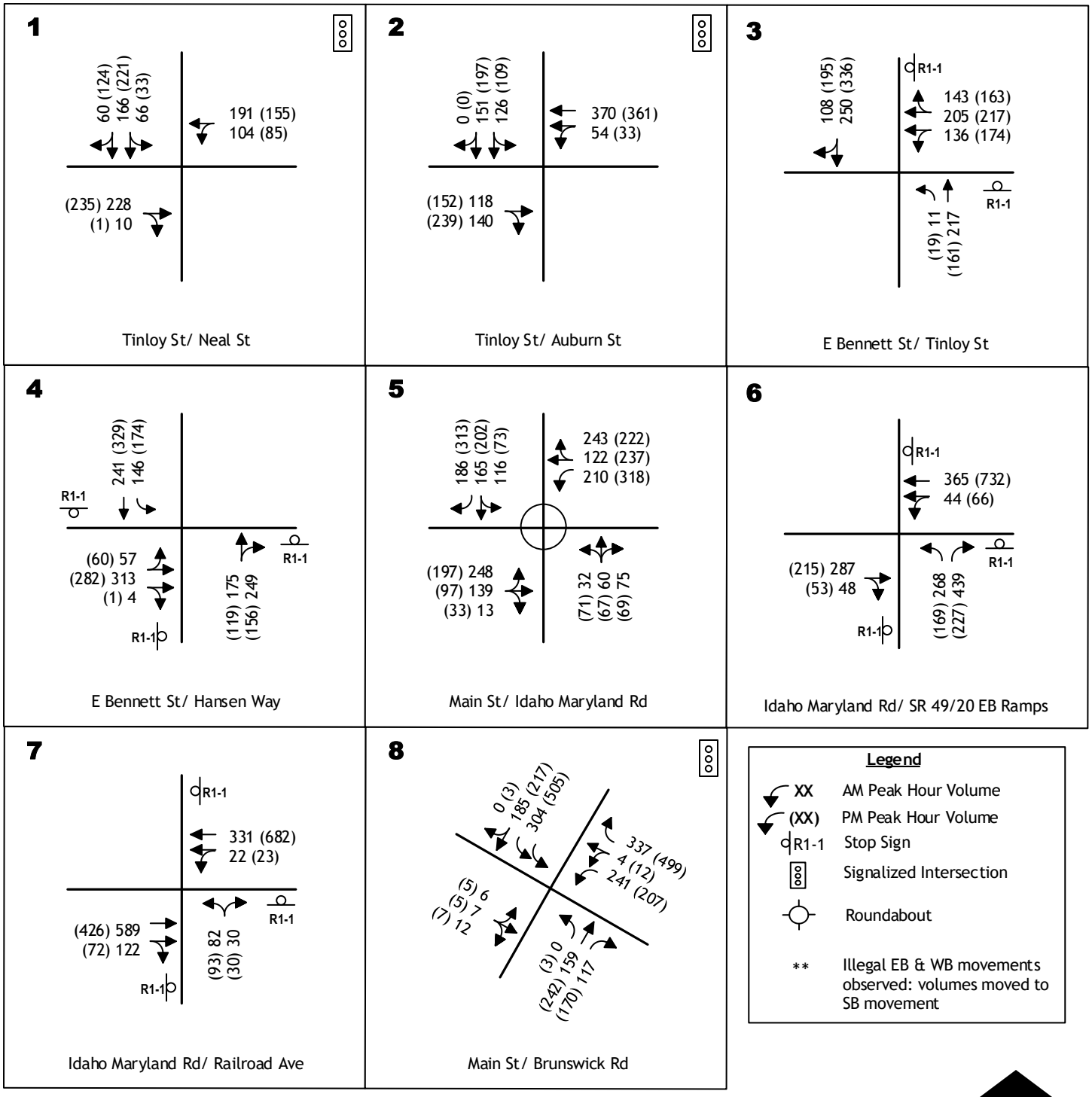
172 apartments, a 3,200-square foot clubhouse, approximately 104,350 square feet of commercial space and approximately 8,500 square feet of office space. The worst-case trip generation for this site, Alternative A, was used;

10) **South Woodlands** - This project is located on Greenhorn Road east of Brunswick Road. The project consists of development of 30 single family residential lots;

11) **Tranquility Lane Estates** - This project is located on Idaho Maryland Road east of Brunswick Road. The project consists of development of 9 single family residential lots.

Intersection Levels of Service. The identified EPAP volumes were used to recalculate operating Levels of Service at the study intersections. No improvements to the study area intersections were identified. Tables 7A and 7B summarize operating Levels of Service at the study area intersections for each of the five time periods described. Three intersections will continue to operate at unacceptable Levels of Service, at LOS E or F. These include Brunswick Road at Idaho Maryland Road where the westbound approach operates at LOS F, Brunswick Road at SR 174 where the southbound approach operates at LOS F and Idaho Maryland Road at Centennial Drive where the northbound approach operates at LOS F.

Seven intersections will meet the peak hour signal warrant. These include E. Bennett Road at Tinloy Street, Idaho Maryland Road at SR 49/20 EB Ramps, Brunswick Road at Idaho Maryland Road, Brunswick Road at Whispering Pines Lane, Brunswick Road at E. Bennett Road, Brunswick Road at SR 174 and Idaho Maryland Road at Centennial Drive. As identified above, the Brunswick Road / Idaho Maryland Road intersection, Brunswick Road / SR 174 intersection and Idaho Maryland Road at Centennial Drive intersection also operate below the accepted LOS D threshold.

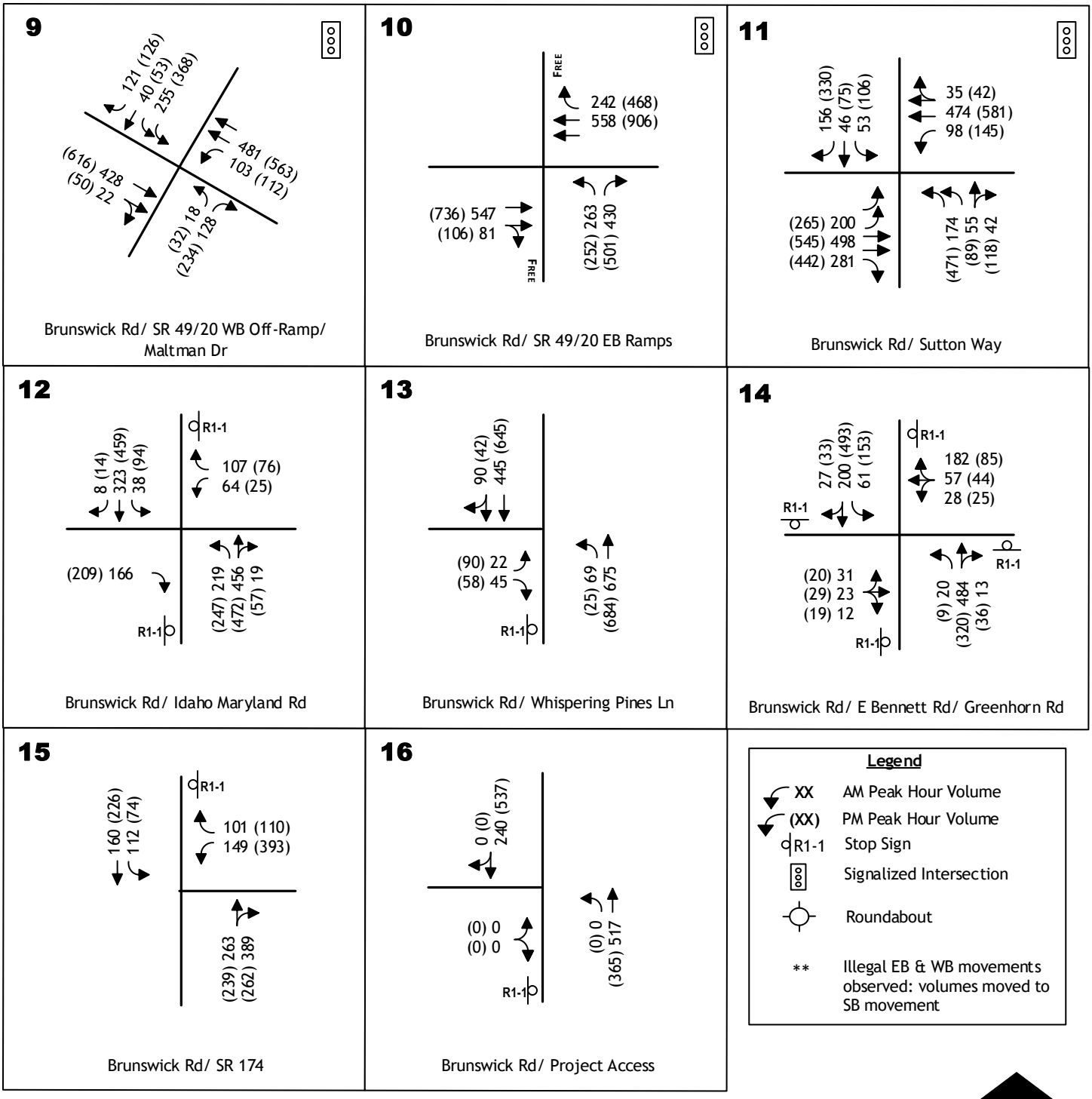


AM/PM PEAK HOURS EXISTING PLUS APPROVED PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS

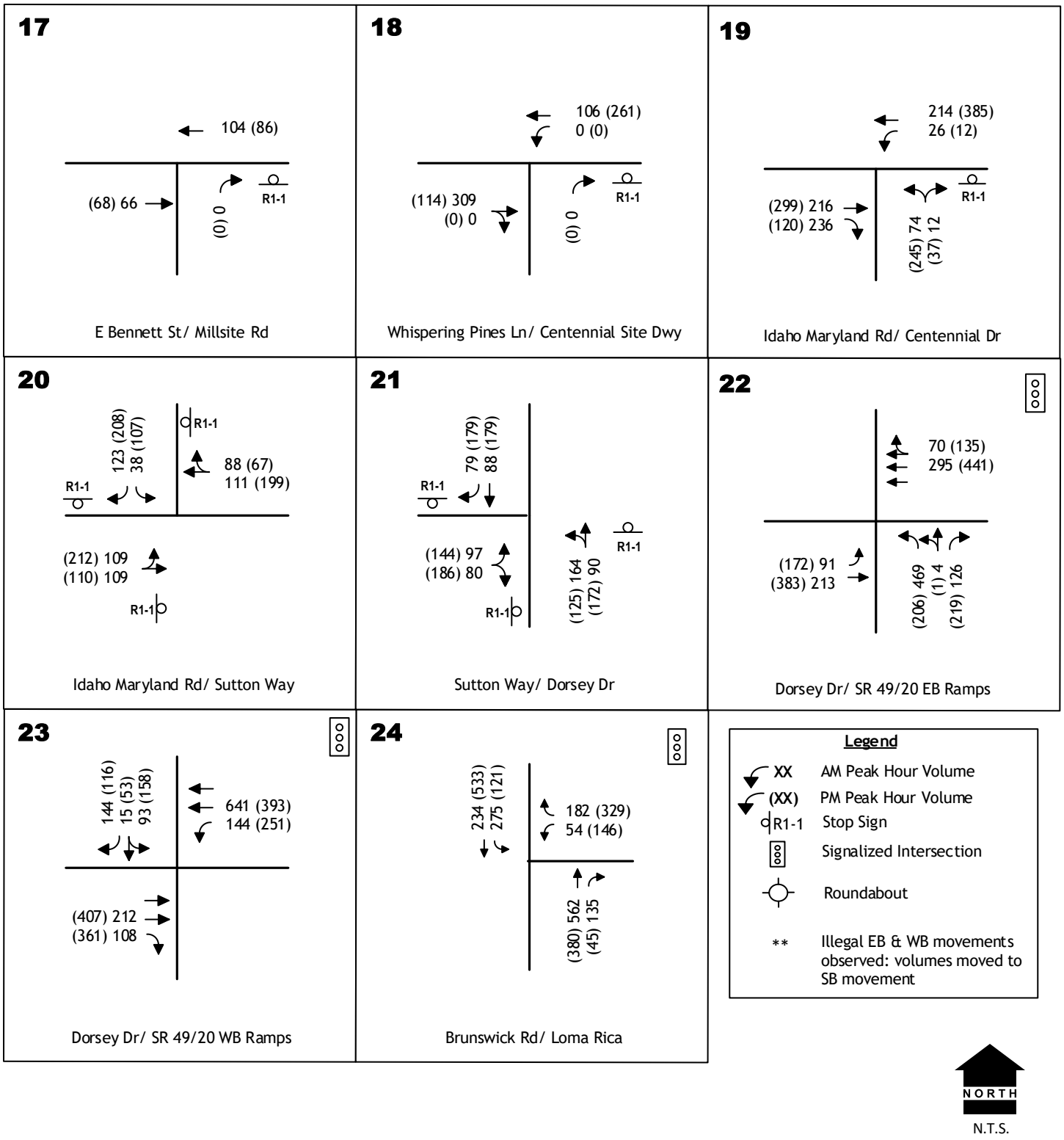
KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 5a



AM/PM PEAK HOURS EXISTING PLUS APPROVED PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS

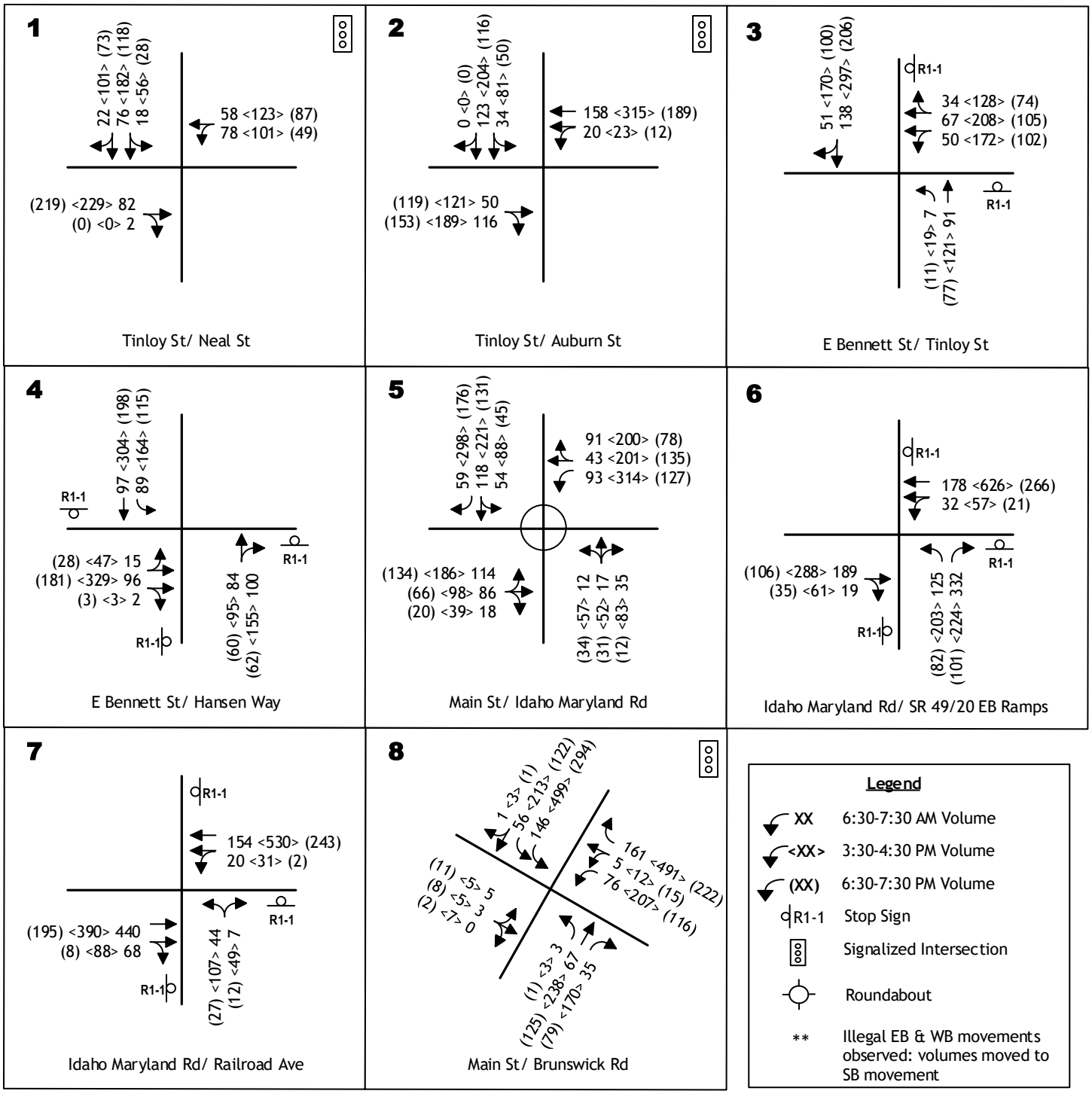


AM/PM PEAK HOURS EXISTING PLUS APPROVED PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 5c

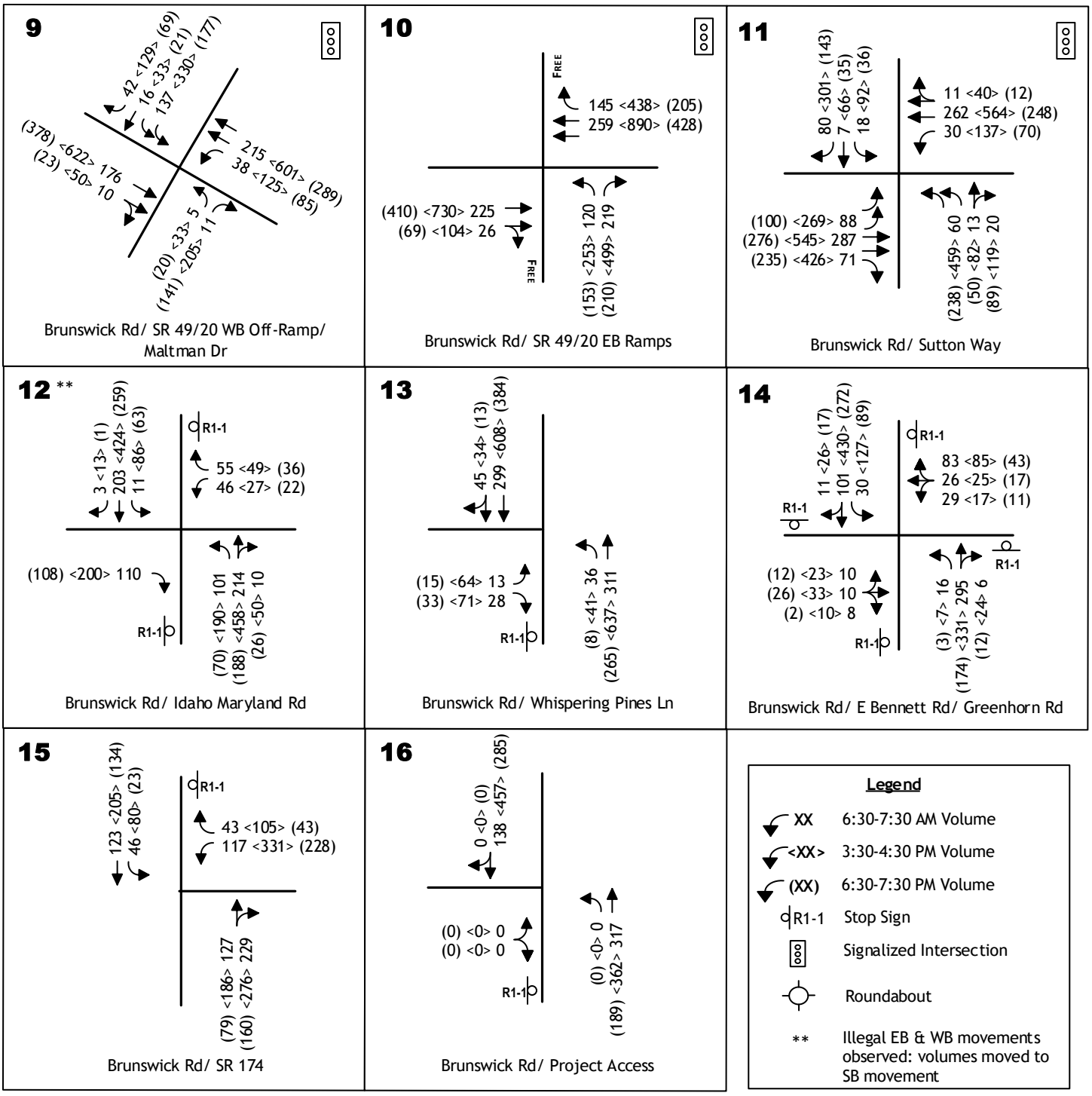


PROJECT TRAFFIC HOURS
EXISTING PLUS APPROVED PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

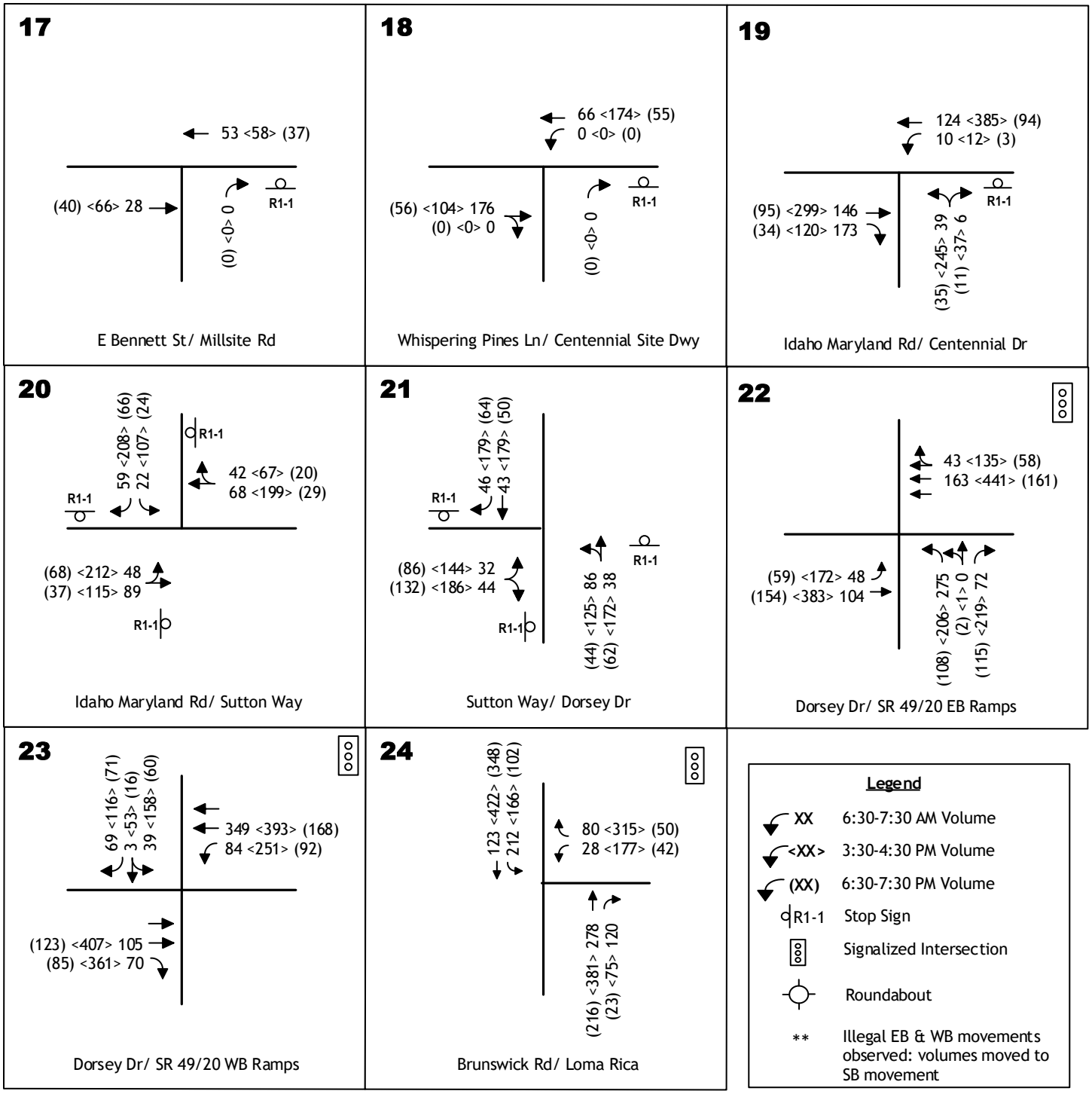
5875-01 RA 3/29/2021

figure 5d



PROJECT TRAFFIC HOURS
EXISTING PLUS APPROVED PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers



PROJECT TRAFFIC HOURS
EXISTING PLUS APPROVED PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 5f

TABLE 7A
EPAP LEVELS OF SERVICE AT INTERSECTIONS
(PEAK HOURS)

Location	Control	EPAP AM Peak Hour		EPAP PM Peak Hour		Meets Peak Hour Warrant?
		LOS	Average Delay	LOS	Average Delay	
1. Neal St / Tinloy St ‡◊	Signal	B	12.6	B	11.5	N/A
2. S. Auburn St / Tinloy St ‡◊	Signal	A	9.8	B	10.5	N/A
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp ‡◊	SB / WB Stop	A	6.1	A	7.4	Yes
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp ‡◊	AWS	C	19.7	C	15.9	No
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps ‡◊	Roundabout	A	7.6	A	7.3	N/A
6. Idaho Maryland Rd / SR 49 EB Ramps ‡◊	AWS	C	23.4	D	31.2	Yes
7. Idaho Maryland Rd / Railroad Ave ‡◊	AWS	B	13.0	C	19.6	No
8. E. Main St / Brunswick Rd – W. Olympia Dr ‡Δ	Signal	B	10.4	B	14.7	N/A
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr ‡♦	Signal	B	17.4	C	21.4	N/A
10. Brunswick Rd / SR 49 EB Ramps ‡▲	Signal	B	12.7	B	13.5	N/A
11. Brunswick Rd / Sutton Way ‡▲	Signal	B	12.8	C	23.1	N/A
12. Brunswick Rd / Idaho Maryland Rd ‡● NB Left SB Left EB WB	EB/WB Stop	 A A B **F**	 8.7 8.5 11.9 **97.9**	 A A B **F**	 9.4 8.9 14.5 **90.7**	Yes
13. Brunswick Rd / Whispering Pines Ln ‡● NB Left EB	EB Stop	 A B	 9.0 12.8	 A C	 9.2 17.1	Yes
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd †●	AWS	D	29.1	C	22.0	Yes
15. Brunswick Rd / SR 174 †● SB EB Left	SB Stop	 C A	 17.1 8.1	 **F** A	 **78.6** 7.9	Yes

AWS – all way stop
Bold indicates intersection operates below threshold

† Nevada County
‡Grass Valley

TABLE 7A (continued)
EPAP LEVELS OF SERVICE AT INTERSECTIONS
(PEAK HOURS)

Location	Control	EPAP AM Peak Hour		EPAP PM Peak Hour		Meets Peak Hour Warrant?
		LOS	Average Delay	LOS	Average Delay	
16. Brunswick Rd / Project Driveway †●	EB Stop	Not Studied				
17. E. Bennett Rd / Millsite Rd †●	NB Stop	Not Studied				
18. Whispering Pines Ln / Centennial Site Driveway ‡◊	NB Stop	Not Studied				
19. Idaho Maryland Rd / Centennial Dr ‡Δ NB WB Left	NB Stop	B A	12.9 8.4	**F** A	**99.8** 8.5	Yes
20. Idaho Maryland Rd /Sutton Way ‡Δ	AWS	A	9.6	B	13.8	No
21. Sutton Way / Dorsey Dr ‡Δ	AWS	A	8.9	C	15.6	No
22. Dorsey Dr / SR 49 EB Ramps ‡Δ	Signal	B	15.0	B	13.6	N/A
23. Dorsey Dr / SR 49 WB Ramps ‡Δ	Signal	B	10.0	B	15.5	N/A
24. Brunswick Rd / Loma Rica Dr†□	Signal	B	18.7	B	13.8	N/A

AWS – all way stop
Bold indicates intersection operates below threshold
† Nevada County
‡Grass Valley

◊ 8:00 – 9:00 a.m. / 4:30 – 5:30 p.m.
♦ 8:00 – 9:00 a.m. / 4:15 – 5:15 p.m.
● 7:45 – 8:45 a.m. / 4:30 – 5:30 p.m.

Δ 8:00 – 9:00 a.m. / 3:30 – 5:30 p.m.
▲ 8:00 – 9:00 a.m. / 3:45 – 4:45 p.m.
□ 8:00 – 9:00 a.m. / 5:00 – 6:00 p.m.

TABLE 7B
EPAP LEVELS OF SERVICE AT INTERSECTIONS
(PROJECT TRAFFIC HOURS)

Location	Control	EPAP 6:30 – 7:30 AM		EPAP 3:30 – 4:30 PM		EPAP 6:30 – 7:30 PM		Meets Peak Hour Warrant?
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
1. Neal St / Tinloy St ‡	Signal	A	4.8	A	8.4	A	7.0	N/A
2. S. Auburn St / Tinloy St ‡	Signal	A	6.3	A	8.7	A	6.9	N/A
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp ‡	SB / WB Stop	A	3.8	A	6.4	A	4.2	Yes*
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp ‡	AWS	A	9.3	B	15.2	B	10.2	No
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps ‡	Roundabout	A	4.7	A	6.8	A	4.4	N/A
6. Idaho Maryland Rd / SR 49 EB Ramps ‡	AWS	B	14.9	C	22.6	A	9.9	Yes*
7. Idaho Maryland Rd / Railroad Ave ‡	AWS	B	11.0	C	16.5	A	8.7	No
8. E. Main St / Brunswick Rd – W. Olympia Dr ‡	Signal	A	6.1	B	13.7	A	9.0	N/A
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr ‡	Signal	B	15.9	B	19.8	B	16.5	N/A
10. Brunswick Rd / SR 49 EB Ramps ‡	Signal	A	9.1	B	13.5	A	9.0	N/A
11. Brunswick Rd / Sutton Way ‡	Signal	A	5.2	C	21.5	A	9.5	N/A
12. Brunswick Rd / Idaho Maryland Rd ‡								
NB Left	EB/WB Stop	A	8.0	A	9.0	A	8.0	Yes*
SB Left		A	7.8	A	8.8	A	7.9	
EB		B	10.4	B	14.1	B	10.7	
WB		C	17.9	**F**	**83.7**	C	15.3	
13. Brunswick Rd / Whispering Pines Ln ‡								
NB Left	EB Stop	A	8.4	A	9.1	A	8.3	Yes*
EB		B	10.9	B	14.5	B	10.6	
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd †	AWS	B	10.7	C	18.5	B	10.8	Yes*
15. Brunswick Rd / SR 174 †								
SB	SB Stop	B	12.5	**E**	**36.3**	B	12.6	Yes*
EB Left		A	7.6	A	7.8	A	7.4	

AWS – all way stop * meets warrant in 3:30 p.m. hour † Nevada County
Bold indicates intersection operates below threshold ‡Grass Valley

TABLE 7B (continued)
EPAP LEVELS OF SERVICE AT INTERSECTIONS
(PROJECT TRAFFIC HOURS)

Location	Control	EPAP 6:30 – 7:30 AM		EPAP 3:30 – 4:30 PM		EPAP 6:30 – 7:30 PM		Meets Peak Hour Warrant?
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
16. Brunswick Rd / Project Driveway †	EB Stop	Not Studied						
17. E. Bennett Rd / Millsite Rd †	NB Stop	Not Studied						
18. Whispering Pines Ln / Centennial Site Driveway ‡	NB Stop	Not Studied						
19. Idaho Maryland Rd / Centennial Dr ‡ NB WB Left	NB Stop	B A	11.3 8.2	**F** A	**99.8** 8.5	B A	10.2 7.6	No
20. Idaho Maryland Rd /Sutton Way ‡	AWS	A	8.1	B	13.9	A	8.1	No
21. Sutton Way / Dorsey Dr ‡	AWS	A	8.1	C	15.6	A	9.2	No
22. Dorsey Dr / SR 49 EB Ramps ‡	Signal	A	9.3	B	13.7	A	8.2	N/A
23. Dorsey Dr / SR 49 WB Ramps ‡	Signal	A	6.2	B	14.9	A	7.4	N/A
24. Brunswick Rd / Loma Rica Dr†	Signal	B	11.8	B	14.2	A	8.3	N/A

AWS – all way stop
Bold indicates intersection operates below threshold
† Nevada County
‡Grass Valley

Intersection Queues. Tables 8A and 8B present information regarding queuing at each study intersection under EPAP conditions. 95th percentile queues with lengths exceeding the available storage are highlighted. The 95th percentile queue exceeds available storage in 19 locations at 13 intersections. The intersections of Neal Street at Tinloy Street and Tinloy Street at S. Auburn Street have queues that exceed the available storage and back up through the adjacent intersection. Similar conditions also exist at the westbound approach of the Idaho Maryland Road / SR 49 EB Ramps intersection and the eastbound approach of Brunswick Road at SR 49 Westbound Off-Ramp - Maltman Drive intersection. It is assumed that one additional vehicle (25') can store in the available left or right turn taper and this occurs at three locations. The westbound left turn lane at the Brunswick Road / Loma Rica Drive intersection will continue to have a queue exceeding the turn lane length. Based on the intersection LOS, it is expected that the queue will dissipate each signal cycle.

TABLE 8A
EPAP QUEUES
(PEAK HOURS)

Location	Length*	AM Peak Hour Queue (feet)	PM Peak Hour Queue (feet)
1. Neal St / Tinloy St			
EB	70	113	119
WB	150	226	185
2. S. Auburn St / Tinloy St			
NB through	80	144	154
NB through-left	80	91	77
SB	75	104	140
WB	95	110	120
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp			
NB left turn	60	32	43
NB through	150	66	65
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp			
SB left turn	60	33	40
SB through	150	65	110
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps			
NB	---	28	28
SB	---	36	44
EB	---	91	59
WB	---	54	79
6. Idaho Maryland Rd / SR 49 EB Ramps			
NB right	---	205	63
NB left	355	95	50
WB	90	78	338
7. Idaho Maryland Rd / Railroad Ave			
EB	90	103	83

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches Queuing distances based on stochastic modeling

TABLE 8A (continued)
EPAP QUEUES
(PEAK HOURS)

Location	Length*	AM Peak Hour Queue (feet)	PM Peak Hour Queue (feet)
8. E. Main St / Brunswick Rd – W. Olympia Dr			
NB left	110	---	<25
NB right	125	70	130
SB left (2 lanes)	355	108	187
WB left (2 lanes)	150	90	93
WB right	150	101	152
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr			
NB left	100	52	79
NB right	100	80	161
SB left (2 lanes)	260	170	200
SB right	260	79	81
EB	160	147	211
WB left	145	105	101
10. Brunswick Rd / SR 49 EB Ramps			
NB left	200	230	220
NB right	---	212	249
11. Brunswick Rd / Sutton Way			
NB left (2 lanes)	280	109	263
SB left	190	66	118
SB right	180	---	---
EB left (2 lanes)	185	92	126
EB right	250	97	159
WB left	125	90	157
12. Brunswick Rd / Idaho Maryland Rd			
NB left	540	<25	<25
SB left	120	<25	<25
EB right	---	25	43
WB left	60	133	73
13. Brunswick Rd / Whispering Pines Ln			
NB left	210	<25	<25
EB left	110	<25	30
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd			
NB left	225	<25	<25
SB left	260	<25	28
EB	---	<25	<25
WB	---	55	28

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 8A (continued)
EPAP QUEUES
(PEAK HOURS)

Location	Length*	AM Peak Hour Queue (feet)	PM Peak Hour Queue (feet)
15. Brunswick Rd / SR 174			
SB left	90	53	363
EB left	130	<25	<25
19. Idaho Maryland Rd / Centennial Dr			
NB	---	<25	315
WB left	130	<25	<25
20. Idaho Maryland Rd /Sutton Way			
SB right	90	<25	45
SB left	---	<25	<25
ÈB	---	38	95
WB	---	30	63
21. Sutton Way / Dorsey Dr			
SB right	120	<25	38
SB thru	---	<25	43
NB	---	25	98
EB	---	<25	110
22. Dorsey Dr / SR 49 EB Ramps			
NB Left (2 lanes)	215	207	109
NB right	215	93	95
EB left	180	98	153
23. Dorsey Dr / SR 49 EB Ramps			
SB right	400	72	64
SB left-thru	400	108	161
EB right	155	80	202
WB left	180	126	186
24. Brunswick Rd / Loma Rica Dr			
NB right	410	33	<25
SB left	400	212	102
WB left	100	54	125

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 8B
EPAP QUEUES
(PROJECT TRAFFIC HOURS)

Location	Length*	EPAP 6:30 – 7:30 AM Queue (feet)	EPAP 3:30 – 4:30 PM Queue (feet)	EPAP 6:30 – 7:30 PM Queue (feet)
1. Neal St / Tinloy St				
EB	70	67	105	99
WB	150	86	139	95
2. S. Auburn St / Tinloy St				
NB through	80	78	115	78
NB through-left	80	55	76	53
SB	75	78	109	101
WB	95	84	99	79
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp				
NB left turn	60	27	41	31
NB through	150	46	54	47
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp				
SB left turn	60	<25	38	<25
SB through	150	<25	95	35
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps				
NB	---	<25	26	<25
SB	---	<25	49	<25
EB	---	30	58	28
WB	---	<25	53	26
6. Idaho Maryland Rd / SR 49 EB Ramps				
NB right	---	120	55	<25
NB left	355	33	63	<25
WB	90	30	203	33
7. Idaho Maryland Rd / Railroad Ave				
EB	90	75	80	<25
8. E. Main St / Brunswick Rd – W. Olympia Dr				
NB left	110	<25	<25	<25
NB right	125	43	119	60
SB left (2 lanes)	355	60	179	99
WB left (2 lanes)	150	45	90	61
WB right	150	54	153	71
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr				
NB left	100	<25	75	57
NB right	100	32	135	85
SB left (2 lanes)	260	117	191	136
SB right	260	47	86	52
EB	160	47	210	123
WB left	145	62	107	89

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 8B (continued)
EPAP QUEUES
(PROJECT TRAFFIC HOURS)

Location	Length*	EPAP 6:30 – 7:30 AM Queue (feet)	EPAP 3:30 – 4:30 PM Queue (feet)	EPAP 6:30 – 7:30 PM Queue (feet)
10. Brunswick Rd / SR 49 EB Ramps				
NB left	200	165	225	177
NB right	---	93	245	91
11. Brunswick Rd / Sutton Way				
NB left (2 lanes)	280	56	241	110
SB left	190	43	102	55
SB right	180	---	---	---
EB left (2 lanes)	185	59	124	67
EB right	250	45	150	87
WB left	125	44	144	69
12. Brunswick Rd / Idaho Maryland Rd				
NB left	540	<25	<25	<25
SB left	120	<25	<25	<25
EB right	---	<25	40	<25
WB left	60	25	68	<25
13. Brunswick Rd / Whispering Pines Ln				
NB left	210	<25	<25	<25
EB left	110	<25	<25	<25
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd				
NB left	225	<25	<25	<25
SB left	260	<25	<25	<25
EB	---	<25	<25	<25
WB	---	<25	<25	<25
15. Brunswick Rd / SR 174				
SB left	90	25	205	43
EB left	130	<25	<25	<25
19. Idaho Maryland Rd / Centennial Dr				
NB	---	<25	315	<25
WB left	130	<25	<25	<25
20. Idaho Maryland Rd /Sutton Way				
SB right	90	<25	45	<25
SB left	---	<25	<25	<25
ÈB	---	<25	98	<25
WB	---	<25	63	<25

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 8B (continued)
EPAP QUEUES
(PROJECT TRAFFIC HOURS)

Location	Length*	EPAP 6:30 – 7:30 AM Queue (feet)	EPAP 3:30 – 4:30 PM Queue (feet)	EPAP 6:30 – 7:30 PM Queue (feet)
21. Sutton Way / Dorsey Dr				
SB right	120	<25	38	<25
SB thru	---	<25	43	<25
NB	---	<25	98	<25
EB	---	<25	110	40
22. Dorsey Dr / SR 49 EB Ramps				
NB Left (2 lanes)	215	112	104	56
NB right	215	41	98	48
EB left	180	60	155	56
23. Dorsey Dr / SR 49 EB Ramps				
SB right	400	50	58	48
SB left-thru	400	53	154	67
EB right	155	36	199	41
WB left	180	81	184	84
24. Brunswick Rd / Loma Rica Dr				
NB right	410	31	26	<25
SB left	400	133	135	64
WB left	100	32	160	35

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

EPAP Roadway Segment Levels of Service. Table 9 summarizes the Levels of Service based on the EPAP traffic volumes on study area roads with the existing roadway configuration. All segments along Brunswick Road and E. Bennett Road will continue to operate at LOS D or better while the SR 174 segment will continue to operate at LOS E. The SR 174 segment exceeds the LOS C threshold in both directions.

TABLE 9
EPAP ROADWAY SEGMENT LEVELS OF SERVICE

Roadway	Location	Facility Classification	ATS/PTSF/LOS EPAP PM Peak Hour
Brunswick Rd	SR 49 to Whispering Pines Ln	Class I Highway	
	NB		31.5 / 76.4 / D
	SB		31.4 / 77.1 / D
	Whispering Pines Ln to E. Bennett Rd	Class I Highway	
	NB		37.1 / 67.7 / C
	SB		36.3 / 82.9 / D
	E. Bennett Rd to Project Driveway	Class I Highway	
	NB		35.6 / 61.7 / C
	SB		35.5 / 78.1 / C
	Project Driveway to SR 174	Class I Highway	
	NB		33.9 / 67.4 / C
	SB		33.2 / 80.9 / D
E. Bennett Rd	Project Driveway to Brunswick Rd	Class III Highway	
	EB		35.0 / 36.1 / B
	WB		35.9 / 52.7 / B
SR 174	Brunswick Rd to Empire St	Class I Highway	
	EB		**30.3 / 59.8 / E**
	WB		**29.3 / 76.9 / E**

ATS – average travel speed
PTSF – percent time spent following
LOS – level of service
Bold indicates LOS threshold exceeded

V. PROJECT CHARACTERISTICS

The development of the Idaho Maryland Mine project will attract traffic to the project site. The amount of additional traffic on a particular section of the street network is dependent upon two factors:

- Trip Generation, the number of new trips generated by the project, and
- Trip Distribution and Assignment, the specific routes that the new traffic takes.

V.1. Trip Generation

Trip generation is determined by identifying the type and size of land use being developed. Recognized sources of trip generation data may then be used to calculate the total number of trip ends resulting from the day to day operation of the project.

The *Trip Generation Manual* (Institute of Transportation Engineers, 10th Edition, 2017) is often used to calculate project trips for more common land use codes. However, this publication does not have trip generation data for mining operations. Instead, the project trip generation was developed based on projected employment rates, projected truck trips for hauling engineered fill and mining concentrate off site, and projected material and supply deliveries.

Rise anticipates employing approximately 312 direct employees during full mining operations, as detailed in Table 10. At full operations, approximately 44 employees will work regular 8-hour days, 5 days per week, and approximately 268 employees will work 12-hour shifts, 7 days on and 7 days off. Shift change for 12-hour employees will be 7 a.m. and 7 p.m. Work shifts for 8-hour employees will be from 7 a.m. to 3:30 p.m.

The Brunswick site will generate a maximum of 174 employee trips per day while the Centennial site will generate a maximum of 4 employee trips per day. The employee trip generation is shown in the top of Table 12.

TABLE 10
OPERATIONS WORKFORCE & HOURS OF OPERATION

Workforce	Shift	Total Employees
Administrative Personnel: Management, technical, construction, administrative staff	8 hours a day,5 days a week 7:00 a.m. – 3:30 p.m.	40
Mining Operations: Underground mining, mineral processing, engineered fill transport staff	12 hours a day, 7 days on, 7 days off 7:00 a.m. – 7:00 p.m. & 7:00 p.m. – 7:00 a.m.	268
Grading Operations: Centennial* or Brunswick Industrial Site – placement and compaction of engineered fill	8 hours a day, 5 days per week 7:00 a.m. – 3:30 p.m.	4
	TOTAL WORKFORCE	**312**
***** Staffing at the Centennial site is projected to occur over an approximate five-year span within the analysis.		

In addition to employee traffic, the Idaho-Maryland Mine project will result in daily operational truck traffic, including but not limited to engineering fill trucking, concentrate trucking, and materials and supplies deliveries, and ancillary vehicle traffic to support operations. The truck traffic, hours, and projected trip generation are detailed in Table 11. The total maximum number of two-way truck trips is 118 trucks, with 236 total daily trips made, one inbound and one outbound.

TABLE 11
PROJECT TRUCK TRAFFIC & HOURS

Truck Traffic	Hours	Maximum Daily Trips	Average Daily Trips
Brunswick Site			
Engineered Fill	6:00 a.m. – 10:00 p.m. 7 days a week	100	50
Concentrate	6:00 a.m. – 10:00 p.m. 7 days a week	5	1
Materials / Supplies / Outside services	7:00 a.m. – 7:00 p.m. 7 days a week	12	6
Centennial Site			
Fuel Supplies	7:00 a.m. – 3:30 p.m. 5 days a week	1	0.3
	TOTAL TWO-WAY TRIPS (One-Way Trips)	**118 (236)**	**57.3 [rounded 58] (114.6) [rounded 115]**
NOTES: 1. Traffic analysis studies the worst-case scenario of maximum daily trips and with hours of operation as shown in Table 10.			

As discussed previously, a.m. and p.m. periods were analyzed during the "standard" peak of adjacent street traffic, generally from 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m., and at the three time periods when project employee trips are expected to occur based on actual proposed work schedules. Table 12 presents the projected trip generation for the project during the five analysis periods, considering the worst-case scenarios for both Brunswick and Centennial sites.

For purposes of a worst-case analysis, the County requested that a worst-case scenario be analyzed, assuming the project traffic occurred during the "standard" peak hours. However, as noted, the project schedule intends to have employees commute during off-peak hours, as previously described.

As noted, the Centennial site is expected to be an active site with delivery of engineered fill occurring for a period of approximately 5 years. The engineered fill is projected to be delivered to construction sites accessible from SR 49 for the remaining 15 years of the analysis. It is unknown which years will be used for each scenario; therefore, two scenarios were analyzed, with each scenario assumed to be active at build-out:

Scenario 1: Transporting of engineered fill to the Centennial Industrial site.
Scenario 2: Transporting of engineered fill to construction sites accessible via SR 49/20.

TABLE 12
TRIP GENERATION

	Employee Trips (Hourly)									
	AM Peak Hour		**PM Peak Hour**		**6:30 – 7:30 AM**		**3:30 – 4:30 PM**		**6:30 -7:30 PM**	
	In	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
Brunswick Site										
AM Peak Hour	107*	67‡								
PM Peak Hour			67‡	107*						
7:00 AM Shift Change M-F					107*	67‡				
3:30 PM End of Administrative Day M-F							0	40†		
6:30 PM Shift change M-F									67‡	67‡
Centennial Site										
AM Peak Hour	4	0								
PM Peak Hour			0	4						
7:00 AM Shift Change M-F					4	0				
3:30 PM End of Administrative Day M-F							0	4		
6:30 PM Shift change M-F									0	0
Total Trips - Employee Traffic	111	67	67	111	111	67	0	44	67	67
Haul Traffic										
Brunswick Site										
Engineered Fill ◊	8	8	8	8	8	8	8	8	8	8
Concentrate □	1	1	1	1	1	1	1	1	1	1
Materials / Supplies ⌂	2	2	2	2	2	2	2	2	2	2
Centennial Site										
Fuel Supplies Δ	1	1	1	1	1	1	1	1	1	1
Total Trips – Haul Traffic	12	12	12	12	12	12	12	12	12	12
Total Trips	***123***	***79***	***79***	***123***	***123***	***79***	***12***	***56***	***79***	***79***

Notes:
- Trip generation assumes worst case scenario. Daily operations workforce and truck traffic are detailed in Table 9 and Table 10.
- Brunswick site operational on weekends and generate 67 inbound / outbound trips at shift change

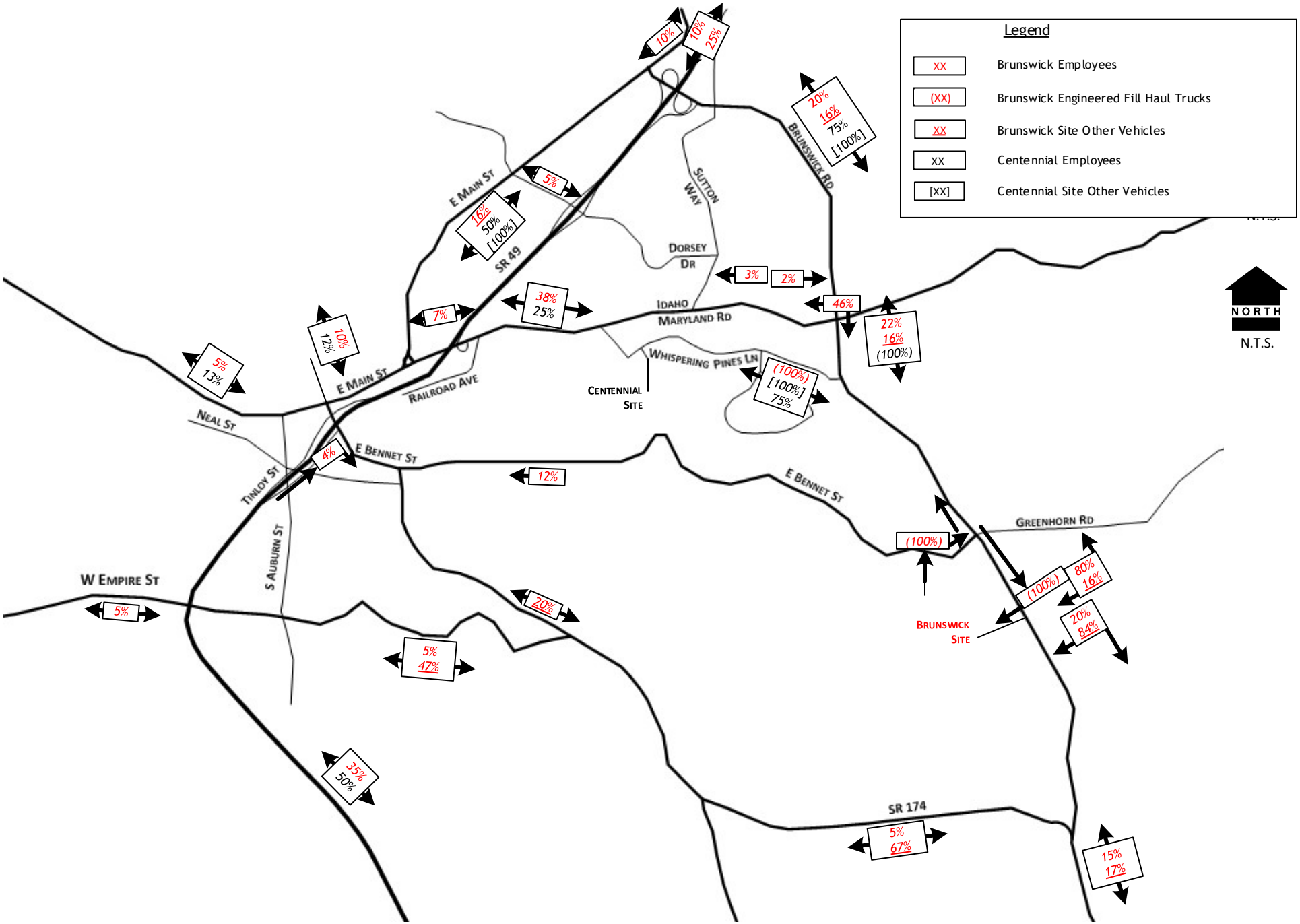
* includes mining and administrative operations ‡ includes mining operations † includes administrative operations
□ 5 round trips (10 one-way truck trips) / day averaged over 8-hour day (worst case) Δ 1 trip per day
⌂ 12 round trips (24 one-way truck trips) / day averaged over 8-hour day ◊ 100 roundtrips (200 truck trips) / day averaged over 1212 hours (worst case)

V.2. Trip Distribution & Assignment

The distribution of traffic was developed based on existing traffic patterns in the Grass Valley area and where employees may be expected to live. Engineered fill will be hauled to either the Centennial site or to off-site construction sites and mining concentrate will be shipped off-site via SR 49. Other trucks providing materials and supplies are expected to access the site from both SR 49 and SR 174. Trip distribution for the various trip elements are shown in Table 13. The trip distribution shown in Figure 6A considers hauling to the Centennial site while Figure 6B provides trip distribution to construction sites accessible via SR 49/20. Project traffic volumes are shown in Figures 7A through 7F with the Centennial site used for engineered fill and Figures 8A through 8F with engineered fill hauled to off-site construction locations. The project distribution was reviewed by both Nevada County and Grass Valley staff.

TABLE 13
PROJECT TRIP DISTRIBUTION

Route	% of Total Trips				
	Brunswick Site			Centennial Site (Scenario #1 only)	
	Employees	Engineered Fill Trucks	Other Vehicles	Employees	Other Vehicles
West to Grass Valley	15%	0%	0%	25%	0%
West on SR 174	5%	0%	67%	0%	0%
West on SR 49/20	0%	0%	16%	0%	0%
South to Auburn via SR 49	35%	0%	0%	0%	0%
South to Auburn via SR 174	15%	0%	17%	0%	0%
East on Nevada City Highway	10%	0%	0%	25%	0%
East on SR 49/20	10%	0%	0%	0%	0%
North to Loma Rica	5%	0%	0%	0%	0%
North to Grass Valley via Dorsey	5%	0%	0%	0%	0%
West on SR 49/20 (scenario #1)	0%	0%	0%	50%	100%
To Centennial Site (scenario #1)	0%	100%	0%	0%	0%
East on SR 49/20 (scenario #2)	0%	20%	0%	0%	0%
West on SR 49/20 (scenario#2)	0%	80%	0%	0%	0%
Total	100%	100%	100%	100%	100%



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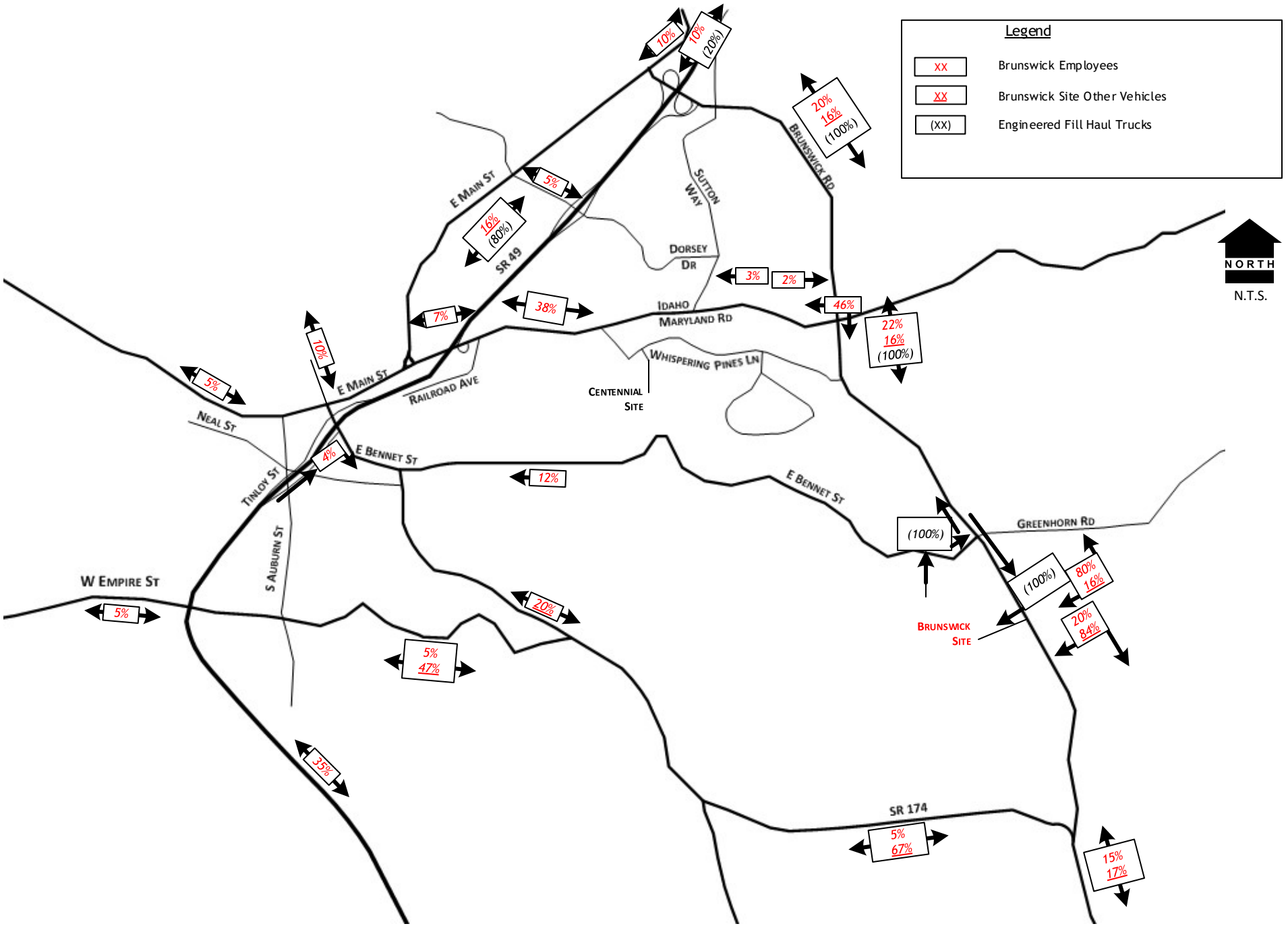
TRIP DISTRIBUTION PERCENTAGES
SCENARIO #1 – CENTENNIAL SITE

figure 6a



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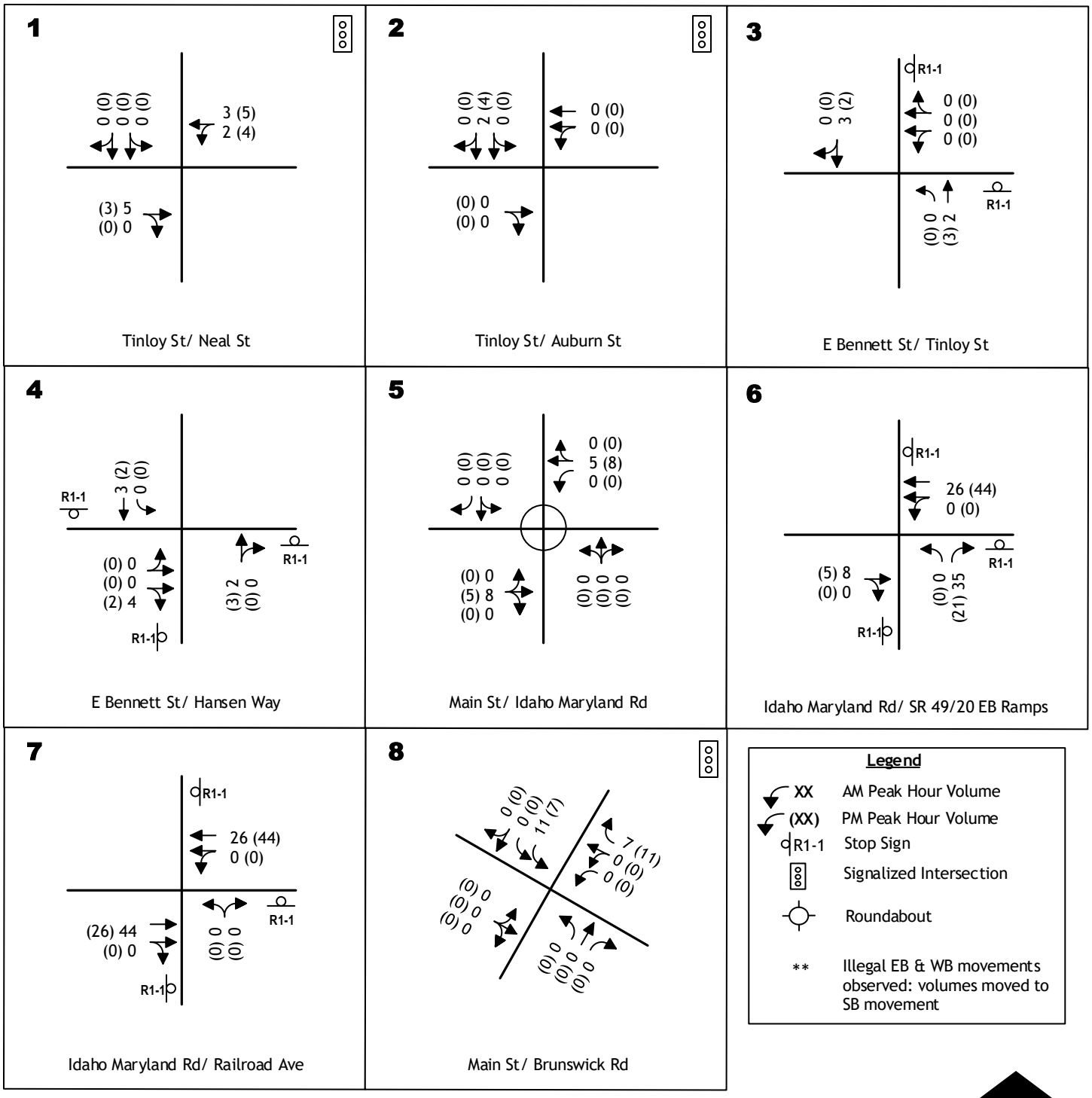
TRIP DISTRIBUTION PERCENTAGES
SCENARIO #2 – SR 49

figure 6b



AM/PM PEAK HOURS PROJECT TRIPS
TRAFFIC VOLUMES AND LANE CONFIGURATIONS
(TO CENTENNIAL SITE)

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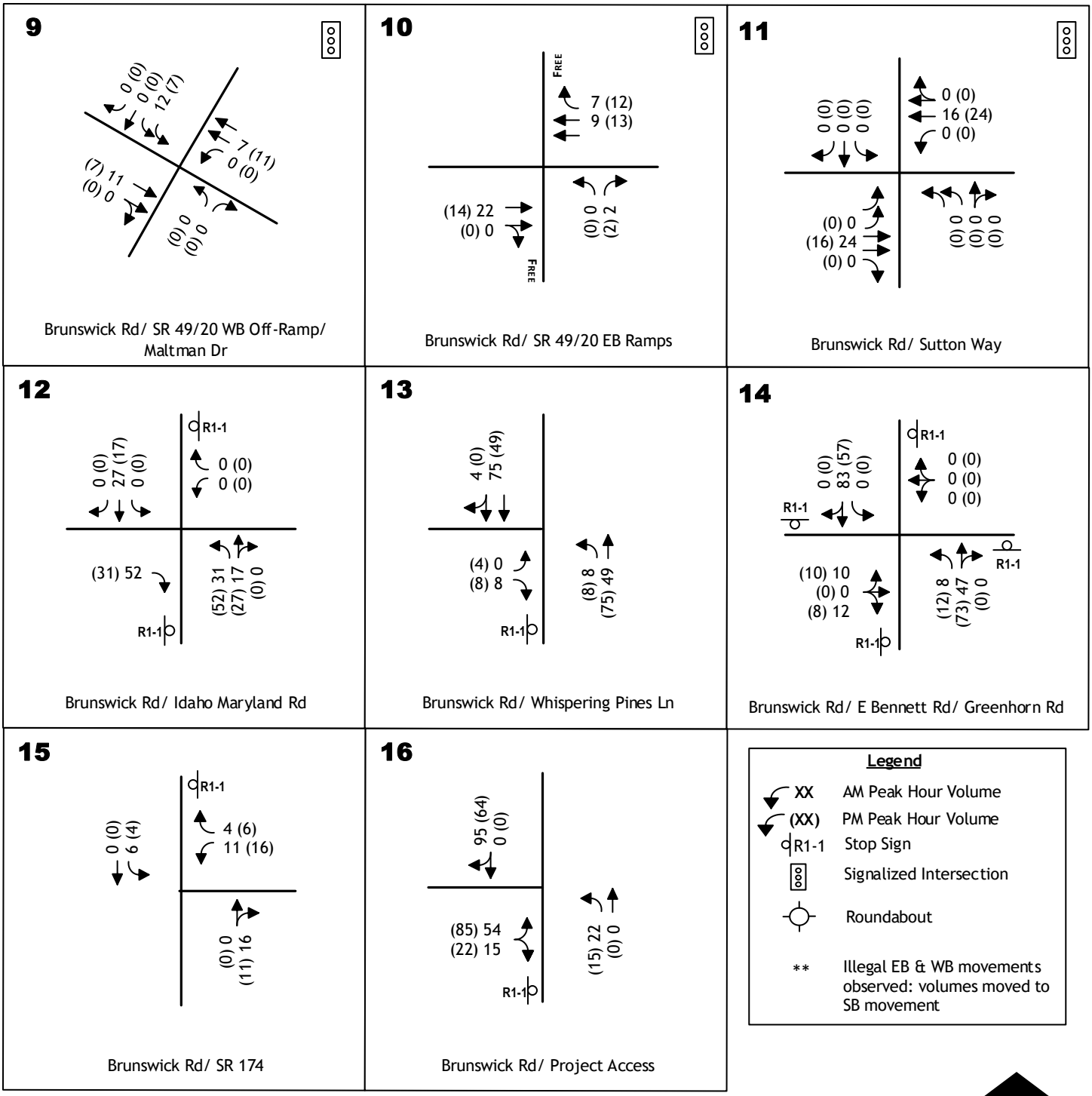
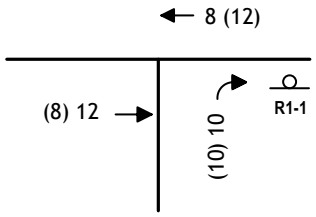
figure 7a



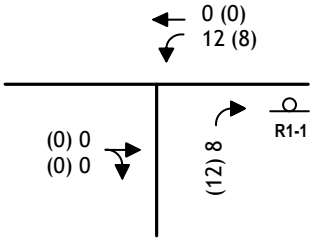
AM/PM PEAK HOURS PROJECT TRIPS
TRAFFIC VOLUMES AND LANE CONFIGURATIONS
(TO CENTENNIAL SITE)

17



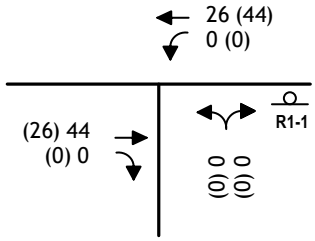
E Bennett St/ Millsite Rd

18



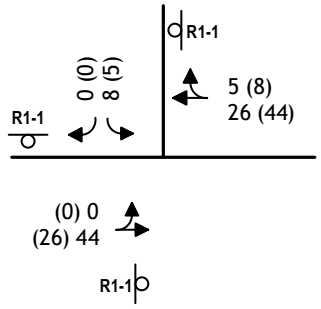
Whispering Pines Ln/ Centennial Site Dwy

19



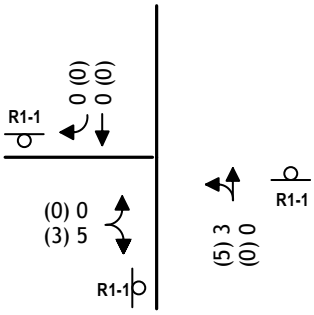
Idaho Maryland Rd/ Centennial Dr

20



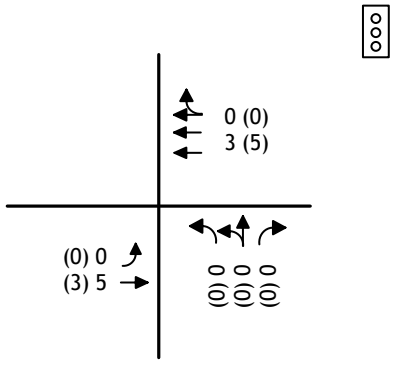
Idaho Maryland Rd/ Sutton Way

21



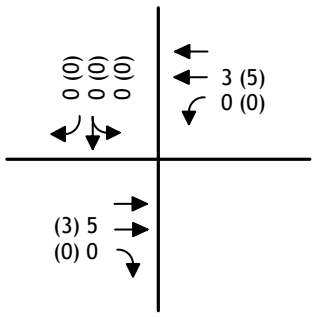
Sutton Way/ Dorsey Dr

22



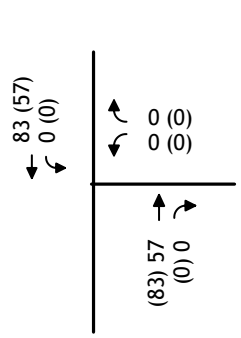
Dorsey Dr/ SR 49/20 EB Ramps

23



Dorsey Dr/ SR 49/20 WB Ramps

24



Brunswick Rd/ Loma Rica

Legend

XX	AM Peak Hour Volume
(XX)	PM Peak Hour Volume
R1-1	Stop Sign
	Signalized Intersection
	Roundabout
**	Illegal EB & WB movements observed: volumes moved to SB movement

NORTH

N.T.S.

AM/PM PEAK HOURS PROJECT TRIPS
TRAFFIC VOLUMES AND LANE CONFIGURATIONS
(TO CENTENNIAL SITE)

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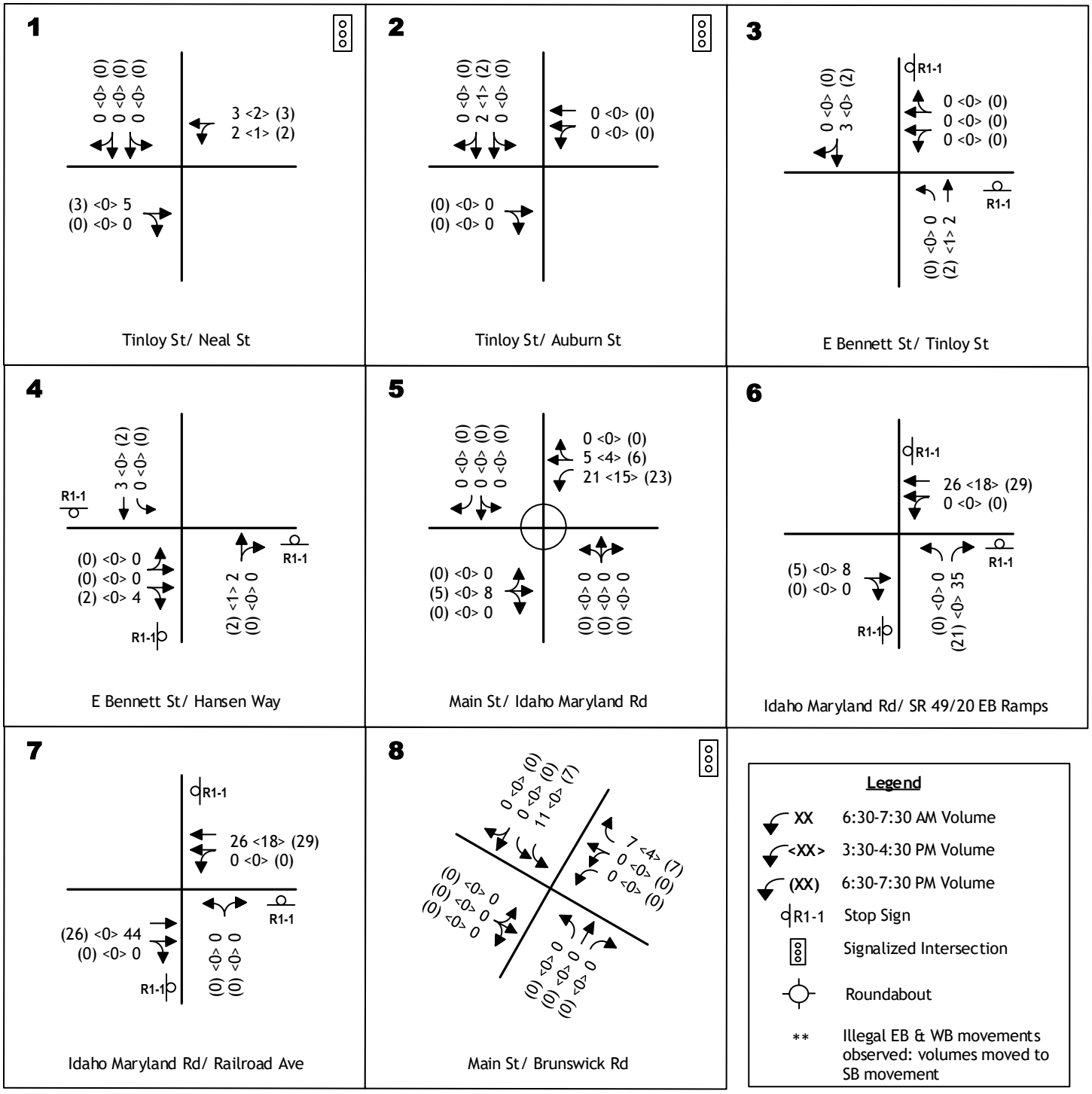
figure 7c



PROJECT TRAFFIC HOURS PROJECT TRIPS TRAFFIC VOLUMES AND LANE CONFIGURATIONS (TO CENTENNIAL SITE)

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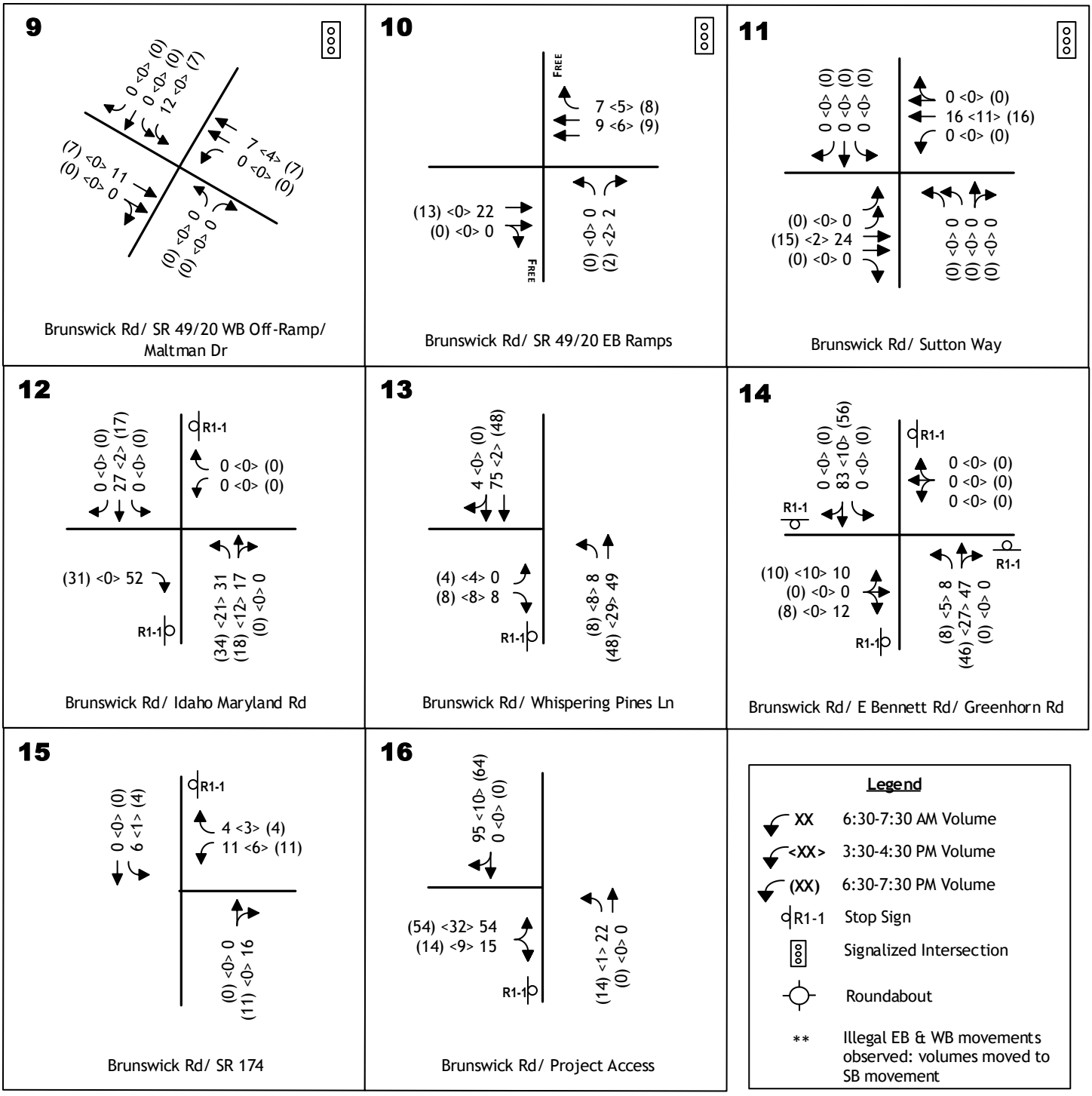
figure 7d



PROJECT TRAFFIC HOURS PROJECT TRIPS
TRAFFIC VOLUMES AND LANE CONFIGURATIONS
(TO CENTENNIAL SITE)

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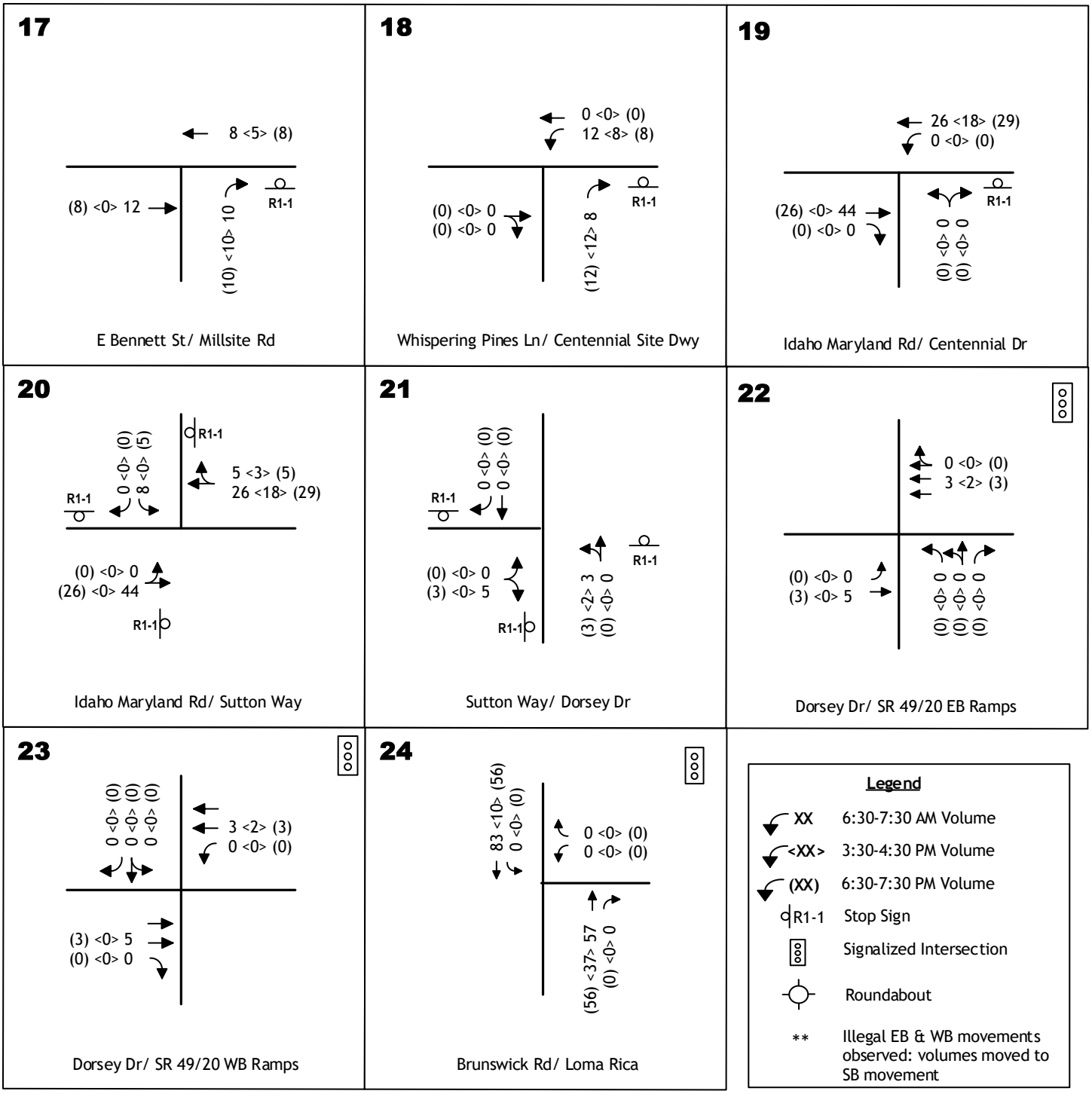
figure 7e



PROJECT TRAFFIC HOURS PROJECT TRIPS
TRAFFIC VOLUMES AND LANE CONFIGURATIONS
(TO CENTENNIAL SITE)

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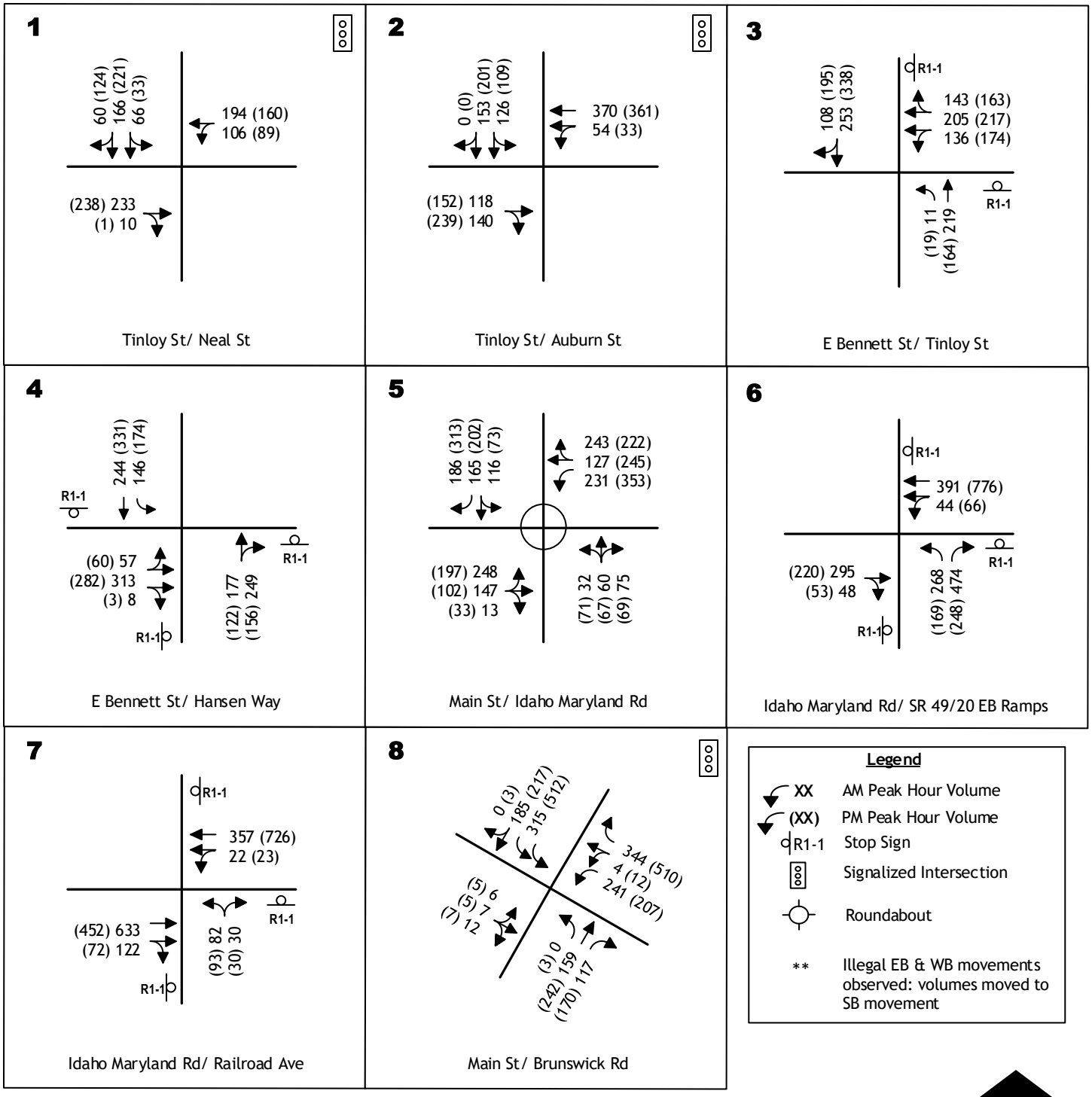
figure 7f



AM/PM PEAK HOURS EPAP PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS
(TO CENTENNIAL SITE)

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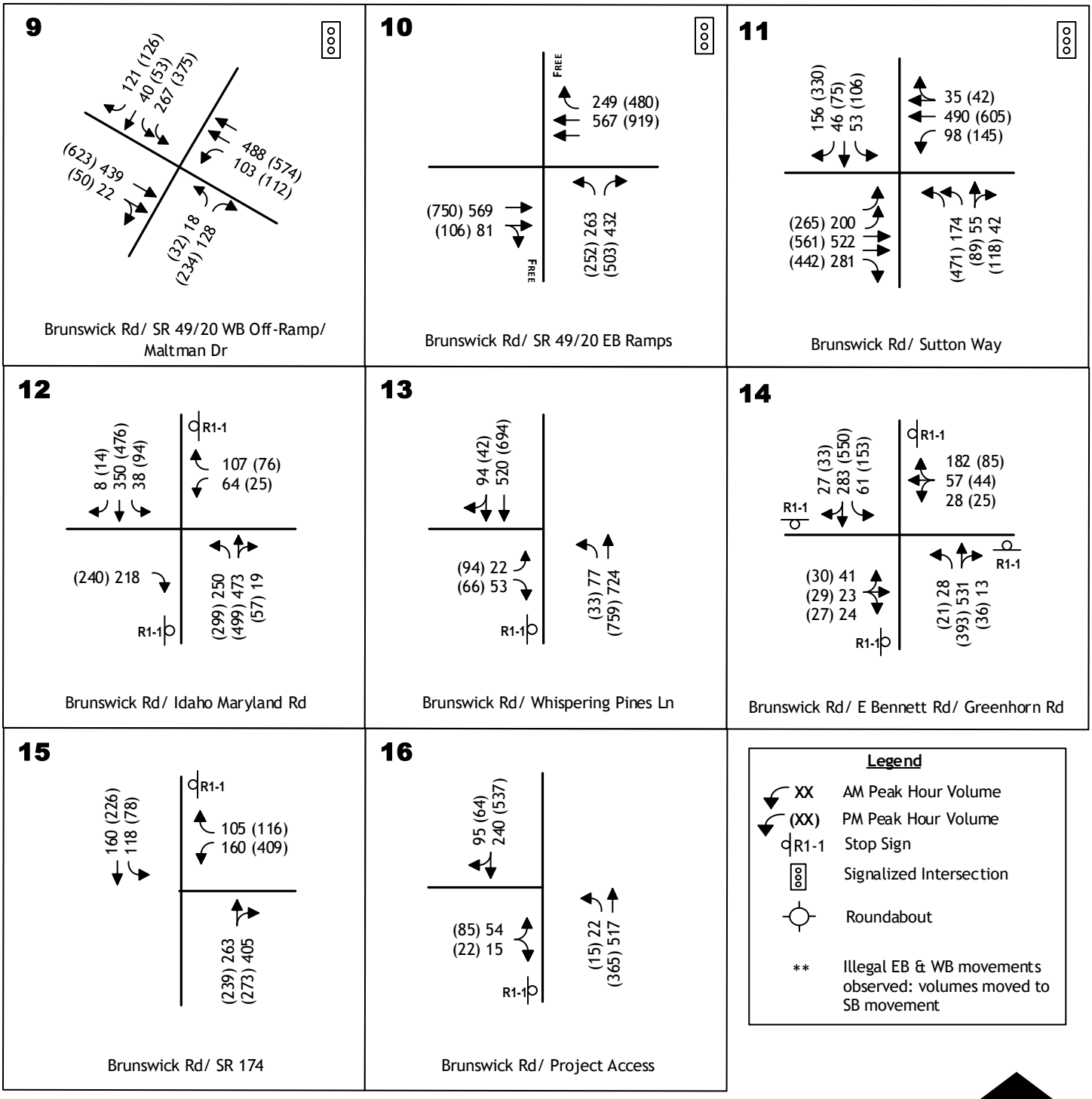
figure 8a



AM/PM PEAK HOURS EPAP PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS
(TO CENTENNIAL SITE)

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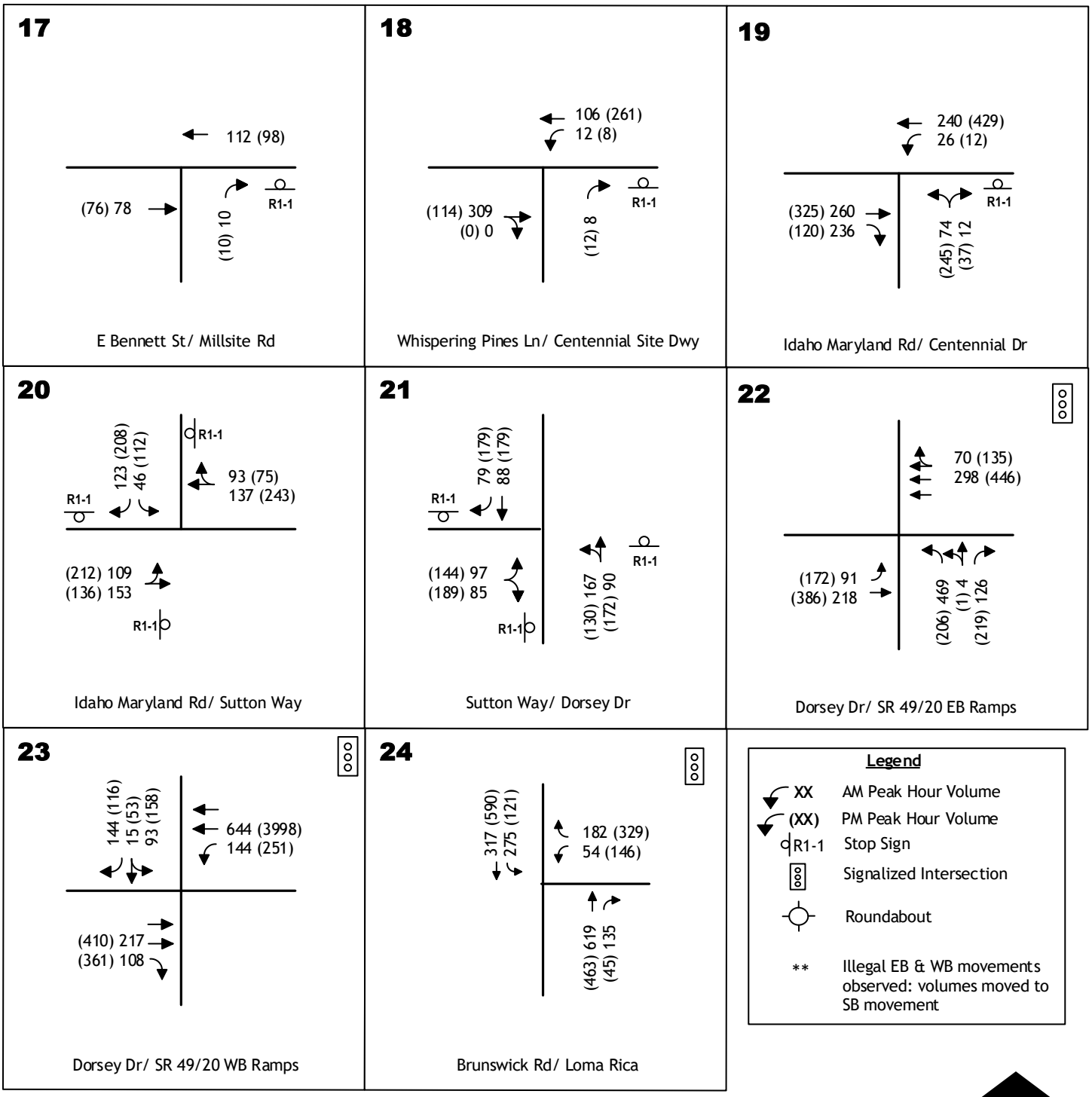
figure 8b



AM/PM PEAK HOURS EPAP PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS
(TO CENTENNIAL SITE)

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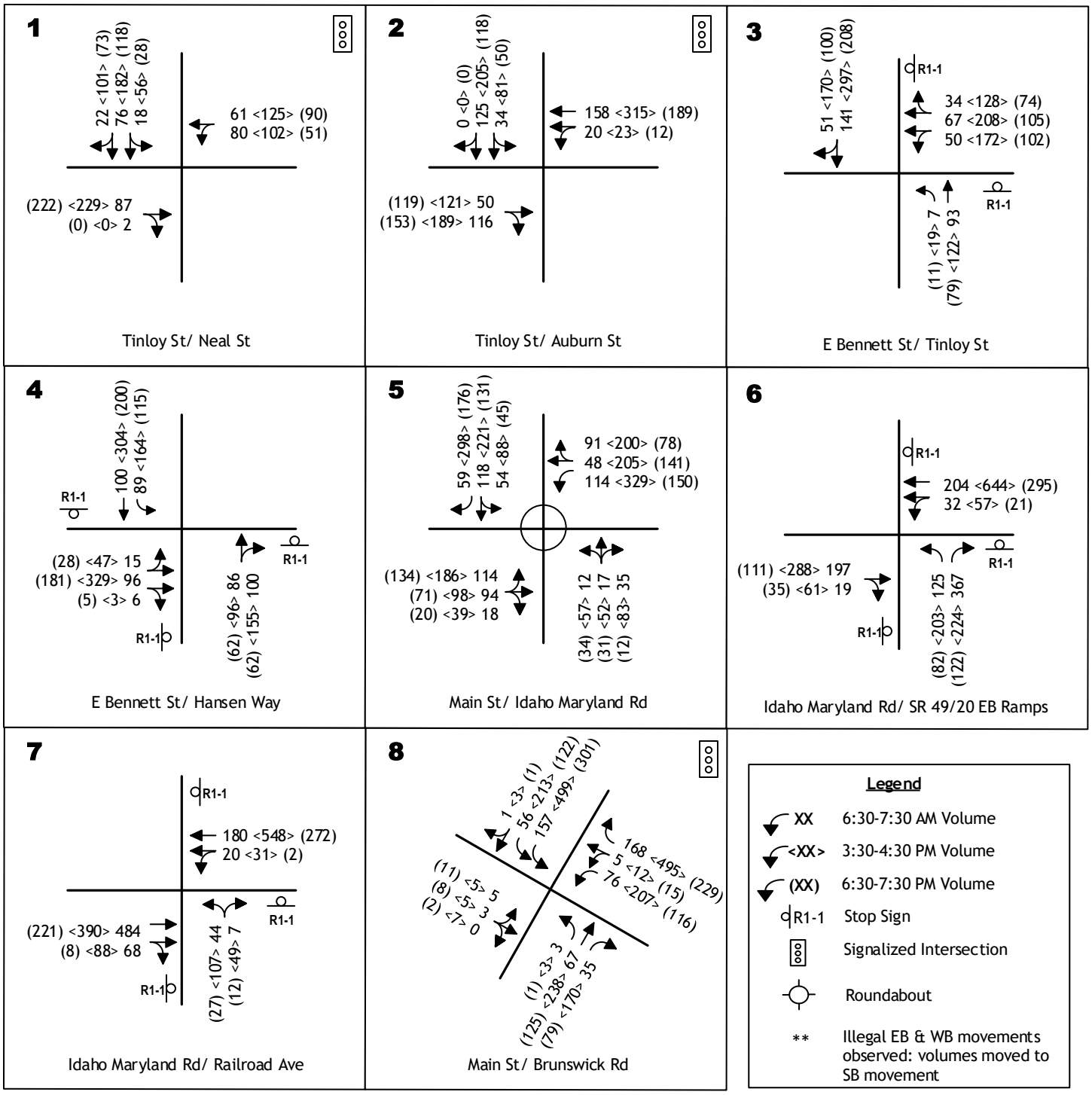
figure 8c



PROJECT TRAFFIC HOURS EPAP PLUS PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS (TO CENTENNIAL SITE)

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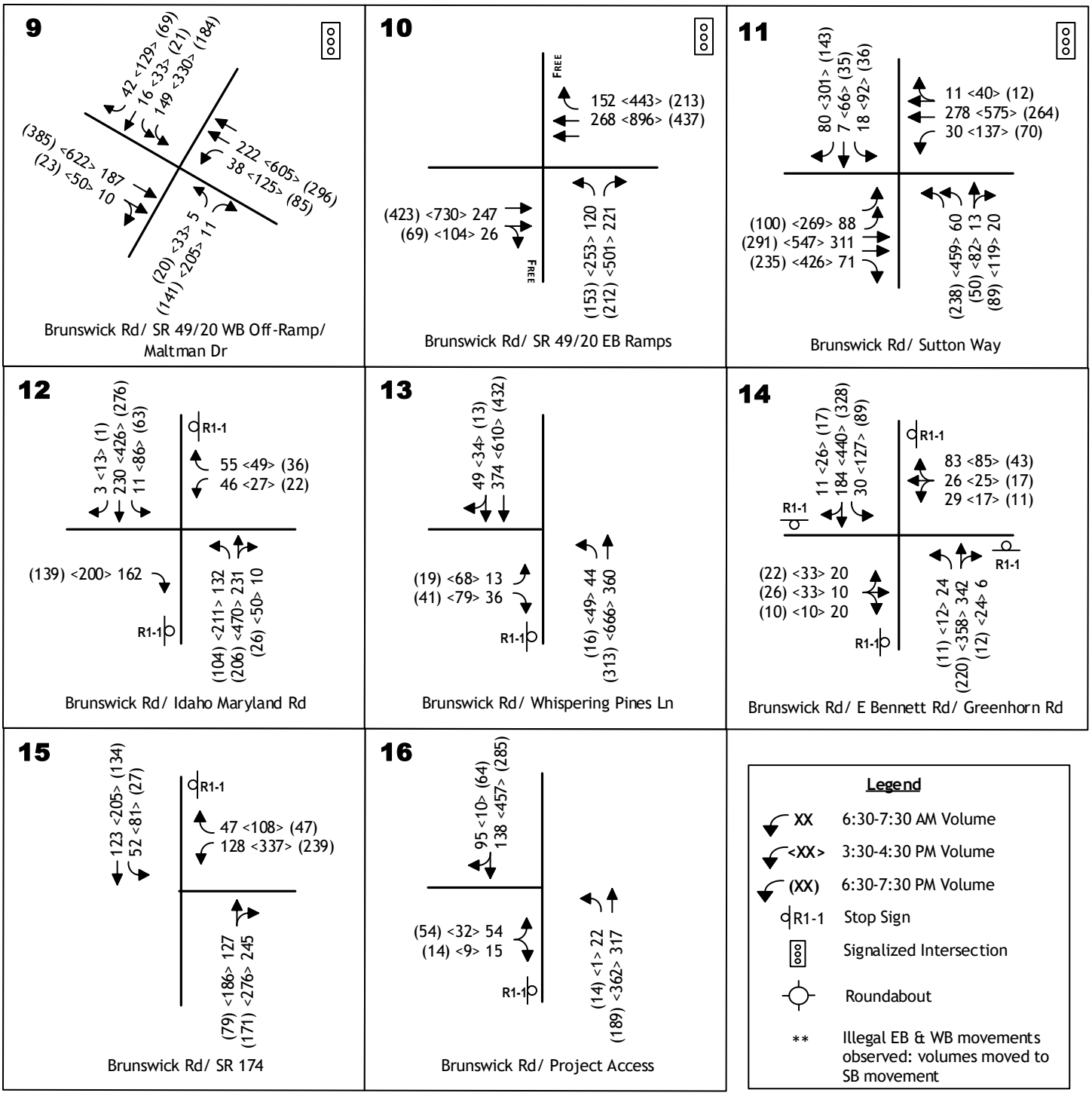
figure 8d



PROJECT TRAFFIC HOURS EPAP PLUS PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS (TO CENTENNIAL SITE)

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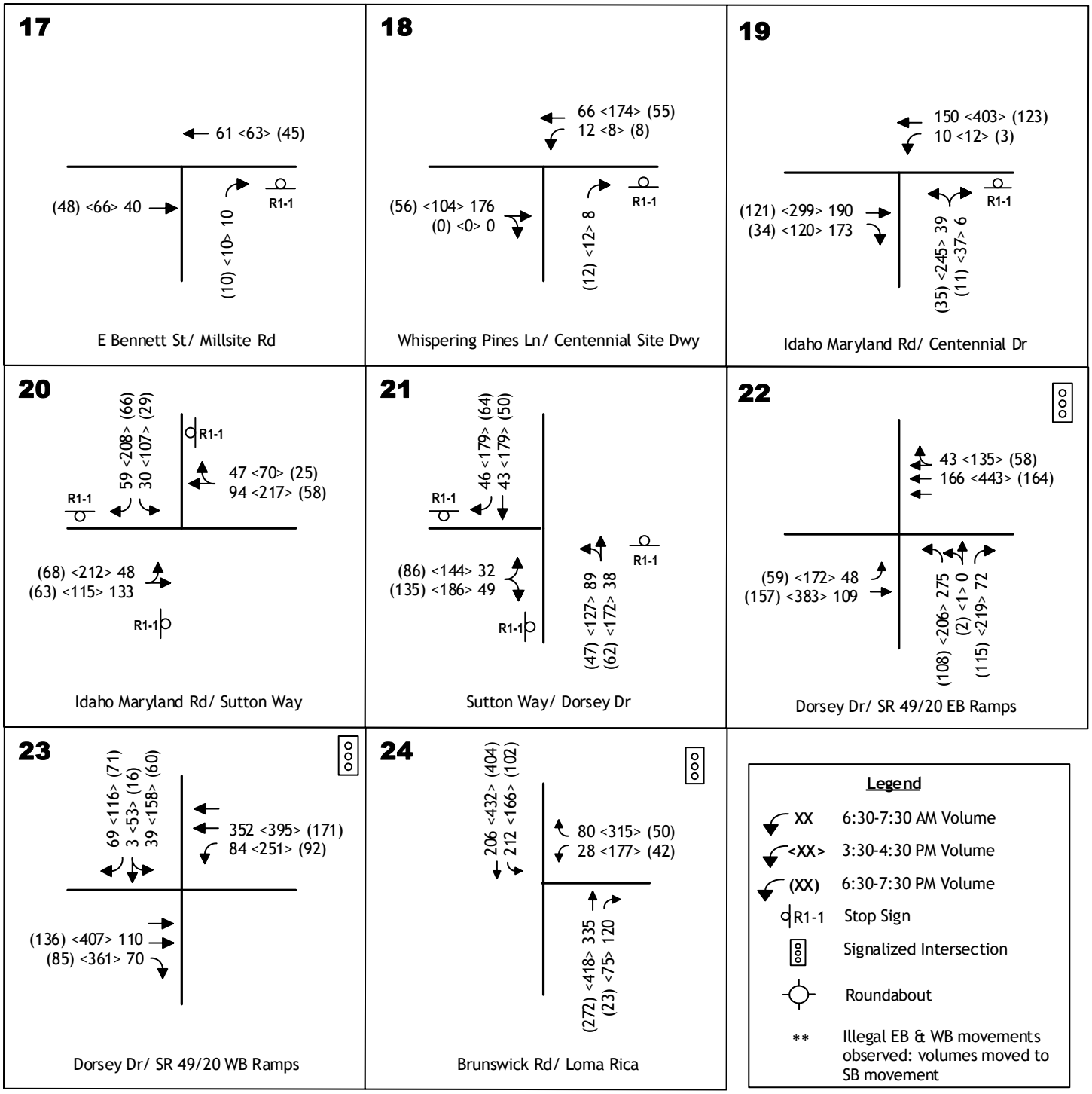
figure 8e



PROJECT TRAFFIC HOURS EPAP PLUS PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS (TO CENTENNIAL SITE)

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figure 8f

VI. PROJECT TRAFFIC IMPACTS

VI.1. EPAP Plus Project Conditions (Scenario #1)

Scenario #1 considers transporting of engineered fill to the Centennial Industrial site.

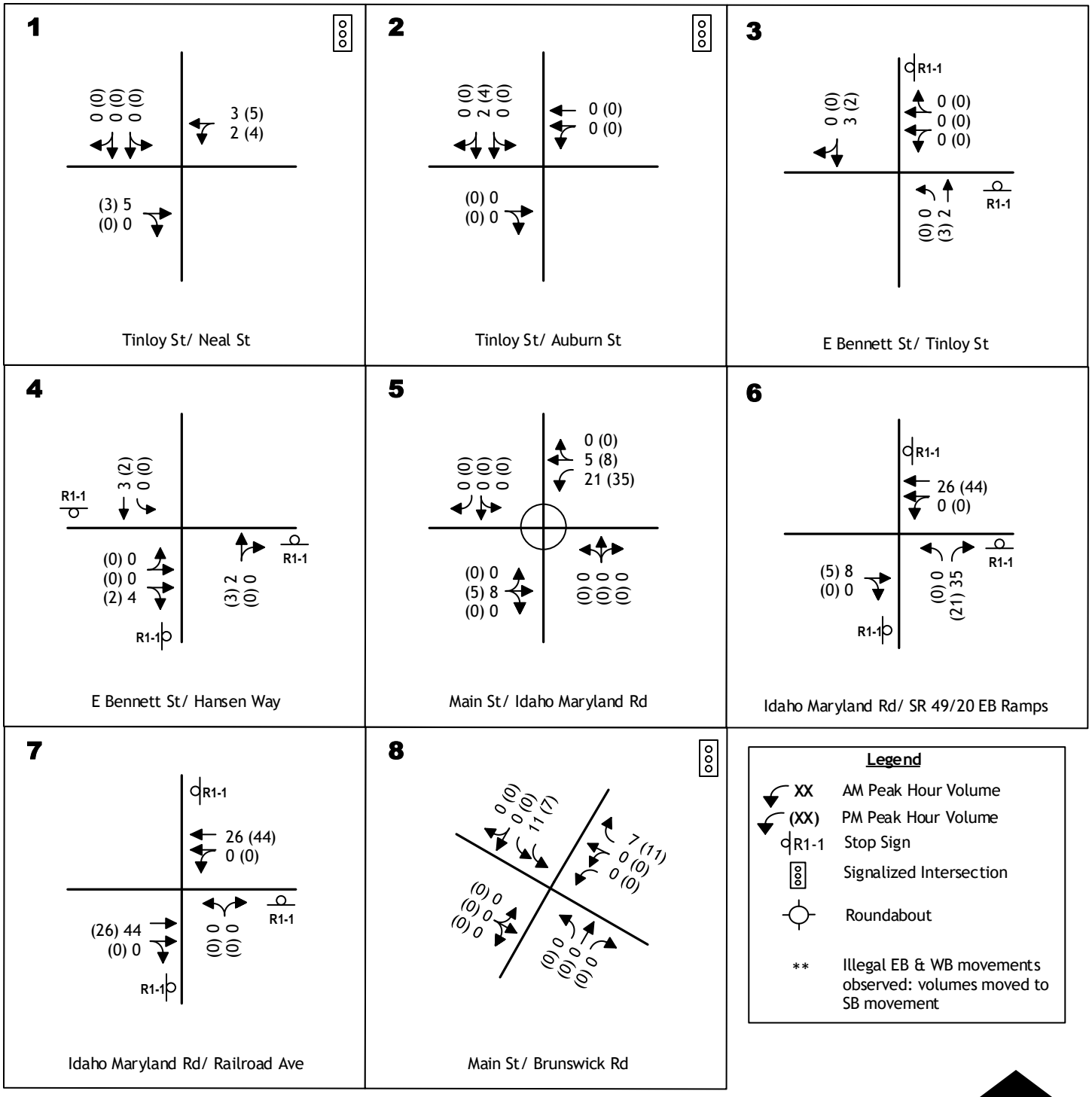
Traffic Volumes. The LOS impacts of the Idaho-Maryland Mine project have been identified by superimposing project traffic onto EPAP conditions. Figures 9A through 9F display the "EPAP Plus Project" traffic volumes at each study intersection for each of the five study time periods.

EPAP plus Project volumes under Scenario #1 were used to recalculate operating Levels of Service at the study intersections. No roadway improvements at the study area intersections, other than those incorporated as part of the EPAP scenario, were identified. Tables 14A and 14B summarize operating Levels of Service at the study area intersections for each of the five study time periods.

During the peak hour scenario three intersections would continue to operate at unacceptable Levels of Service, at LOS E or F, which include Brunswick Road at Idaho Maryland Road, Brunswick Road at SR 174, and Idaho Maryland Road at Centennial Drive. Two additional intersections will decline to LOS E, Idaho Maryland Road at SR 49/20 Eastbound Ramps and Brunswick Road at E. Bennett Road – Greenhorn Road.

During the project traffic hours, when the project employee traffic occurs, three intersections will operate below the LOS threshold. These intersections include Brunswick Road at Idaho Maryland Road, Brunswick Road at SR 174, and Idaho Maryland Road at Centennial Drive.

Seven intersections will meet the peak hour signal warrant during the a.m. and p.m. peak hour scenarios. These include E. Bennett Road at Tinloy Street, Idaho Maryland Road at SR 49/20 EB Ramps, Brunswick Road at Idaho Maryland Road, Brunswick Road at Whispering Pines Lane, Brunswick Road at E. Bennett Road-Greenhorn Road, Brunswick Road at SR 174 and Idaho Maryland Road at Centennial Drive. The Idaho Maryland Road / SR 49/20 EB Ramps intersection, Brunswick Road / Idaho Maryland Road intersection, Brunswick Road / E. Bennett Road-Greenhorn Road intersection, Brunswick Road / SR 174 intersection and Idaho Maryland Road at Centennial Drive intersection also operate below the accepted LOS D threshold. While the Brunswick Road / Whispering Pines Lane intersection meets the peak hour signal warrant it operates acceptably. During the project hour analyses the same seven intersections will meet the peak hour signal warrant; however, only the Brunswick Road / Idaho Maryland Road intersection, the SR 174 at Brunswick Road intersection and the Idaho Maryland Road at Centennial Drive intersection will operate below the accepted LOS D threshold.



AM/PM PEAK HOURS PROJECT TRIPS
TRAFFIC VOLUMES AND LANE CONFIGURATIONS
(TO SR 49)

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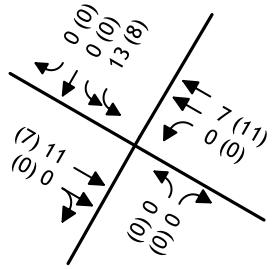
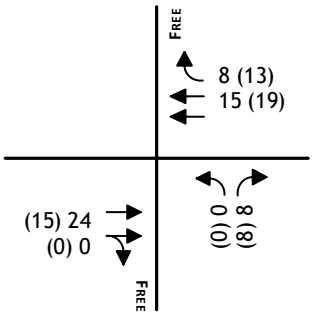
figure 9a

9



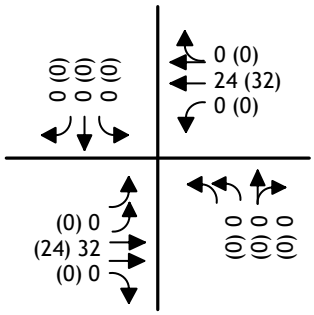
Brunswick Rd/ SR 49/20 WB Off-Ramp/ Maltman Dr

10



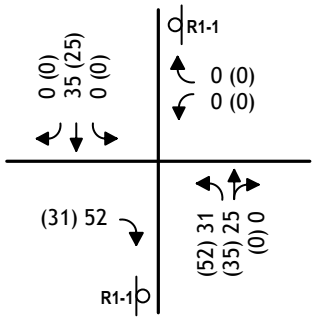
Brunswick Rd/ SR 49/20 EB Ramps

11



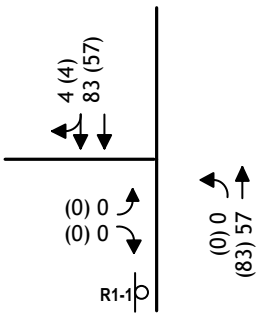
Brunswick Rd/ Sutton Way

12 **



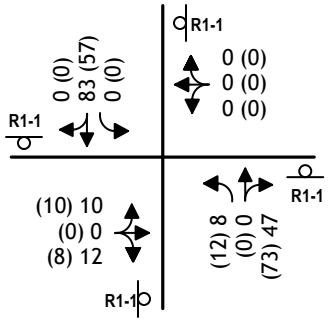
Brunswick Rd/ Idaho Maryland Rd

13



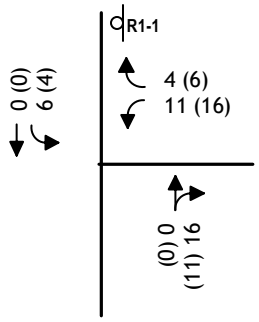
Brunswick Rd/ Whispering Pines Ln

14



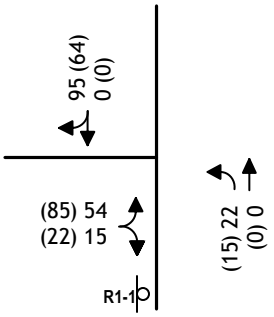
Brunswick Rd/ E Bennett Rd/ Greenhorn Rd

15



Brunswick Rd/ SR 174

16



Brunswick Rd/ Project Access

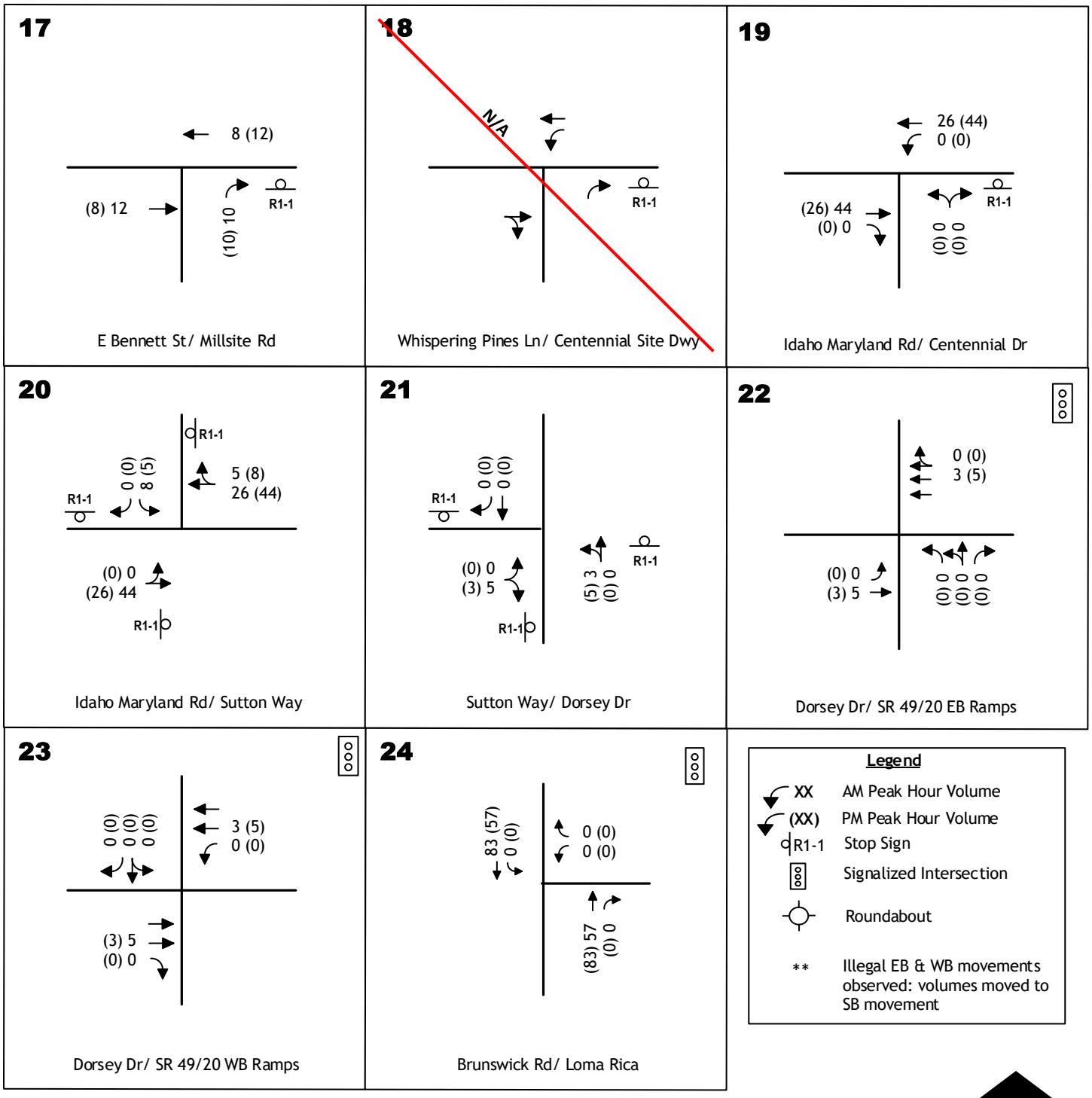
Legend

XX	AM Peak Hour Volume
(XX)	PM Peak Hour Volume
R1-1	Stop Sign
	Signalized Intersection
	Roundabout
**	Illegal EB & WB movements observed: volumes moved to SB movement

NORTH

N.T.S.

AM/PM PEAK HOURS PROJECT TRIPS
TRAFFIC VOLUMES AND LANE CONFIGURATIONS
(TO SR 49)

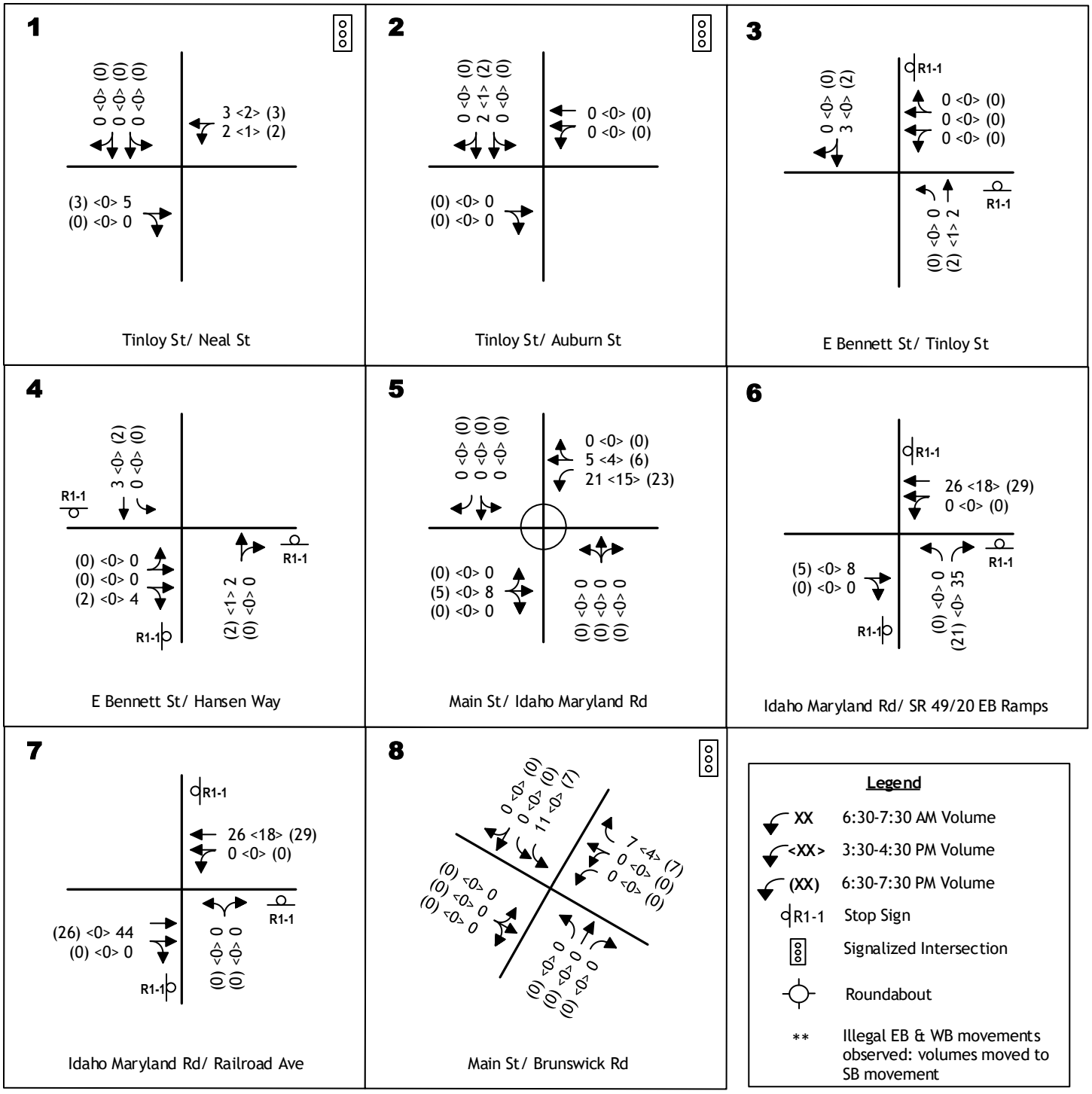


AM/PM PEAK HOURS PROJECT TRIPS
TRAFFIC VOLUMES AND LANE CONFIGURATIONS
(TO SR 49)

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 9c

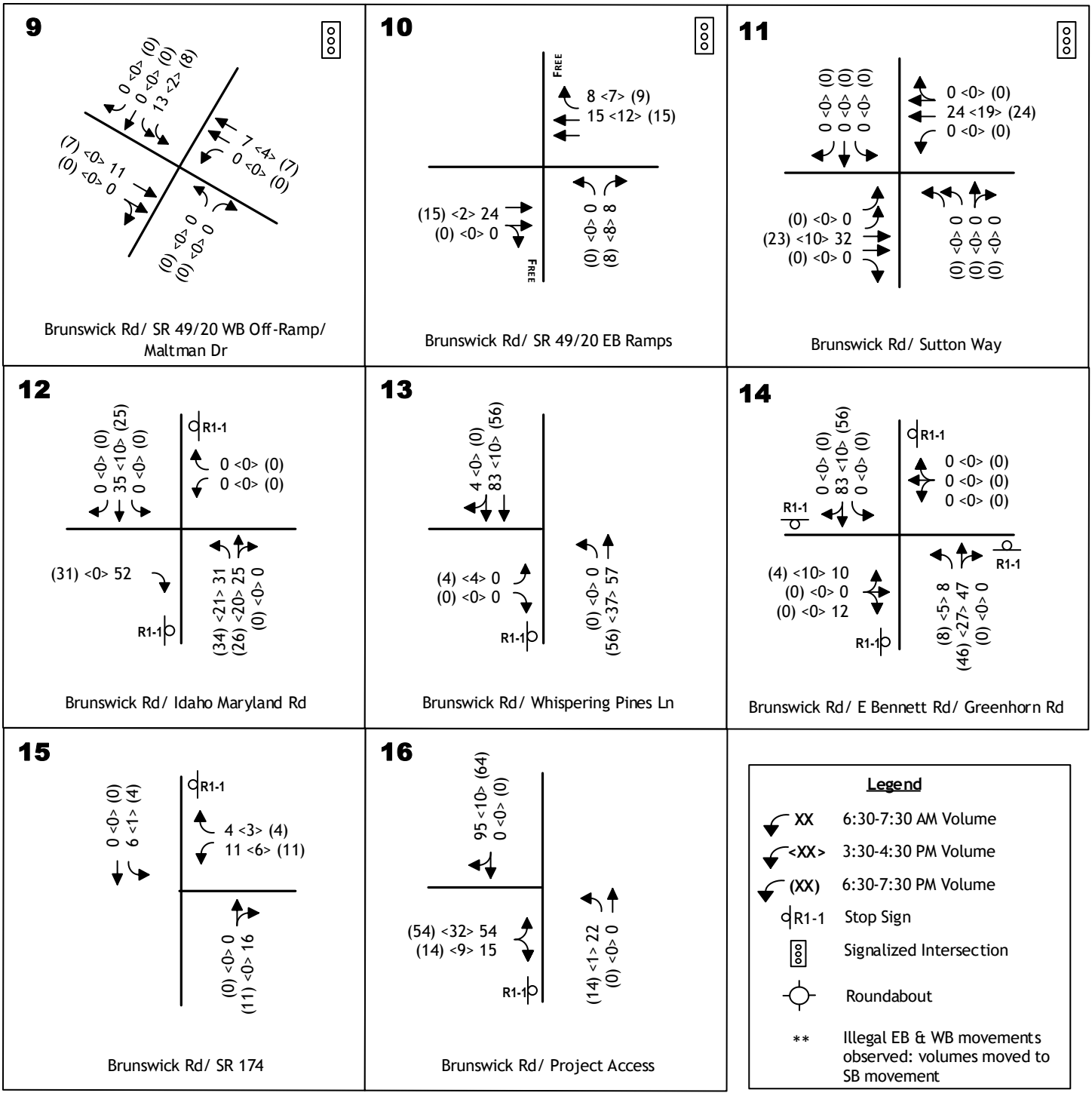


PROJECT TRAFFIC HOURS PROJECT TRIPS
TRAFFIC VOLUMES AND LANE CONFIGURATIONS
(TO SR 49)

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 9d

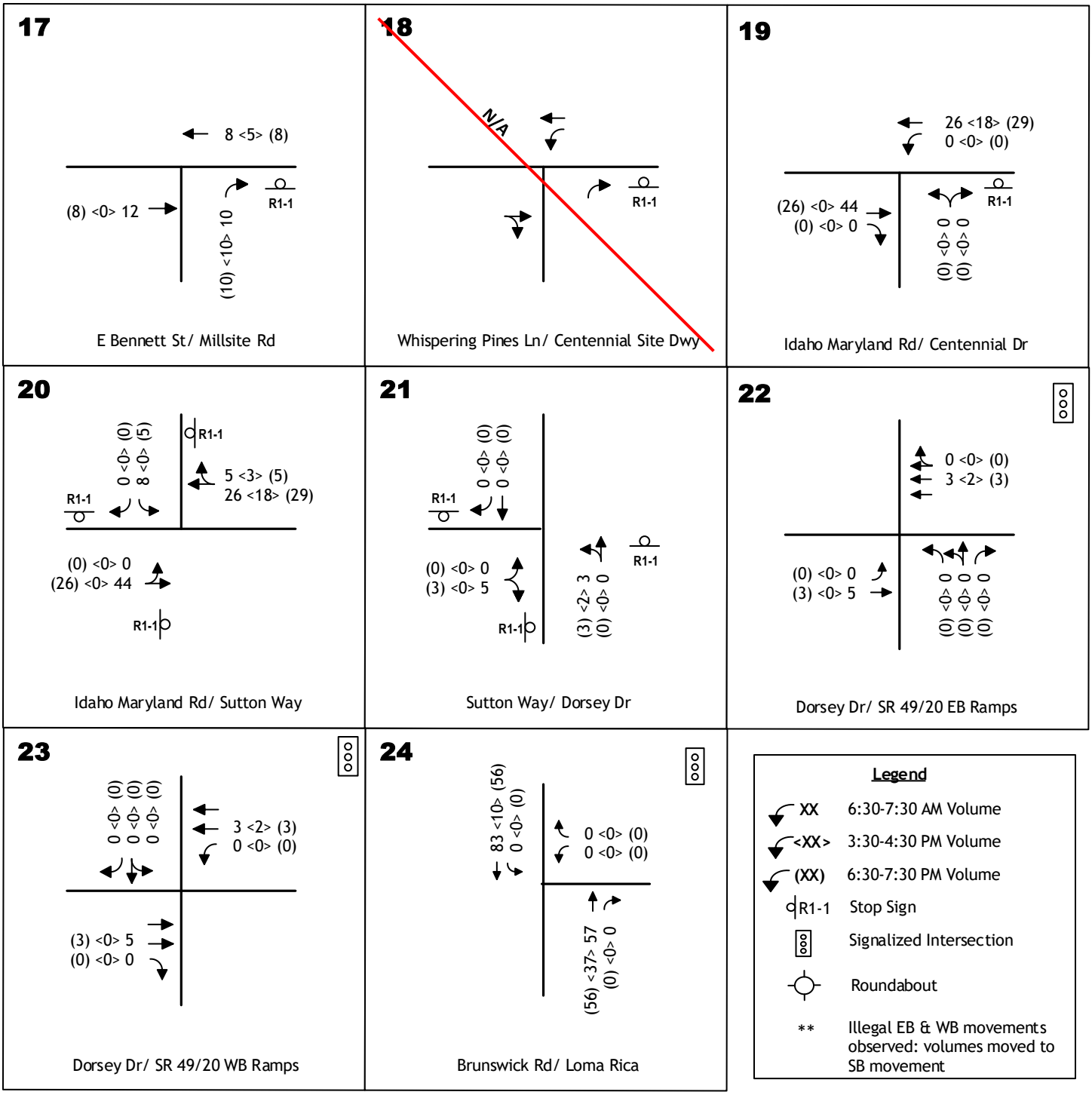


PROJECT TRAFFIC HOURS PROJECT TRIPS
TRAFFIC VOLUMES AND LANE CONFIGURATIONS
(TO SR 49)

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 9e



PROJECT TRAFFIC HOURS PROJECT TRIPS TRAFFIC VOLUMES AND LANE CONFIGURATIONS (TO SR 49)

TABLE 14A
EPAP PLUS PROJECT – CENTENNIAL SITE (SCENARIO #1)
LEVELS OF SERVICE AT INTERSECTIONS
(PEAK HOURS)

Location	Control	EPAP plus Project AM Peak Hour		EPAP plus Project PM Peak Hour		Meets Peak Hour Warrant?
		LOS	Average Delay	LOS	Average Delay	
1. Neal St / Tinloy St ‡◊	Signal	B	15.7	B	12.4	N/A
2. S. Auburn St / Tinloy St ‡◊	Signal	B	10.1	B	11.1	N/A
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp ‡◊	SB / WB Stop	A	6.1	A	7.3	Yes
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp ‡◊	AWS	C	20.0	C	16.1	No
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps ‡◊	Roundabout	A	7.8	A	7.6	N/A
6. Idaho Maryland Rd / SR 49 EB Ramps ‡◊	AWS	D	27.8	**E**	**38.9**	Yes
7. Idaho Maryland Rd / Railroad Ave ‡◊	AWS	B	14.0	C	22.3	No
8. E. Main St / Brunswick Rd – W. Olympia Dr ‡Δ	Signal	B	10.4	B	14.6	N/A
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr ‡♦	Signal	B	18.0	C	21.5	N/A
10. Brunswick Rd / SR 49 EB Ramps ‡▲	Signal	B	12.6	B	13.9	N/A
11. Brunswick Rd / Sutton Way ‡▲	Signal	B	12.8	C	24.4	N/A
12. Brunswick Rd / Idaho Maryland Rd ‡●						
NB Left	EB/WB Stop	A	8.9	A	9.8	Yes
SB Left		A	8.6	A	9.0	
EB		B	13.1	C	15.8	
WB		**F**	**187.3**	**F**	**164.1**	
13. Brunswick Rd / Whispering Pines Ln ‡●						
NB Left	EB Stop	A	9.4	A	9.5	Yes
EB		B	13.3	C	18.7	
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd †●	AWS	**E**	**47.3**	**E**	**37.5**	Yes

AWS – all way stop
Bold indicates intersection operates below threshold
† Nevada County
‡Grass Valley

◊ 8:00 – 9:00 a.m. / 4:30 – 5:30 p.m.
♦ 8:00 – 9:00 a.m. / 4:15 – 5:15 p.m.
● 7:45 – 8:45 a.m. / 4:30 – 5:30 p.m.

Δ 8:00 – 9:00 a.m. / 3:30 – 5:30 p.m.
▲ 8:00 – 9:00 a.m. / 3:45 – 4:45 p.m.

TABLE 14A (continued)
EPAP PLUS PROJECT – CENTENNIAL SITE (SCENARIO #1)
LEVELS OF SERVICE AT INTERSECTIONS
(PEAK HOURS)

Location	Control	EPAP plus Project AM Peak Hour		EPAP plus Project PM Peak Hour		Meets Peak Hour Warrant?
		LOS	Average Delay	LOS	Average Delay	
15. Brunswick Rd / SR 174 †● SB EB Left	SB Stop	C A	18.3 8.1	**F** A	**95.2** 8.0	Yes
16. Brunswick Rd / Project Driveway †● NB Left EB	EB Stop	A B	8.0 12.9	A C	8.9 15.7	No
17. E. Bennett Rd / Millsite Rd †● NB	NB Stop	A	8.7	A	8.7	No
18. Whispering Pines Ln / Centennial Site Driveway ‡◊ NB WB Left	NB Stop	B A	10.4 8.1	A A	9.1 7.5	No
19. Idaho Maryland Rd / Centennial Dr ‡Δ NB WB Left	NB Stop	B A	13.8 8.5	**F** A	**148.4** 8.6	Yes
20. Idaho Maryland Rd /Sutton Way ‡Δ	AWS	B	10.2	C	15.4	No
21. Sutton Way / Dorsey Dr ‡Δ	AWS	A	9.9	C	15.9	No
22. Dorsey Dr / SR 49 EB Ramps ‡Δ	Signal	B	15.2	B	13.7	N/A
23. Dorsey Dr / SR 49 WB Ramps ‡Δ	Signal	B	10.0	B	15.7	N/A
24. Brunswick Rd / Loma Rica Dr †□	Signal	C	20.9	B	14.9	N/A

AWS – all way stop
Bold indicates intersection operates below threshold
† Nevada County
‡Grass Valley

◊ 8:00 – 9:00 a.m. / 4:30 – 5:30 p.m.
♦ 8:00 – 9:00 a.m. / 4:15 – 5:15 p.m.
● 7:45 – 8:45 a.m. / 4:30 – 5:30 p.m.

Δ 8:00 – 9:00 a.m. / 3:30 – 5:30 p.m.
▲ 8:00 – 9:00 a.m. / 3:45 – 4:45 p.m.
□ 8:00 – 9:00 a.m. / 5:00 – 6:00 p.m.

TABLE 14B
EPAP PLUS PROJECT – CENTENNIAL SITE (SCENARIO #1)
PEAK HOUR LEVELS OF SERVICE AT INTERSECTIONS
(PROJECT TRAFFIC HOURS)

Location	Control	EPAP plus Project 6:30 – 7:30 AM		EPAP plus Project 3:30 – 4:30 PM		EPAP plus Project 6:30 – 7:30 PM		Meets Peak Hour Warrant?
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
1. Neal St / Tinloy St ‡	Signal	A	5.1	A	8.2	A	7.1	N/A
2. S. Auburn St / Tinloy St ‡	Signal	A	6.1	A	8.7	A	7.0	N/A
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp ‡	SB / WB Stop	A	3.8	A	6.3	A	4.0	Yes*
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp ‡	AWS	A	9.3	B	15.2	B	10.2	No
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps ‡	Roundabout	A	4.8	A	7.0	A	4.6	N/A
6. Idaho Maryland Rd / SR 49 EB Ramps ‡	AWS	C	17.2	C	23.7	B	10.3	Yes*
7. Idaho Maryland Rd / Railroad Ave ‡	AWS	B	11.5	C	17.0	A	8.9	No
8. E. Main St / Brunswick Rd – W. Olympia Dr ‡	Signal	A	5.9	B	13.4	A	9.0	N/A
9. Brunswick Rd / SR 49 WB Off-Ramp–Maltman Dr ‡	Signal	B	16.8	B	19.8	B	16.9	N/A
10. Brunswick Rd / SR 49 EB Ramps ‡	Signal	A	8.7	B	13.6	A	8.9	N/A
11. Brunswick Rd / Sutton Way ‡	Signal	A	5.2	C	22.0	A	9.2	N/A
12. Brunswick Rd / Idaho Maryland Rd ‡								
NB Left	EB/WB Stop	A	8.2	A	9.1	A	8.2	Yes*
SB Left		A	7.9	A	8.9	A	7.9	
EB		B	11.3	B	14.1	B	11.2	
WB		D	25.4	**F**	**98.2**	C	18.3	
13. Brunswick Rd / Whispering Pines Ln ‡								
NB Left	EB Stop	A	8.8	A	9.1	A	8.5	Yes*
EB		B	11.4	B	14.8	B	11.1	
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd †	AWS	B	12.7	C	20.7	B	12.4	Yes*

AWS – all way stop
Bold indicates intersection operates below threshold
* meets warrant in 3:30 p.m. hour

† Nevada County
‡Grass Valley

TABLE 14B (continued)
EPAP PLUS PROJECT – CENTENNIAL SITE (SCENARIO #1)
PEAK HOUR LEVELS OF SERVICE AT INTERSECTIONS
(PROJECT TRAFFIC HOURS)

Location	Control	EPAP plus Project 6:30 – 7:30 AM		EPAP plus Project 3:30 – 4:30 PM		EPAP plus Project 6:30 – 7:30 PM		Meets Peak Hour Warrant?
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
15. Brunswick Rd / SR 174 †	SB Stop							Yes*
SB		B	13.0	**E**	**38.1**	B	13.0	
EB Left		A	7.7	A	7.8	A	7.4	
16. Brunswick Rd / Project Driveway †	EB Stop							No
NB Left		A	7.8	A	8.4	A	8.2	
EB		B	11.5	B	12.5	B	11.7	
17. E. Bennett Rd / Millsite Rd †	NB Stop							No
NB		A	8.5	A	8.7	A	8.6	
18. Whispering Pines Ln / Centennial Site Driveway ‡	NB Stop							No
NB		A	9.6	A	9.0	A	8.7	
WB Left		A	7.8	A	7.5	A	7.4	
19. Idaho Maryland Rd / Centennial Dr ‡	NB Stop							Yes*
NB		B	12.2	**F**	**112.3**	B	10.8	
WB Left		A	8.4	A	8.5	A	7.7	
20. Idaho Maryland Rd /Sutton Way ‡	AWS	A	8.5	B	14.3	A	8.5	No
21. Sutton Way / Dorsey Dr ‡	AWS	A	8.2	C	15.7	A	9.3	No
22. Dorsey Dr / SR 49 EB Ramps ‡	Signal	A	9.3	B	14.0	A	8.3	N/A
23. Dorsey Dr / SR 49 WB Ramps ‡	Signal	A	6.2	B	15.9	A	7.4	N/A
24. Brunswick Rd / Loma Rica Dr †	Signal	B	11.5	B	14.7	A	8.5	N/A

AWS – all way stop
Bold indicates intersection operates below threshold
* meets warrant in 3:30 p.m. hour
† Nevada County
‡Grass Valley

Intersection Queues. Tables 15A and 15B present information regarding queuing at each study intersection under EPAP plus Project conditions. 95th percentile queues with lengths exceeding the available storage are highlighted. The 95th percentile queue exceeds available storage in 19 locations at 13 intersections considering the five analysis scenarios. Table 15B presents a comparison of EPAP plus Project, Scenario #1 to EPAP conditions. During "Plus Project" conditions no intersections will have a storage lane length that is greater than 25 feet when compared to the "No Project" condition. The intersections of Neal Street at Tinloy Street and Tinloy Street at S. Auburn Street have queues that will continue to exceed the available storage and back up through the adjacent intersection. Similar conditions will continue to exist at the westbound approach of the Idaho Maryland Road / SR 49 EB Ramps intersection and the eastbound approach of Brunswick Road at SR 49 Westbound Off-Ramp - Maltman Drive intersection. It is assumed that one additional vehicle (25') can store in the available left or right turn taper and this occurs at four locations. The queues in the westbound left turn lane at the Brunswick Road / Loma Rica Drive intersection will continue to exceed the available storage; however, it will not lengthen beyond the EPAP condition. None of the "Plus Project" condition queues are considered significant.

TABLE 15A
EPAP PLUS PROJECT QUEUES
CENTENNIAL SITE (SCENARIO #1)
PEAK HOURS

Location	Length*	EPAP plus Project AM Peak Hour Queue (feet)	EPAP plus Project PM Peak Hour Queue (feet)
1. Neal St / Tinloy St			
EB	70	116	116
WB	150	293	208
2. S. Auburn St / Tinloy St			
NB through	80	145	149
NB through-left	80	88	81
SB	75	102	141
WB	95	113	124
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp			
NB left turn	60	32	39
NB through	150	68	66
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp			
SB left turn	60	35	40
SB through	150	68	113

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 15A (continued)
EPAP PLUS PROJECT QUEUES
CENTENNIAL SITE (SCENARIO #1)
PEAK HOURS

Location	Length*	EPAP plus Project AM Peak Hour Queue (feet)	EPAP plus Project PM Peak Hour Queue (feet)
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps			
NB	---	28	29
SB	---	37	48
EB	---	99	64
WB	---	55	83
6. Idaho Maryland Rd / SR 49 EB Ramps			
NB right	---	263	73
NB left	355	98	50
WB	90	90	415
7. Idaho Maryland Rd / Railroad Ave			
EB	90	123	93
8. E. Main St / Brunswick Rd – W. Olympia Dr			
NB left	110	---	<25
NB right	125	66	123
SB left (2 lanes)	355	105	199
WB left (2 lanes)	150	91	91
WB right	150	105	154
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr			
NB left	100	51	85
NB right	100	76	148
SB left (2 lanes)	260	181	206
SB right	260	76	81
EB	160	139	208
WB left	145	99	102
10. Brunswick Rd / SR 49 EB Ramps			
NB left	200	230	226
NB right	---	212	257
11. Brunswick Rd / Sutton Way			
NB left (2 lanes)	280	106	265
SB left	190	67	120
SB right	180	---	---
EB left (2 lanes)	185	85	129
EB right	250	98	174
WB left	125	88	153

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 15A (continued)
EPAP PLUS PROJECT QUEUES
CENTENNIAL SITE (SCENARIO #1)
PEAK HOURS

Location	Length*	EPAP plus Project AM Peak Hour Queue (feet)	EPAP plus Project PM Peak Hour Queue (feet)
12. Brunswick Rd / Idaho Maryland Rd			
NB left	540	<25	30
SB left	120	<25	<25
EB right	---	38	53
WB left	60	170	90
13. Brunswick Rd / Whispering Pines Ln			
NB left	210	<25	<25
EB left	110	<25	38
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd			
NB left	225	<25	<25
SB left	260	<25	30
EB	---	<25	<25
WB	---	75	33
15. Brunswick Rd / SR 174			
SB left	90	60	415
EB left	130	<25	<25
16. Brunswick Rd / Project Driveway			
NB left	350	<25	<25
EB	---	<25	25
17. E. Bennett Rd / Millsite Rd			
NB right	---	<25	<25
18. Whispering Pines Ln / Project Driveway			
NB	---	<25	<25
WB left	100	<25	<25
19. Idaho Maryland Rd / Centennial Dr			
NB	---	<25	385
WB left	130	<25	<25
20. Idaho Maryland Rd /Sutton Way			
SB right	90	<25	48
SB left	---	<25	25
ÈB	---	38	115
WB	---	30	85

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 15A (continued)
EPAP PLUS PROJECT QUEUES
CENTENNIAL SITE (SCENARIO #1)
PEAK HOURS

Location	Length*	EPAP plus Project AM Peak Hour Queue (feet)	EPAP plus Project PM Peak Hour Queue (feet)
21. Sutton Way / Dorsey Dr			
SB right	120	<25	38
SB thru	---	<25	45
NB	---	25	100
EB	---	<25	113
22. Dorsey Dr / SR 49 EB Ramps			
NB Left (2 lanes)	215	217	108
NB right	215	75	102
EB left	180	106	156
23. Dorsey Dr / SR 49 EB Ramps			
SB right	400	68	62
SB left-thru	400	101	156
EB right	155	78	203
WB left	180	130	184
24. Dorsey Dr / SR 49 EB Ramps			
NB right	410	33	<25
SB left	400	212	103
WB left	100	59	126

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 15B
EPAP PLUS PROJECT QUEUES
CENTENNIAL SITE (SCENARIO #1)
(PROJECT TRAFFIC HOURS)

Location	Length*	No Project EPAP 6:30 – 7:30 AM Queue (feet)	Plus Project EPAP 6:30 – 7:30 AM Queue (feet)	No Project EPAP 3:30 – 4:30 PM Queue (feet)	Plus Project EPAP 3:30 – 4:30 PM Queue (feet)	No Project EPAP 6:30 – 7:30 PM Queue (feet)	Plus Project EPAP 6:30 – 7:30 PM Queue (feet)
1. Neal St / Tinloy St							
EB	70	67	69	105	103	99	99
WB	150	86	86	139	126	95	92
2. S. Auburn St / Tinloy St							
NB through	80	78	73	115	117	78	73
NB through-left	80	55	53	76	78	53	52
SB	75	78	76	109	109	101	101
WB	95	84	85	99	99	79	75
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp							
NB left turn	60	27	28	41	42	31	28
NB through	150	46	45	54	56	47	47
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp							
SB left turn	60	<25	<25	38	38	<25	<25
SB through	150	<25	<25	95	95	35	35
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps							
NB	---	<25	<25	26	26	<25	<25
SB	---	<25	<25	49	51	<25	<25
EB	---	30	32	63	60	28	29
WB	---	<25	<25	53	53	26	27

Highlighted values indicate queue length in excess of available storage with 25-feet or less increase from No Project condition
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 15B (continued)
EPAP PLUS PROJECT QUEUES
CENTENNIAL SITE (SCENARIO #1)
(PROJECT TRAFFIC HOURS)

Location	Length*	No Project EPAP 6:30 – 7:30 AM Queue (feet)	Plus Project EPAP 6:30 – 7:30 AM Queue (feet)	No Project EPAP 3:30 – 4:30 PM Queue (feet)	Plus Project EPAP 3:30 – 4:30 PM Queue (feet)	No Project EPAP 6:30 – 7:30 PM Queue (feet)	Plus Project EPAP 6:30 – 7:30 PM Queue (feet)
6. Idaho Maryland Rd / SR 49 EB Ramps							
NB right	---	120	163	55	55	<25	<25
NB left	355	33	38	63	63	<25	<25
WB	90	30	35	203	220	33	40
7. Idaho Maryland Rd / Railroad Ave							
EB	90	75	88	80	83	<25	<25
8. E. Main St / Brunswick Rd – W. Olympia Dr							
NB left	110	<25	<25	<25	<25	<25	<25
NB right	125	43	42	119	114	60	55
SB left (2 lanes)	355	60	66	179	173	99	100
WB left (2 lanes)	150	45	41	90	88	61	63
WB right	150	54	57	153	148	71	72
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr							
NB left	100	<25	<25	75	77	57	54
NB right	100	32	28	135	131	85	82
SB left (2 lanes)	260	117	125	191	197	136	135
SB right	260	47	50	86	79	52	55
EB	160	47	63	210	207	123	135
WB left	145	62	62	107	103	89	96

Highlighted values indicate queue length in excess of available storage with 25-feet or less increase from No Project condition
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 15B (continued)
EPAP PLUS PROJECT QUEUES
CENTENNIAL SITE (SCENARIO #1)
(PROJECT TRAFFIC HOURS)

Location	Length*	No Project EPAP 6:30 – 7:30 AM Queue (feet)	Plus Project EPAP 6:30 – 7:30 AM Queue (feet)	No Project EPAP 3:30 – 4:30 PM Queue (feet)	Plus Project EPAP 3:30 – 4:30 PM Queue (feet)	No Project EPAP 6:30 – 7:30 PM Queue (feet)	Plus Project EPAP 6:30 – 7:30 PM Queue (feet)
10. Brunswick Rd / SR 49 EB Ramps							
NB left	200	165	159	225	221	177	177
NB right	---	93	98	245	250	91	96
11. Brunswick Rd / Sutton Way							
NB left (2 lanes)	280	56	53	241	247	110	112
SB left	190	43	41	102	110	55	57
SB right	180	---	---	---	<25	---	---
EB left (2 lanes)	185	59	55	124	122	67	64
EB right	250	45	47	150	155	87	82
WB left	125	44	44	144	137	69	64
12. Brunswick Rd / Idaho Maryland Rd							
NB left	540	<25	<25	<25	<25	<25	<25
SB left	120	<25	<25	<25	<25	<25	<25
EB right	---	<25	25	40	40	<25	<25
WB left	60	25	40	68	73	<25	<25
13. Brunswick Rd / Whispering Pines Ln							
NB left	210	<25	<25	<25	<25	<25	<25
EB left	110	<25	<25	<25	<25	<25	<25

Highlighted values indicate queue length in excess of available storage with 25-feet or less increase from No Project condition
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 15B (continued)
EPAP PLUS PROJECT QUEUES
CENTENNIAL SITE (SCENARIO #1)
(PROJECT TRAFFIC HOURS)

Location	Length*	No Project EPAP 6:30 – 7:30 AM Queue (feet)	Plus Project EPAP 6:30 – 7:30 AM Queue (feet)	No Project EPAP 3:30 – 4:30 PM Queue (feet)	Plus Project EPAP 3:30 – 4:30 PM Queue (feet)	No Project EPAP 6:30 – 7:30 PM Queue (feet)	Plus Project EPAP 6:30 – 7:30 PM Queue (feet)
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd							
NB left	225	<25	<25	<25	<25	<25	<25
SB left	260	<25	<25	<25	<25	<25	<25
EB	---	<25	<25	<25	<25	<25	<25
WB	---	<25	<25	<25	<25	<25	<25
15. Brunswick Rd / SR 174							
SB left	90	25	30	205	215	43	48
EB left	130	<25	<25	<25	<25	<25	<25
16. Brunswick Rd / Project Driveway							
NB left	350	---	<25	---	<25	---	<25
EB	---	---	<25	---	<25	---	<25
17. E. Bennett Rd / Millsite Rd							
NB right	---	---	<25	---	<25	---	<25
18. Whispering Pines Ln / Project Driveway							
NB	---	--	<25	---	<25	---	<25
WB left	100	---	<25	---	<25	---	<25
19. Idaho Maryland Rd / Centennial Dr							
NB	---	<25	<25	315	335	<25	<25
WB left	130	<25	<25	<25	<25	<25	<25

Highlighted values indicate queue length in excess of available storage with 25-feet or less increase from No Project condition
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 15B (continued)
EPAP PLUS PROJECT QUEUES
CENTENNIAL SITE (SCENARIO #1)
(PROJECT TRAFFIC HOURS)

Location	Length*	No Project EPAP 6:30 – 7:30 AM Queue (feet)	Plus Project EPAP 6:30 – 7:30 AM Queue (feet)	No Project EPAP 3:30 – 4:30 PM Queue (feet)	Plus Project EPAP 3:30 – 4:30 PM Queue (feet)	No Project EPAP 6:30 – 7:30 PM Queue (feet)	Plus Project EPAP 6:30 – 7:30 PM Queue (feet)
20. Idaho Maryland Rd /Sutton Way							
SB right	90	<25	<25	45	45	<25	<25
SB left	---	<25	<25	<25	<25	<25	<25
ÈB	---	<25	25	98	100	<25	<25
WB	---	<25	<25	63	70	<25	<25
21. Sutton Way / Dorsey Dr							
SB right	120	<25	<25	38	38	<25	<25
SB thru	---	<25	<25	43	45	<25	<25
NB	---	<25	<25	98	98	<25	<25
EB	---	<25	<25	110	110	40	40
22. Dorsey Dr / SR 49 EB Ramps							
NB Left (2 lanes)	215	112	113	104	108	56	60
NB right	215	41	43	98	96	48	51
EB left	180	60	60	155	150	56	66
23. Dorsey Dr / SR 49 EB Ramps							
SB right	400	50	50	58	60	48	48
SB left-thru	400	53	52	154	165	67	68
EB right	155	36	40	199	205	41	44
WB left	180	81	81	184	183	84	82
24. Brunswick Rd / Loma Rica Dr							
NB right	410	31	31	26	26	<25	<25
SB left	400	133	146	135	135	64	68
WB left	100	32	35	160	160	35	38

Highlighted values indicate queue length in excess of available storage with 25-feet or less increase from No Project condition
* - longest lane for multiple turn lane approaches Queuing distances based on stochastic modeling

EPAP Plus Project Conditions (Scenario #1) Roadway Segment Levels of Service. Table 16 summarizes the Levels of Service based on the EPAP plus Project traffic volumes on study area roads with the existing roadway configuration. All segments along Brunswick Road and E. Bennett Road will continue to operate at LOS D or better while the SR 174 segment will continue to operate at LOS E. The SR 174 segment exceeds the LOS C threshold in both directions.

TABLE 16
EPAP PLUS PROJECT
CENTENNIAL SITE (SCENARIO #1)
ROADWAY SEGMENT LEVELS OF SERVICE

Roadway	Location	Facility Classification	ATS/PTSF/LOS EPAP plus Project PM Peak Hour
Brunswick Rd	SR 49 to Whispering Pines Ln	Class I Highway	
	NB		31.2 / 77.1 / D
	SB		31.2 / 78.4 / D
	Whispering Pines Ln to E. Bennett Rd	Class I Highway	
	NB		36.1 / 72.5 / D
	SB		35.5 / 83.6 / D
	E. Bennett Rd to Project Driveway	Class I Highway	
	NB		34.9 / 68.3 / D
	SB		34.8 / 80.1 / D
	Project Driveway to SR 174	Class I Highway	
	NB		33.7 / 67.9 / D
	SB		33.2 / 83.9 / D
E. Bennett Rd	Project Driveway to Brunswick Rd	Class III Highway	
	EB		36.1 / 37.6 / B
	WB		34.8 / 53.4 / B
SR 174	Brunswick Rd to Empire St	Class I Highway	
	EB		**30.2 / 59.8 / E**
	WB		**29.2 / 78.2 / E**

ATS – average travel speed
PTSF – percent time spent following
LOS – level of service
Bold indicates LOS threshold exceeded

VI.2. EPAP Plus Project Conditions (Scenario #2)

Scenario #2 considers transporting of engineered fill to construction sites accessible via SR 49/20.

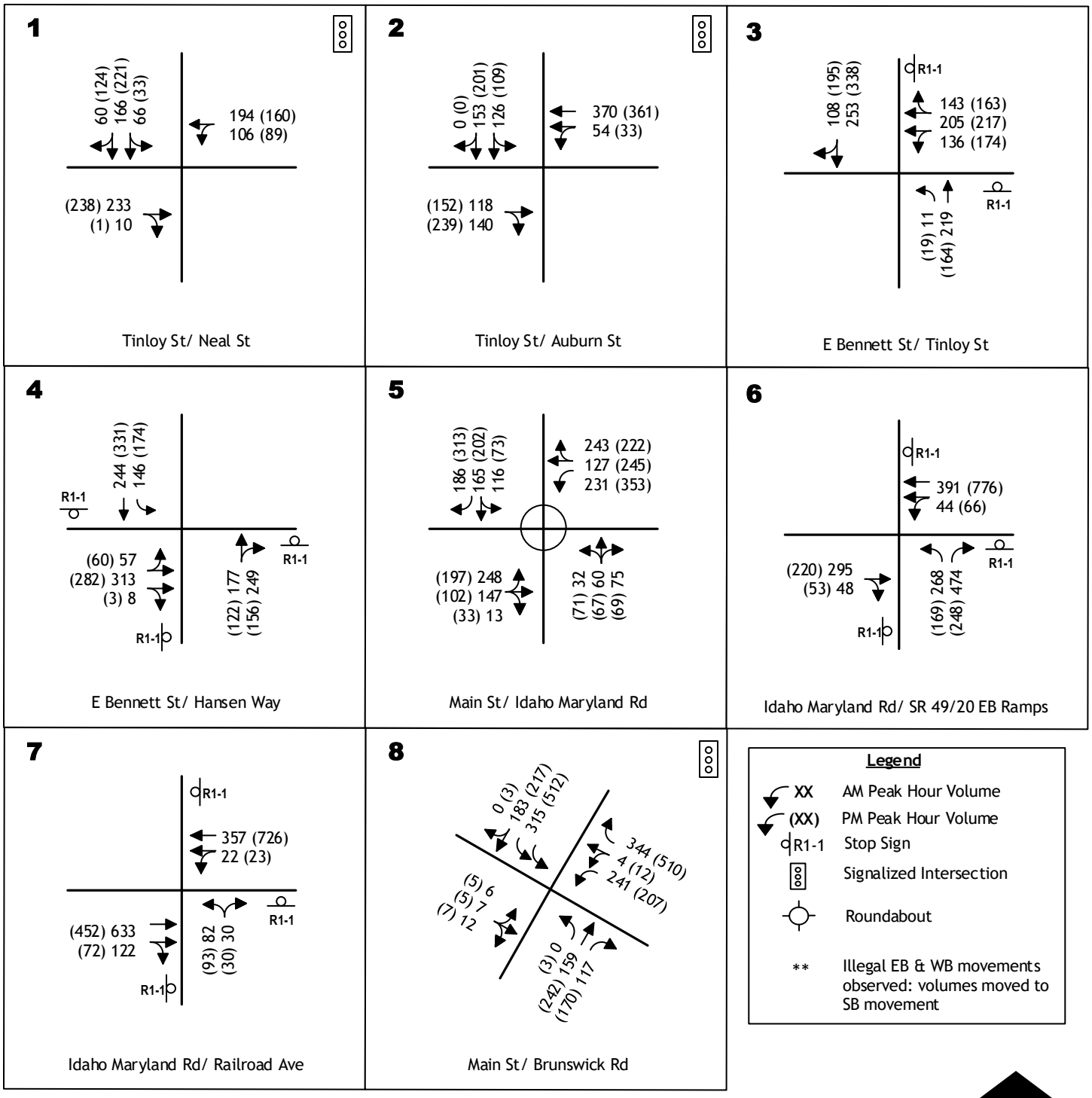
Traffic Volumes. The LOS impacts of the Idaho-Maryland Mine project have been identified by superimposing project traffic onto EPAP conditions. Figures 10A through 10F display the "EPAP Plus Project" traffic volumes at each study intersection for each of the five study time periods.

EPAP plus Project volumes under Scenario #2 were used to recalculate operating Levels of Service at the study intersections. No roadway improvements at the study area intersections, other than those incorporated as part of the EPAP scenario, were identified. Tables 17A and 17B summarize operating Levels of Service at the study area intersections for each of the five study time periods.

During the peak hour scenario, three intersections will continue to operate at unacceptable Levels of Service, at LOS E or F, which include Brunswick Road at Idaho Maryland Road, Brunswick Road at SR 174, and Idaho Maryland Road at Centennial Drive. Two additional intersections will decline to LOS E, Idaho Maryland Road at SR 49/20 Eastbound Ramps and Brunswick Road at E. Bennett Road – Greenhorn Road.

During the project traffic hours, when the project employee traffic occurs, three intersections will operate below the LOS threshold. These intersections include the Brunswick Road at Idaho Maryland Road, Brunswick Road at SR 174, and Idaho Maryland Road at Centennial Drive.

Seven intersections will meet the peak hour signal warrant during the a.m. and p.m. peak hour scenarios. These include E. Bennett Road at Tinloy Street, Idaho Maryland Road at SR 49/20 EB Ramps, Brunswick Road at Idaho Maryland Road, Brunswick Road at Whispering Pines Lane, Brunswick Road at E. Bennett Road-Greenhorn Road, Brunswick Road at SR 174 and Idaho Maryland Road at Centennial Drive. The Idaho Maryland Road / SR 49/20 EB Ramps intersection, Brunswick Road / Idaho Maryland Road intersection, Brunswick Road / E. Bennett Road-Greenhorn Road intersection, Brunswick Road / SR 174 intersection and Idaho Maryland Road at Centennial Drive intersection also operate below the accepted LOS D threshold. While the Brunswick Road / Whispering Pines Lane intersection meets the peak hour signal warrant it operates acceptably. During the project hour analyses the same seven intersections will meet the peak hour signal warrant; however, only the Brunswick Road / Idaho Maryland Road intersection, the SR 174 at Brunswick Road intersection and the Idaho Maryland Road at Centennial Drive intersection will operate below the accepted LOS D threshold.

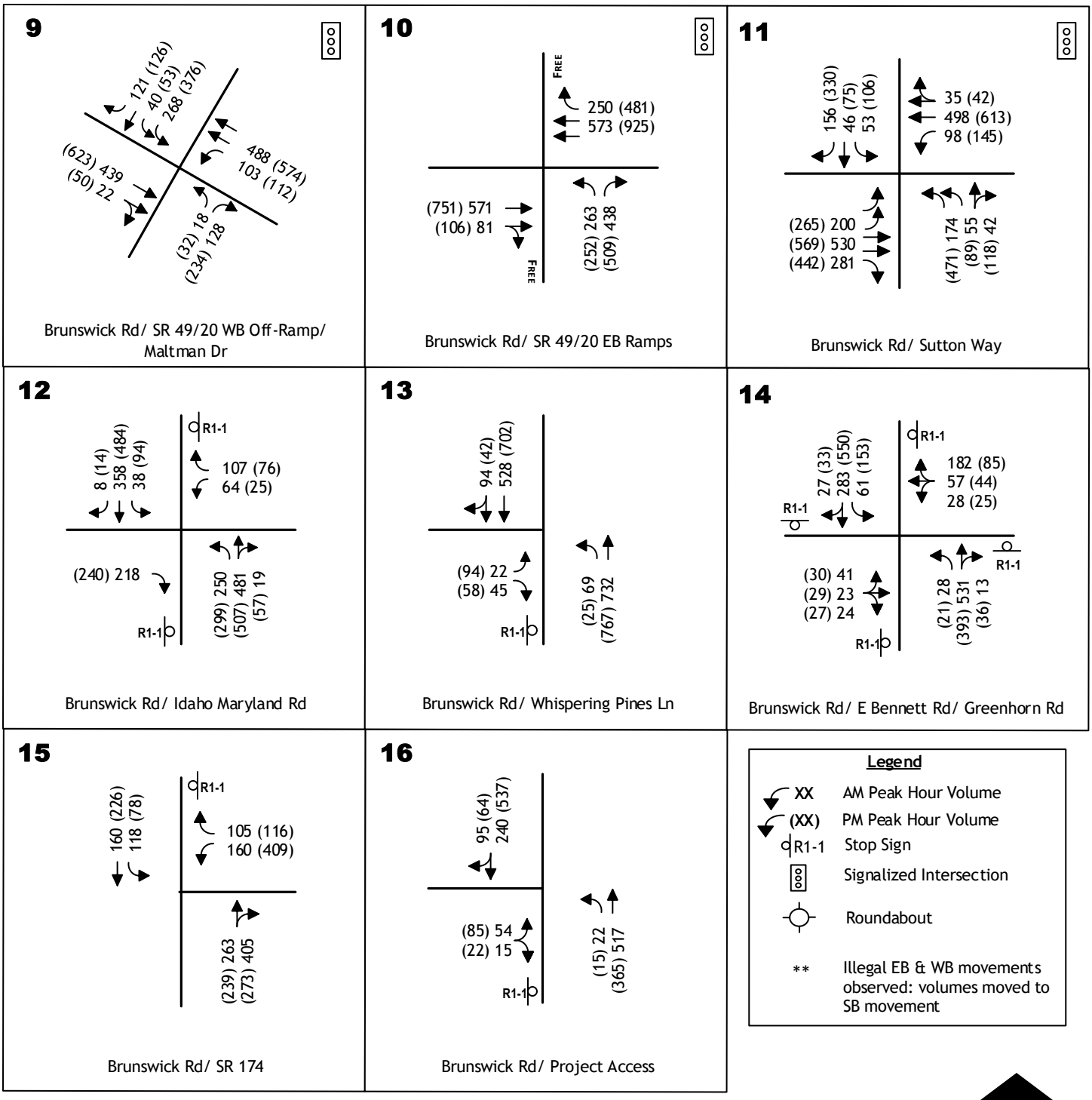


AM/PM PEAK HOURS EPAP PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS
(TO SR 49)

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 10a

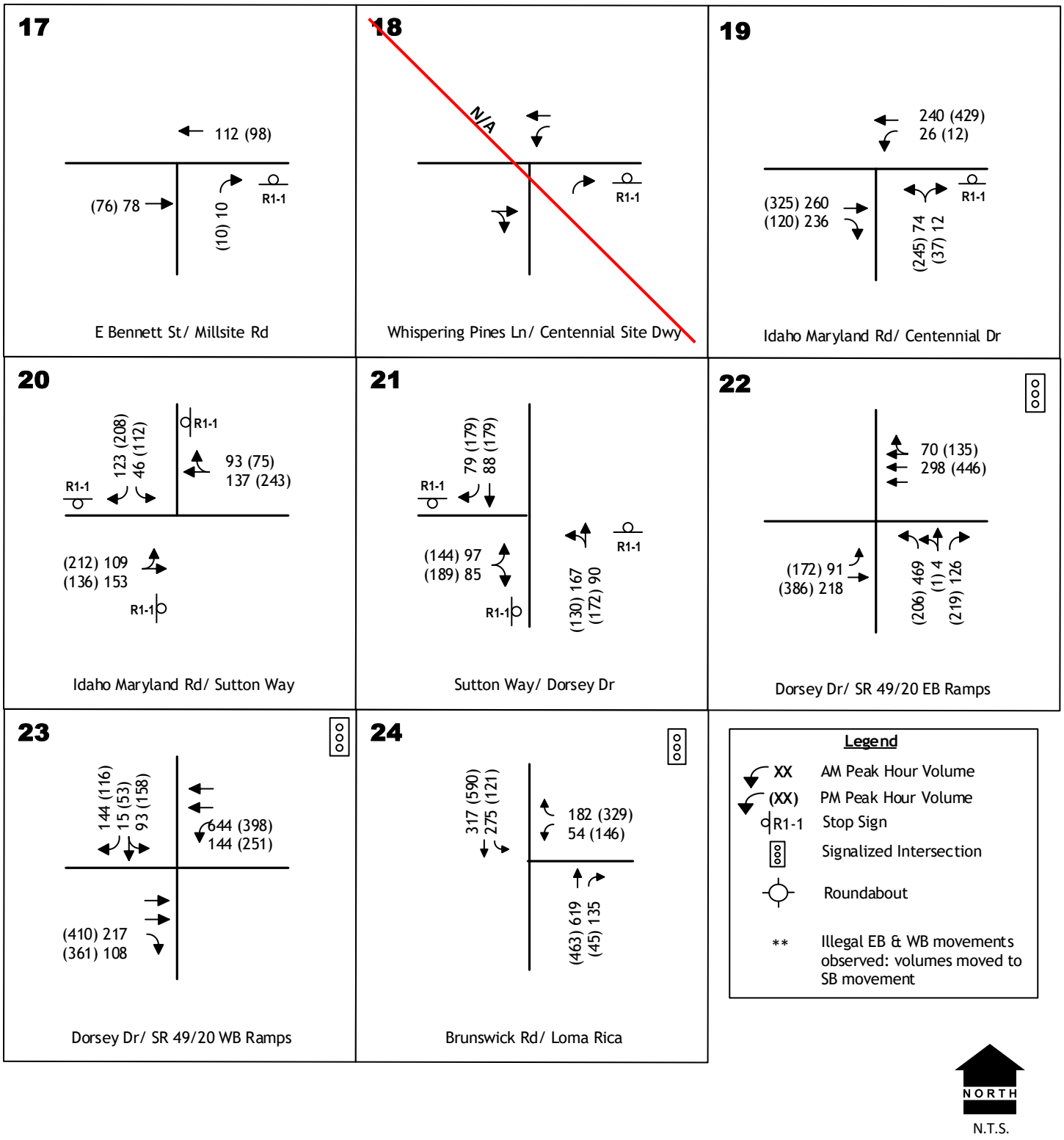


AM/PM PEAK HOURS EPAP PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS
(TO SR 49)

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 10b

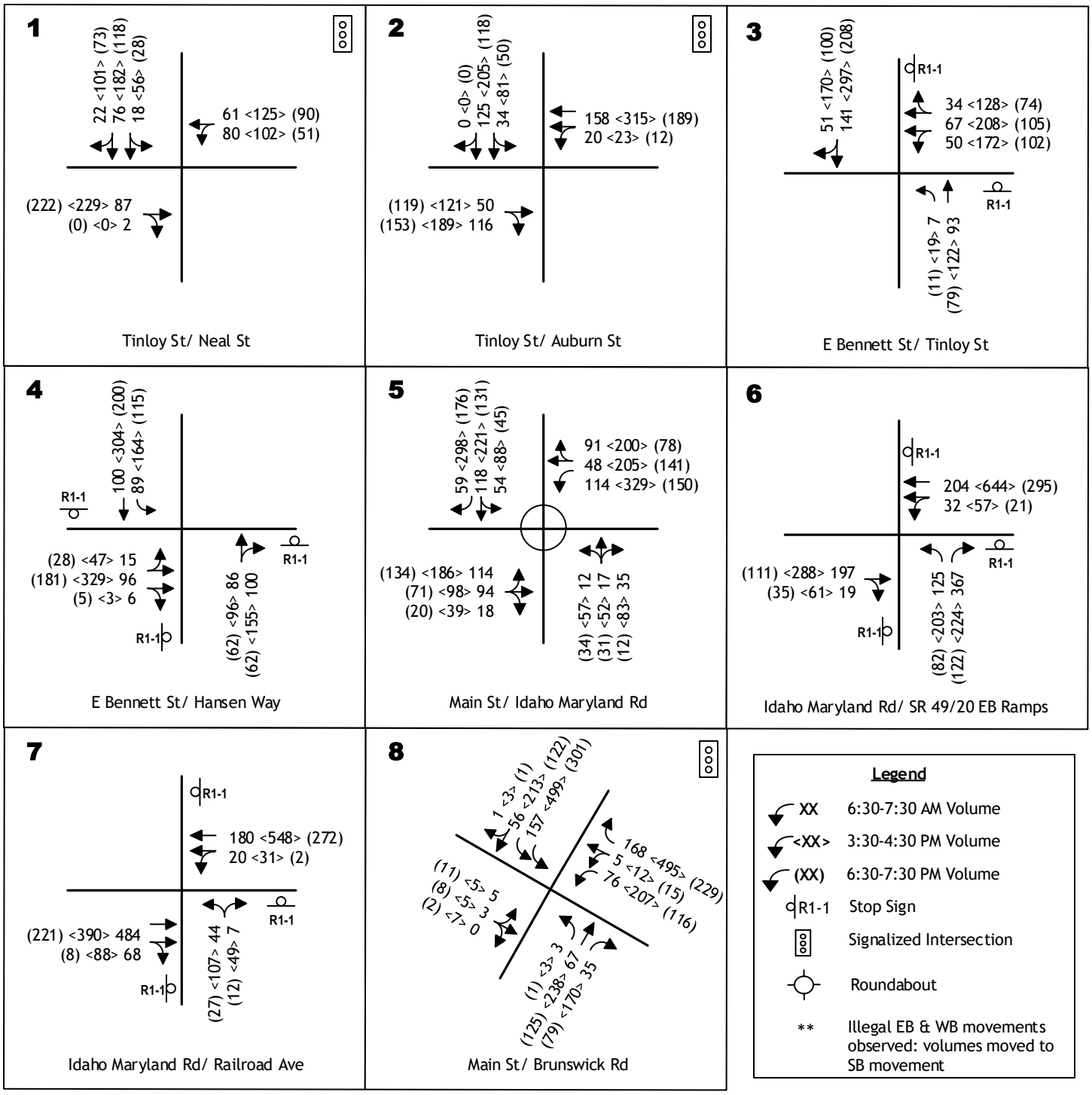


AM/PM PEAK HOURS EPAP PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS
(TO SR 49)

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 10c

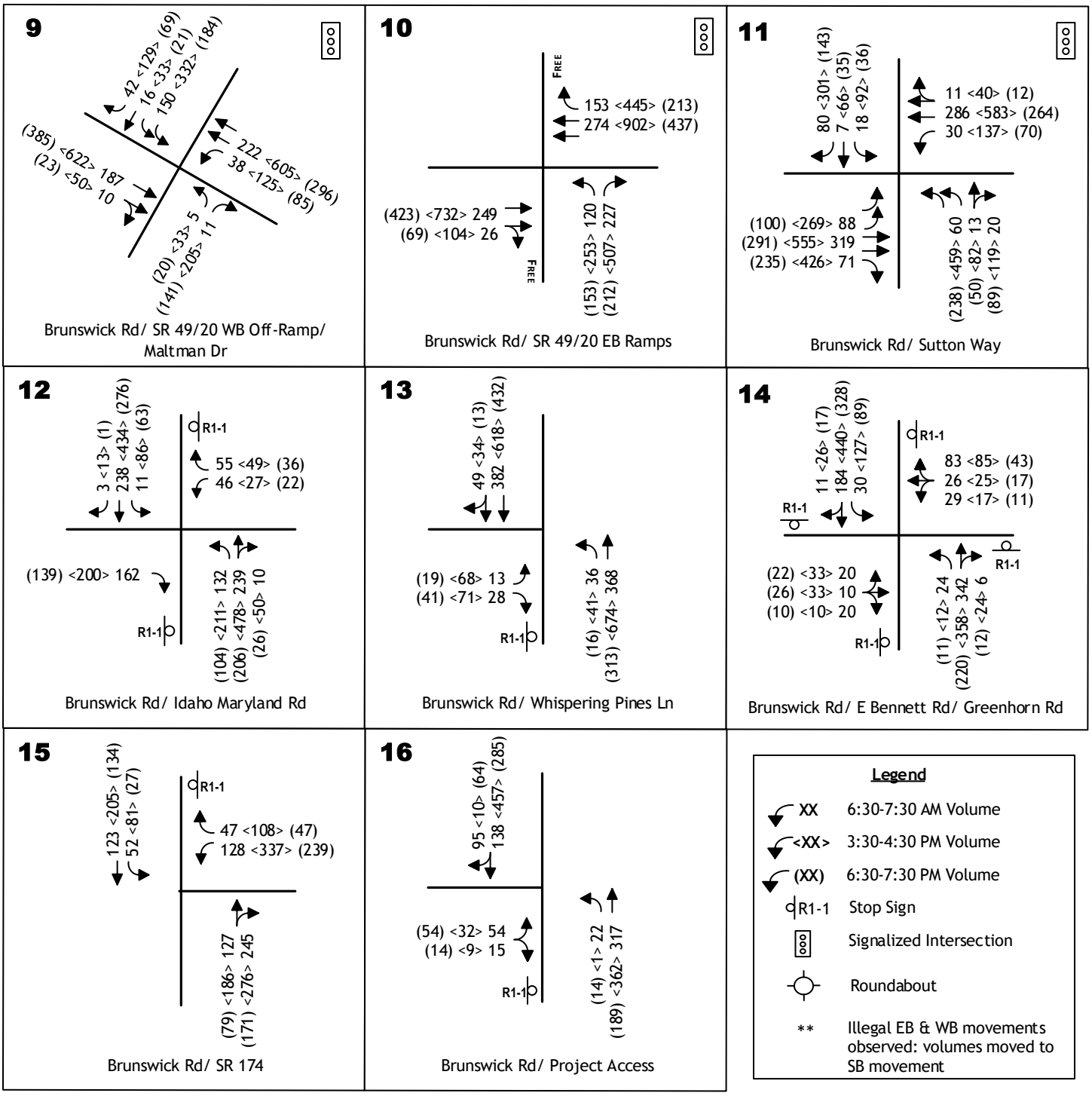


PROJECT TRAFFIC HOURS EPAP PLUS PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS (TO SR 49)

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 10d

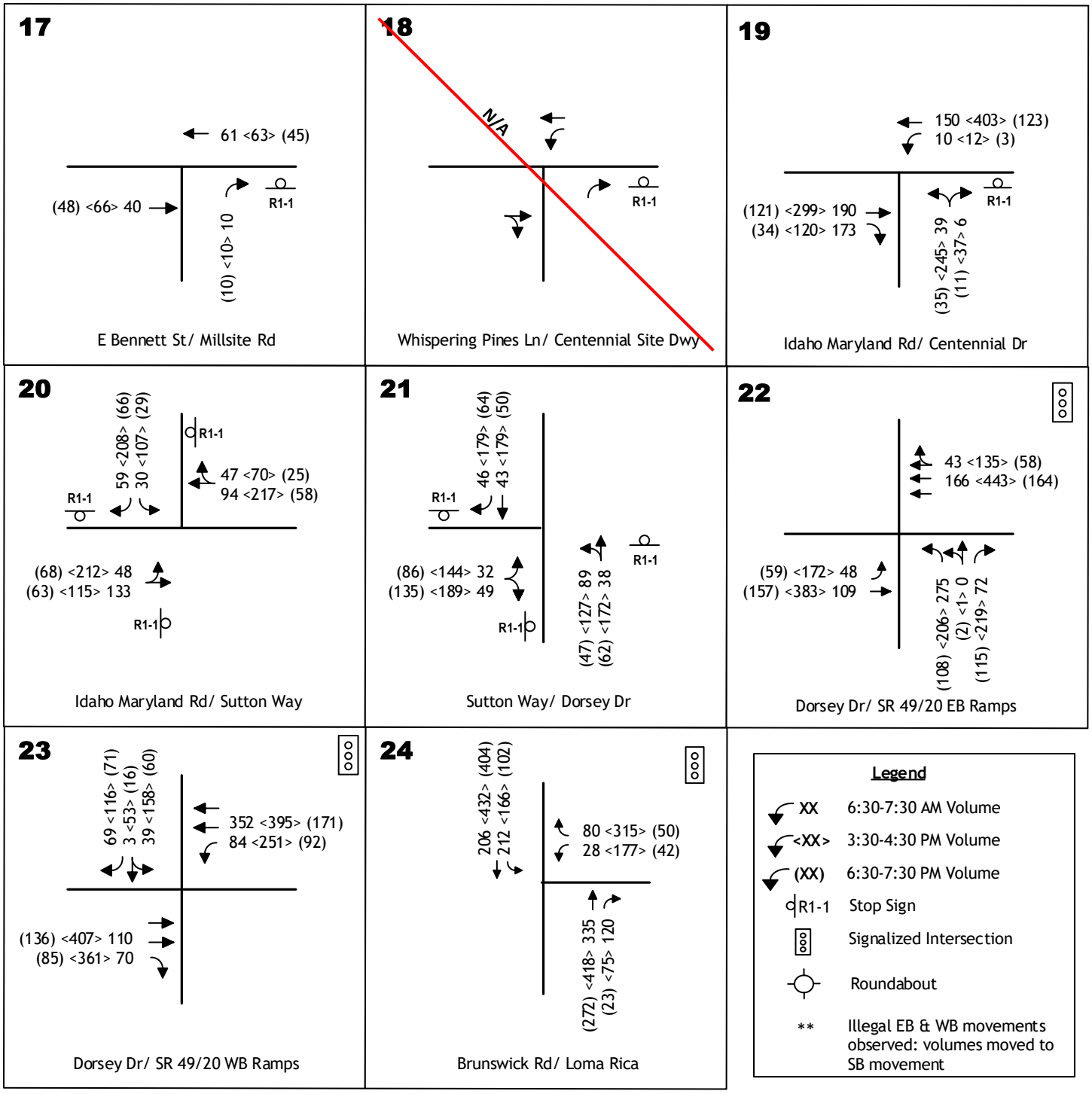


PROJECT TRAFFIC HOURS EPAP PLUS PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS (TO SR 49)

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 10e



PROJECT TRAFFIC HOURS PROJECT TRIPS
TRAFFIC VOLUMES AND LANE CONFIGURATIONS
(TO SR 49)

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 10f

TABLE 17A
EPAP PLUS PROJECT – SR 49 (SCENARIO #2)
LEVELS OF SERVICE AT INTERSECTIONS
(PEAK HOURS)

Location	Control	EPAP plus Project AM Peak Hour		EPAP plus Project PM Peak Hour		Meets Peak Hour Warrant?
		LOS	Average Delay	LOS	Average Delay	
1. Neal St / Tinloy St ‡◊	Signal	B	13.3	B	11.9	N/A
2. Auburn St / Tinloy St ‡◊	Signal	B	10.2	B	10.7	N/A
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp ‡◊	SB / WB Stop	A	6.2	A	7.3	Yes
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp ‡◊	AWS	C	20.0	C	16.1	No
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps ‡◊	Roundabout	A	7.8	A	7.6	N/A
6. Idaho Maryland Rd / SR 49 EB Ramps ‡◊	AWS	D	27.8	**E**	**38.9**	Yes
7. Idaho Maryland Rd / Railroad Ave ‡◊	AWS	B	14.0	C	22.3	No
8. E. Main St / Brunswick Rd – W. Olympia Dr ‡Δ	Signal	B	10.5	B	15.2	N/A
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr ‡♦	Signal	B	17.5	C	21.6	N/A
10. Brunswick Rd / SR 49 EB Ramps ‡▲	Signal	B	12.7	B	13.5	N/A
11. Brunswick Rd / Sutton Way ‡▲	Signal	B	12.6	C	23.9	N/A
12. Brunswick Rd / Idaho Maryland Rd ‡●						
NB Left	EB/WB Stop	A	9.0	A	9.8	Yes
SB Left		A	8.6	A	9.0	
EB		B	13.3	C	16.0	
WB		**F**	**201.7**	**F**	**176.6**	
13. Brunswick Rd / Whispering Pines Ln ‡●						
NB Left	EB Stop	A	9.4	A	9.5	Yes
EB		B	13.6	C	19.0	
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd †●	AWS	**E**	**47.3**	**E**	**37.5**	Yes

AWS – all way stop
Bold indicates intersection operates below threshold
† Nevada County
‡Grass Valley

◊ 8:00 – 9:00 a.m. / 4:30 – 5:30 p.m.
♦ 8:00 – 9:00 a.m. / 4:15 – 5:15 p.m.
● 7:45 – 8:45 a.m. / 4:30 – 5:30 p.m.

Δ 8:00 – 9:00 a.m. / 3:30 – 5:30 p.m.
▲ 8:00 – 9:00 a.m. / 3:45 – 4:45 p.m.
□ 8:00 – 9:00 a.m. / 5:00 – 6:00 p.m.

TABLE 17A (continued)
EPAP PLUS PROJECT – SR 49 (SCENARIO #2)
LEVELS OF SERVICE AT INTERSECTIONS
(PEAK HOURS)

Location	Control	EPAP plus Project AM Peak Hour		EPAP plus Project PM Peak Hour		Meets Peak Hour Warrant?
		LOS	Average Delay	LOS	Average Delay	
15. Brunswick Rd / SR 174 †● SB EB Left	SB Stop	C A	18.3 8.1	**F** A	**95.2** 8.0	Yes
16. Brunswick Rd / Project Driveway †● NB Left EB	EB Stop	A B	8.0 12.9	A C	8.9 15.7	No
17. E. Bennett Rd / Millsite Rd †● NB	NB Stop	A	8.7	A	8.7	No
18. Whispering Pines Ln / Centennial Site Driveway	Not Applicable					
19. Idaho Maryland Rd / Centennial Dr ‡Δ NB WB Left	NB Stop	B A	13.8 8.5	**F** A	**148.4** 8.6	Yes
20. Idaho Maryland Rd /Sutton Way ‡Δ	AWS	B	10.2	C	15.4	No
21. Sutton Way / Dorsey Dr ‡Δ	AWS	A	9.9	C	15.9	No
22. Dorsey Dr / SR 49 EB Ramps ‡Δ	Signal	B	15.5	B	13.6	N/A
23. Dorsey Dr / SR 49 WB Ramps ‡Δ	Signal	B	10.0	B	15.0	N/A
24. Brunswick Rd / Loma Rica Dr †□	Signal	C	20.9	B	14.9	N/A

AWS – all way stop
Bold indicates intersection operates below threshold
† Nevada County
‡Grass Valley

◊ 8:00 – 9:00 a.m. / 4:30 – 5:30 p.m.
♦ 8:00 – 9:00 a.m. / 4:15 – 5:15 p.m.
● 7:45 – 8:45 a.m. / 4:30 – 5:30 p.m.

Δ 8:00 – 9:00 a.m. / 3:30 – 5:30 p.m.
▲ 8:00 – 9:00 a.m. / 3:45 – 4:45 p.m.
□ 8:00 – 9:00 a.m. / 5:00 – 6:00 p.m.

TABLE 17B
EPAP PLUS PROJECT –SR 49 (SCENARIO #2)
PEAK HOUR LEVELS OF SERVICE AT INTERSECTIONS
(PROJECT TRAFFIC HOURS)

Location	Control	EPAP plus Project 6:30 – 7:30 AM		EPAP plus Project 3:30 – 4:30 PM		EPAP plus Project 6:30 – 7:30 PM		Meets Peak Hour Warrant?
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
1. Neal St / Tinloy St ‡	Signal	A	5.0	A	8.6	A	6.8	N/A
2. S. Auburn St / Tinloy St ‡	Signal	A	6.2	A	8.6	A	7.0	N/A
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp ‡	SB / WB Stop	A	3.8	A	6.4	A	4.1	Yes*
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp ‡	AWS	A	9.3	B	15.2	B	10.2	No
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps ‡	Roundabout	A	4.8	A	7.0	A	4.6	N/A
6. Idaho Maryland Rd / SR 49 EB Ramps ‡	AWS	C	17.2	C	23.7	B	10.3	Yes*
7. Idaho Maryland Rd / Railroad Ave ‡	AWS	B	11.5	C	17.0	A	8.9	No
8. E. Main St / Brunswick Rd – W. Olympia Dr ‡	Signal	A	6.1	B	13.5	A	9.0	N/A
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr ‡	Signal	B	16.8	C	20.3	B	16.4	N/A
10. Brunswick Rd / SR 49 EB Ramps ‡	Signal	A	8.7	B	14.0	A	8.8	N/A
11. Brunswick Rd / Sutton Way ‡	Signal	A	5.3	C	22.1	A	9.6	N/A
12. Brunswick Rd / Idaho Maryland Rd ‡								
NB Left	EB/WB Stop	A	8.2	A	9.2	A	8.2	Yes*
SB Left		A	7.9	A	8.9	A	7.9	
EB		B	11.5	B	14.3	B	11.3	
WB		D	26.7	**F**	**107.3**	C	18.8	
13. Brunswick Rd / Whispering Pines Ln ‡								
NB Left	EB Stop	A	8.8	A	9.1	A	8.5	Yes*
EB		B	11.5	B	14.9	B	11.2	
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd †	AWS	B	12.7	C	20.7	B	12.4	Yes*

AWS – all way stop
Bold indicates intersection operates below threshold
† Nevada County
‡Grass Valley

*meets warrant in 3:30 p.m. hour

TABLE 17B (continued)
EPAP PLUS PROJECT –SR 49 (SCENARIO #2)
PEAK HOUR LEVELS OF SERVICE AT INTERSECTIONS
(PROJECT TRAFFIC HOURS)

Location	Control	EPAP plus Project 6:30 – 7:30 AM		EPAP plus Project 3:30 – 4:30 PM		EPAP plus Project 6:30 – 7:30 PM		Meets Peak Hour Warrant?
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
15. Brunswick Rd / SR 174 †	SB Stop							Yes*
SB		B	13.0	**E**	**38.1**	B	13.0	
EB Left		A	7.7	A	7.8	A	7.4	
16. Brunswick Rd / Project Driveway †	EB Stop							No
NB Left		A	7.8	A	8.4	A	8.2	
EB		B	11.5	B	12.5	B	11.7	
17. E. Bennett Rd / Millsite Rd †	NB Stop							No
NB		A	8.5	A	8.7	A	8.6	
18. Whispering Pines Ln / Centennial Site Driveway	Not Applicable							
19. Idaho Maryland Rd / Centennial Dr ‡	NB Stop							Yes*
NB		B	12.2	**F**	**112.3**	B	10.8	
WB Left		A	8.4	A	8.5	A	7.7	
20. Idaho Maryland Rd /Sutton Way ‡	AWS	A	8.5	B	14.3	A	8.5	No
21. Sutton Way / Dorsey Dr ‡	AWS	A	8.2	C	15.7	A	9.3	No
22. Dorsey Dr / SR 49 EB Ramps ‡	Signal	A	9.0	B	13.7	A	8.4	N/A
23. Dorsey Dr / SR 49 WB Ramps ‡	Signal	A	6.1	B	15.6	A	7.3	N/A
24. Brunswick Rd / Loma Rica Dr †	Signal	B	11.5	B	14.7	A	8.5	N/A

AWS – all way stop
Bold indicates intersection operates below threshold
* meets warrant in 3:30 p.m. hour
† Nevada County
‡Grass Valley

Intersection Queues. Tables 18A and 18B present information regarding queuing at each study intersection under EPAP plus Project conditions. 95th percentile queues with lengths exceeding the available storage are highlighted. The 95th percentile queue exceeds available storage in 19 locations at 13 intersections considering the five analysis scenarios. Table 18B presents a comparison of EPAP plus Project, Scenario #2 to EPAP conditions. During "Plus Project" conditions no intersections will have a storage length that is greater than 25 feet when compared to the "No Project" condition. The intersections of Neal Street at Tinloy Street and Tinloy Street at S. Auburn Street have queues that will continue to exceed the available storage and back up through the adjacent intersection. Similar conditions will continue to exist at the westbound approach of the Idaho Maryland Rd / SR 49 EB Ramps intersection and the eastbound approach of Brunswick Road at SR 49 Westbound Off-Ramp - Maltman Drive intersection. It is assumed that one additional vehicle (25') can store in the available left or right turn taper and this occurs at five locations. The queues in the westbound left turn lane at the Brunswick Road / Loma Rica Drive intersection will continue to exceed the available storage; however, it will not lengthen beyond the EPAP condition. None of the "Plus Project" condition queues are considered significant.

TABLE 18A
EPAP PLUS PROJECT QUEUES
SR 49 (SCENARIO #2)
PEAK HOURS

Location	Length*	EPAP plus Project AM Peak Hour Queue (feet)	EPAP plus Project PM Peak Hour Queue (feet)
1. Neal St / Tinloy St			
EB	70	114	116
WB	150	214	193
2. S. Auburn St / Tinloy St			
NB through	80	146	147
NB through-left	80	91	78
SB	75	97	141
WB	95	111	117
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp			
NB left turn	60	33	41
NB through	150	72	67
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp			
SB left turn	60	35	40
SB through	150	68	113

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 18A (continued)
EPAP PLUS PROJECT QUEUES
SR 49 (SCENARIO #2)
PEAK HOURS

Location	Length*	EPAP plus Project AM Peak Hour Queue (feet)	EPAP plus Project PM Peak Hour Queue (feet)
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps			
NB	---	28	29
SB	---	37	47
EB	---	99	64
WB	---	55	83
6. Idaho Maryland Rd / SR 49 EB Ramps			
NB right	---	263	73
NB left	355	98	50
WB	90	90	415
7. Idaho Maryland Rd / Railroad Ave			
EB	90	123	93
8. E. Main St / Brunswick Rd – W. Olympia Dr			
NB left	110	---	26
NB right	125	77	128
SB left (2 lanes)	355	114	204
WB left (2 lanes)	150	83	93
WB right	150	103	156
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr			
NB left	100	51	86
NB right	100	81	158
SB left (2 lanes)	260	172	210
SB right	260	71	86
EB	160	150	207
WB left	145	98	100
10. Brunswick Rd / SR 49 EB Ramps			
NB left	200	226	220
NB right	---	223	250
11. Brunswick Rd / Sutton Way			
NB left (2 lanes)	280	97	269
SB left	190	62	113
SB right	180	---	---
EB left (2 lanes)	185	86	129
EB right	250	96	171
WB left	125	88	161

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 18A (continued)
EPAP PLUS PROJECT QUEUES
SR 49 (SCENARIO #2)
PEAK HOURS

Location	Length*	EPAP plus Project AM Peak Hour Queue (feet)	EPAP plus Project PM Peak Hour Queue (feet)
12. Brunswick Rd / Idaho Maryland Rd			
NB left	540	<25	30
SB left	120	<25	<25
EB right	---	40	55
WB left	60	173	90
13. Brunswick Rd / Whispering Pines Ln			
NB left	210	<25	<25
EB left	110	<25	35
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd			
NB left	225	<25	<25
SB left	260	<25	30
EB	---	<25	<25
WB	---	75	33
15. Brunswick Rd / SR 174			
SB left	90	60	415
EB left	130	<25	<25
16. Brunswick Rd / Project Driveway			
NB left	350	<25	<25
EB	---	<25	25
17. E. Bennett Rd / Millsite Rd			
NB right	---	<25	<25
18. Whispering Pines Ln / Project Driveway – Not Applicable			
19. Idaho Maryland Rd / Centennial Dr			
NB	---	<25	385
WB left	130	<25	<25
20. Idaho Maryland Rd /Sutton Way			
SB right	90	<25	48
SB left	---	<25	25
EB	---	48	115
WB	---	38	85
21. Sutton Way / Dorsey Dr			
SB right	120	<25	38
SB thru	---	<25	45
NB	---	45	100
EB	---	28	113

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 18A (continued)
EPAP PLUS PROJECT QUEUES
SR 49 (SCENARIO #2)
PEAK HOURS

Location	Length*	EPAP plus Project AM Peak Hour Queue (feet)	EPAP plus Project PM Peak Hour Queue (feet)
22. Dorsey Dr / SR 49 EB Ramps			
NB Left (2 lanes)	215	223	111
NB right	215	89	95
EB left	180	106	160
23. Dorsey Dr / SR 49 EB Ramps			
SB right	400	71	62
SB left-thru	400	105	154
EB right	155	70	190
WB left	180	123	178
24. Dorsey Dr / SR 49 EB Ramps			
NB right	410	33	<25
SB left	400	212	103
WB left	100	59	126

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 18B
EPAP PLUS PROJECT QUEUES
SR 49 (SCENARIO #2)
(PROJECT TRAFFIC HOURS)

Location	Length*	No Project EPAP 6:30 – 7:30 AM Queue (feet)	Plus Project EPAP 6:30 – 7:30 AM Queue (feet)	No Project EPAP 3:30 – 4:30 PM Queue (feet)	Plus Project EPAP 3:30 – 4:30 PM Queue (feet)	No Project EPAP 6:30 – 7:30 PM Queue (feet)	Plus Project EPAP 6:30 – 7:30 PM Queue (feet)
1. Neal St / Tinloy St							
EB	70	67	66	105	103	99	94
WB	150	86	87	139	138	95	89
2. S. Auburn St / Tinloy St							
NB through	80	78	71	115	109	78	76
NB through-left	80	55	52	76	67	53	52
SB	75	78	71	109	104	101	100
WB	95	84	82	99	103	79	75
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp							
NB left turn	60	27	27	41	43	31	32
NB through	150	46	45	54	56	47	45
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp							
SB left turn	60	<25	<25	38	38	<25	<25
SB through	150	<25	<25	95	95	35	35
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps							
NB	---	<25	<25	26	26	<25	<25
SB	---	<25	<25	49	51	<25	<25
EB	---	30	32	63	60	28	29
WB	---	<25	<25	53	53	26	27
6. Idaho Maryland Rd / SR 49 EB Ramps							
NB right	---	120	163	55	55	<25	<25
NB left	355	33	33	63	63	<25	<25
WB	90	30	35	203	220	33	40

Highlighted values indicate queue length in excess of available storage with 25-feet or less increase from No Project condition
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 18B (continued)
EPAP PLUS PROJECT QUEUES
SR 49 (SCENARIO #2)
(PROJECT TRAFFIC HOURS)

Location	Length*	No Project EPAP 6:30 – 7:30 AM Queue (feet)	Plus Project EPAP 6:30 – 7:30 AM Queue (feet)	No Project EPAP 3:30 – 4:30 PM Queue (feet)	Plus Project EPAP 3:30 – 4:30 PM Queue (feet)	No Project EPAP 6:30 – 7:30 PM Queue (feet)	Plus Project EPAP 6:30 – 7:30 PM Queue (feet)
7. Idaho Maryland Rd / Railroad Ave							
EB	90	75	88	80	83	<25	<25
8. E. Main St / Brunswick Rd – W. Olympia Dr							
NB left	110	<25	<25	<25	<25	<25	<25
NB right	125	43	39	119	126	60	59
SB left (2 lanes)	355	60	64	179	177	99	99
WB left (2 lanes)	150	45	36	90	88	61	60
WB right	150	54	56	153	149	71	74
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr							
NB left	100	<25	<25	75	75	57	52
NB right	100	32	28	135	129	85	83
SB left (2 lanes)	260	117	127	191	199	136	143
SB right	260	47	50	86	76	52	54
EB	160	47	56	210	204	123	128
WB left	145	62	63	107	104	89	85
10. Brunswick Rd / SR 49 EB Ramps							
NB left	200	165	160	225	226	177	172
NB right	---	93	100	245	259	91	99
11. Brunswick Rd / Sutton Way							
NB left (2 lanes)	280	56	52	241	251	110	111
SB left	190	43	41	102	105	55	56
SB right	180	---	---	---	<25	---	---
EB left (2 lanes)	185	59	60	124	128	67	63
EB right	250	45	46	150	161	87	86
WB left	125	44	45	144	147	69	67

Highlighted values indicate queue length in excess of available storage with 25-feet or less increase from No Project condition
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 18B (continued)
EPAP PLUS PROJECT QUEUES
SR 49 (SCENARIO #2)
(PROJECT TRAFFIC HOURS)

Location	Length*	No Project EPAP 6:30 – 7:30 AM Queue (feet)	Plus Project EPAP 6:30 – 7:30 AM Queue (feet)	No Project EPAP 3:30 – 4:30 PM Queue (feet)	Plus Project EPAP 3:30 – 4:30 PM Queue (feet)	No Project EPAP 6:30 – 7:30 PM Queue (feet)	Plus Project EPAP 6:30 – 7:30 PM Queue (feet)
12. Brunswick Rd / Idaho Maryland Rd							
NB left	540	<25	<25	<25	<25	<25	<25
SB left	120	<25	<25	<25	<25	<25	<25
EB right	---	<25	25	40	40	<25	<25
WB left	60	25	43	68	75	<25	<25
13. Brunswick Rd / Whispering Pines Ln							
NB left	210	<25	<25	<25	<25	<25	<25
EB left	110	<25	<25	<25	<25	<25	<25
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd							
NB left	225	<25	<25	<25	<25	<25	<25
SB left	260	<25	<25	<25	<25	<25	<25
EB	---	<25	<25	<25	<25	<25	<25
WB	---	<25	<25	<25	<25	<25	<25
15. Brunswick Rd / SR 174							
SB left	90	25	30	205	215	43	48
EB left	130	<25	<25	<25	<25	<25	<25
16. Brunswick Rd / Project Driveway							
NB left	350	---	<25	---	<25	---	<25
EB	---	---	<25	---	<25	---	<25
17. E. Bennett Rd / Millsite Rd							
NB right	---	---	<25	---	<25	---	<25
18. Whispering Pines Ln / Project Driveway – Not Applicable							
19. Idaho Maryland Rd / Centennial Dr							
NB	---	<25	<25	315	335	<25	<25
WB left	130	<25	<25	<25	<25	<25	<25

Highlighted values indicate queue length in excess of available storage with 25-feet or less increase from No Project condition
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 18B (continued)
EPAP PLUS PROJECT QUEUES
SR 49 (SCENARIO #2)
(PROJECT TRAFFIC HOURS)

Location	Length*	No Project EPAP 6:30 – 7:30 AM Queue (feet)	Plus Project EPAP 6:30 – 7:30 AM Queue (feet)	No Project EPAP 3:30 – 4:30 PM Queue (feet)	Plus Project EPAP 3:30 – 4:30 PM Queue (feet)	No Project EPAP 6:30 – 7:30 PM Queue (feet)	Plus Project EPAP 6:30 – 7:30 PM Queue (feet)
20. Idaho Maryland Rd /Sutton Way							
SB right	90	<25	<25	45	45	<25	<25
SB left	---	<25	<25	<25	<25	<25	<25
ÈB	---	<25	25	98	100	<25	<25
WB	---	<25	<25	63	70	<25	<25
21. Sutton Way / Dorsey Dr							
SB right	120	<25	<25	38	38	<25	<25
SB thru	---	<25	<25	43	45	<25	<25
NB	---	<25	<25	98	98	<25	<25
EB	---	<25	<25	110	110	40	40
22. Dorsey Dr / SR 49 EB Ramps							
NB Left (2 lanes)	215	112	107	104	113	56	59
NB right	215	41	41	98	99	48	54
EB left	180	60	62	155	157	56	65
23. Dorsey Dr / SR 49 EB Ramps							
SB right	400	50	50	58	57	48	49
SB left-thru	400	53	57	154	151	67	69
EB right	155	36	39	199	196	41	41
WB left	180	81	77	184	179	84	84
24. Brunswick Rd / Loma Rica Dr							
NB right	410	31	31	26	26	<25	<25
SB left	400	133	146	135	135	64	68
WB left	100	32	35	160	160	35	38

Highlighted values indicate queue length in excess of available storage with 25-feet or less increase from No Project condition
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

EPAP Plus Project Conditions (Scenario #2) Roadway Segment Levels of Service. Table 19 summarizes the Levels of Service based on the EPAP traffic volumes on study area roads with the existing roadway configuration. All segments along Brunswick Road and E. Bennett Road will continue to operate at LOS D or better while the SR 174 segment will continue to operate at LOS E. The SR 174 segment exceeds the LOS C threshold in both directions.

TABLE 19
EPAP PLUS PROJECT
SR 49 (SCENARIO #2)
ROADWAY SEGMENT LEVELS OF SERVICE

Roadway	Location	Facility Classification	ATS/PTSF/LOS EPAP plus Project PM Peak Hour
Brunswick Rd	SR 49 to Whispering Pines Ln	Class I Highway	
	NB		31.2 / 77.7 / D
	SB		31.1 / 78.0 / D
	Whispering Pines Ln to E. Bennett Rd	Class I Highway	
	NB		36.1 / 72.5 / D
	SB		35.5 / 83.6 / D
	E. Bennett Rd to Project Driveway	Class I Highway	
	NB		34.9 / 68.3 / D
	SB		34.8 / 80.1 / D
	Project Driveway to SR 174	Class I Highway	
	NB		33.7 / 67.9 / D
	SB		33.2 / 83.9 / D
E. Bennett Rd	Project Driveway to Brunswick Rd	Class III Highway	
	EB		36.1 / 37.6 / B
	WB		34.8 / 53.4 / B
SR 174	Brunswick Rd to Empire St	Class I Highway	
	EB		**30.2 / 59.8 / E**
	WB		**29.2 / 78.2 / E**

ATS – average travel speed
PTSF – percent time spent following
LOS – level of service
Bold indicates LOS threshold exceeded

VII. CUMULATIVE IMPACTS (2035)

The analysis of the long range 2035 cumulative condition is intended to consider the impact of this project within the context of the Nevada County region buildout projected to occur by 2035.

VII.1. Year 2035 Forecasts / Conditions

2035 Traffic Forecasts

Year 2035 traffic forecasts were based on the Nevada County Transportation Commission (NCTC) regional travel demand model and includes those projects identified in the EPAP scenario. Fehr & Peers maintains the NCTC model and provided a.m., p.m. and daily model volumes for the base year 2012 and the build out year 2035. Based on direction from the Nevada County Public Works Department the differential method was used to develop peak hour turning movements at all study intersections. The method adds the difference between the two model results to the existing traffic conditions. Turning movements at each intersection for the remaining three scenarios were developed by applying the differential method with the proportional traffic rate between the off-peak scenarios and the peak hour scenarios. Figures 11A through 11F display the Cumulative No Project traffic volumes at each study intersection for each of the five study time periods.

Roadway Conditions

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

- Idaho Maryland Road / SR 49/20 Ramps
  - Install traffic signal with NB overlap

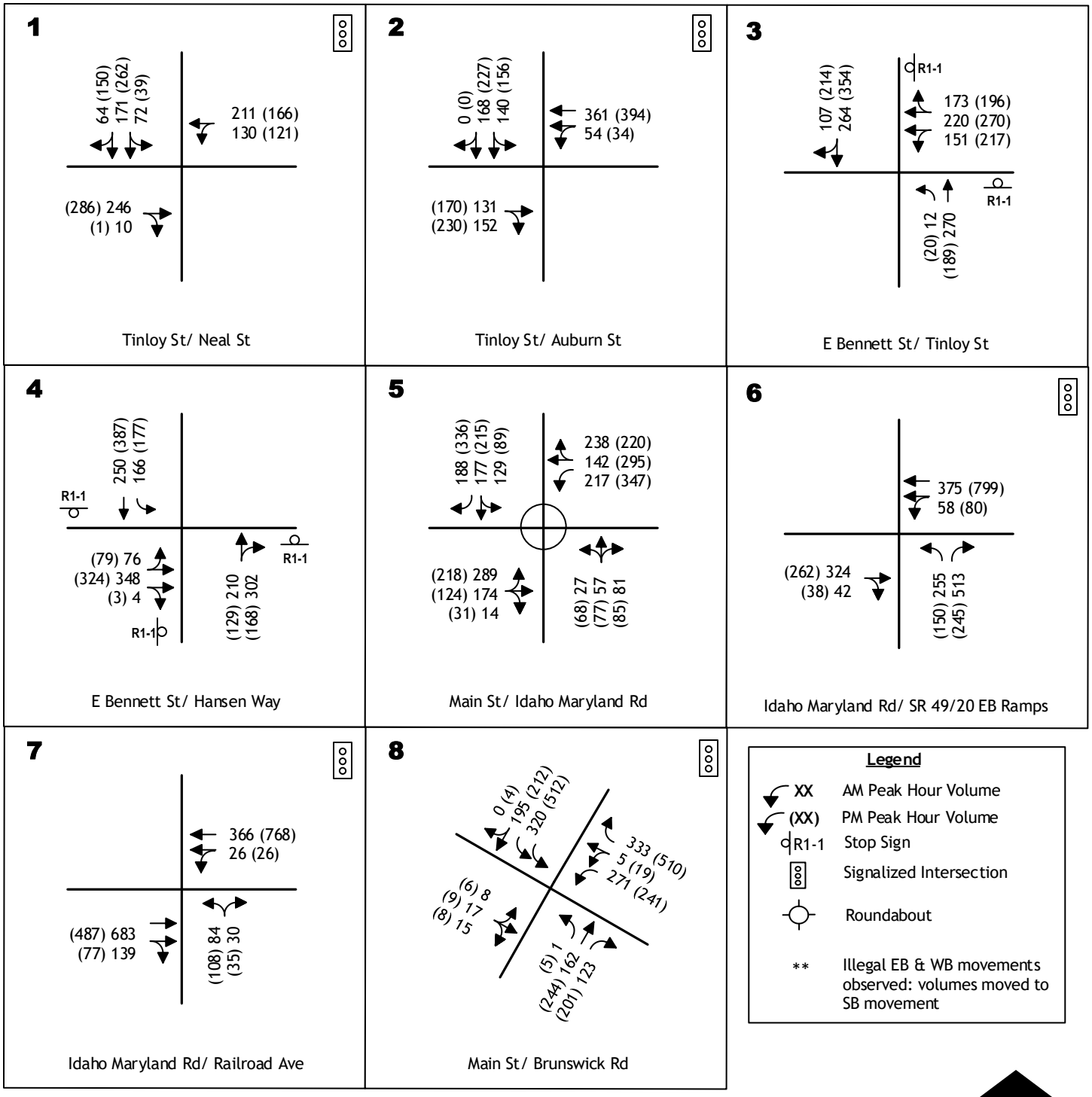
- Idaho Maryland Road / Railroad Avenue
  - Install traffic signal

- Brunswick Road / Idaho Maryland Road
  - Install traffic signal, split phase on Idaho Maryland Road with EB overlap
  - Lane configuration to include:
    - eastbound left-through lane and right turn lane
    - westbound left-through lane and right turn lane
    - northbound left turn lane and through-right lane
    - southbound left turn lane, through lane and through-right lane

- Idaho Maryland Road / Centennial Drive
  - Install traffic signal

Signal timing was optimized at all intersections. Other roadway improvements were identified; however, none were operational and have not been listed.

One intersection, SR 174 at Brunswick Road was previously identified to be signalized in the NCTC Regional Transportation Program (RTMF). The most recent study, the NCTC 2016 Nexus Study, removed the project from the program as this study showed acceptable intersection levels of service. The Caltrans SR 174 TCR continues to identify this intersection as a planned, but unfunded improvement which could include either a traffic signal or roundabout. Based on this data, the intersection was analyzed under current traffic operations.

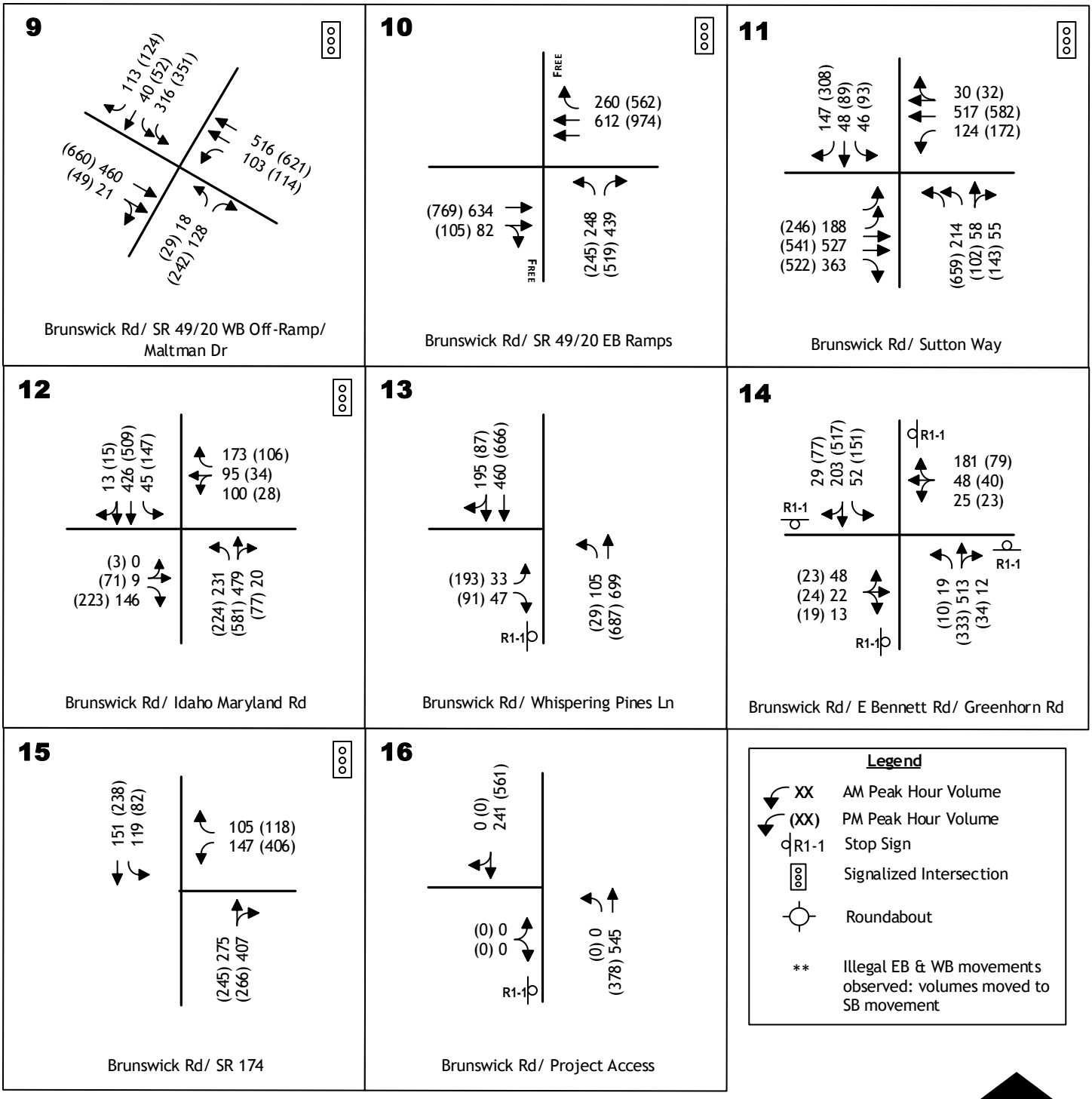


AM/PM PEAK HOURS CUMULATIVE NO PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 11a

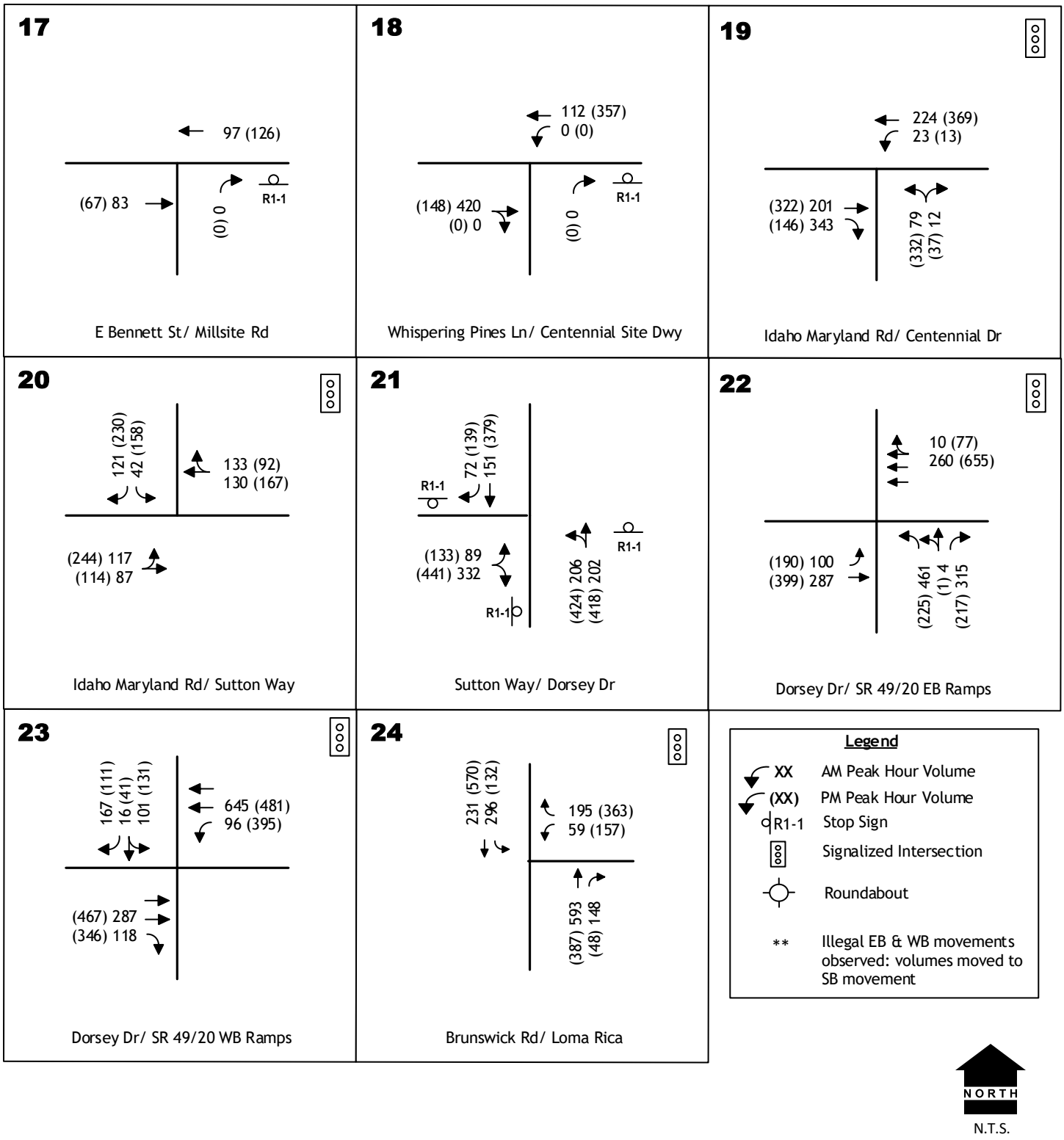


AM/PM PEAK HOURS CUMULATIVE NO PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 11b

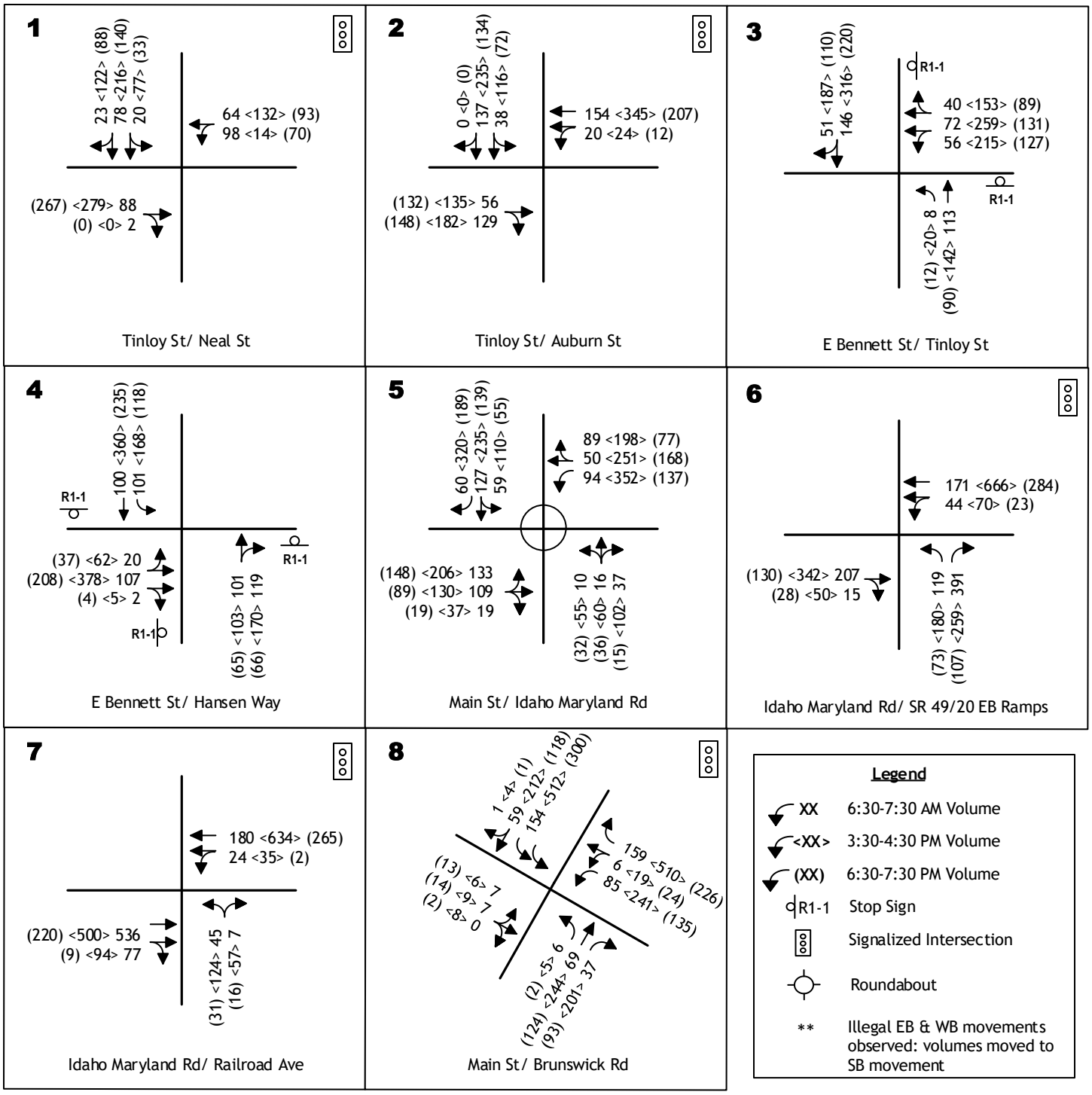


AM/PM PEAK HOURS CUMULATIVE NO PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 11c

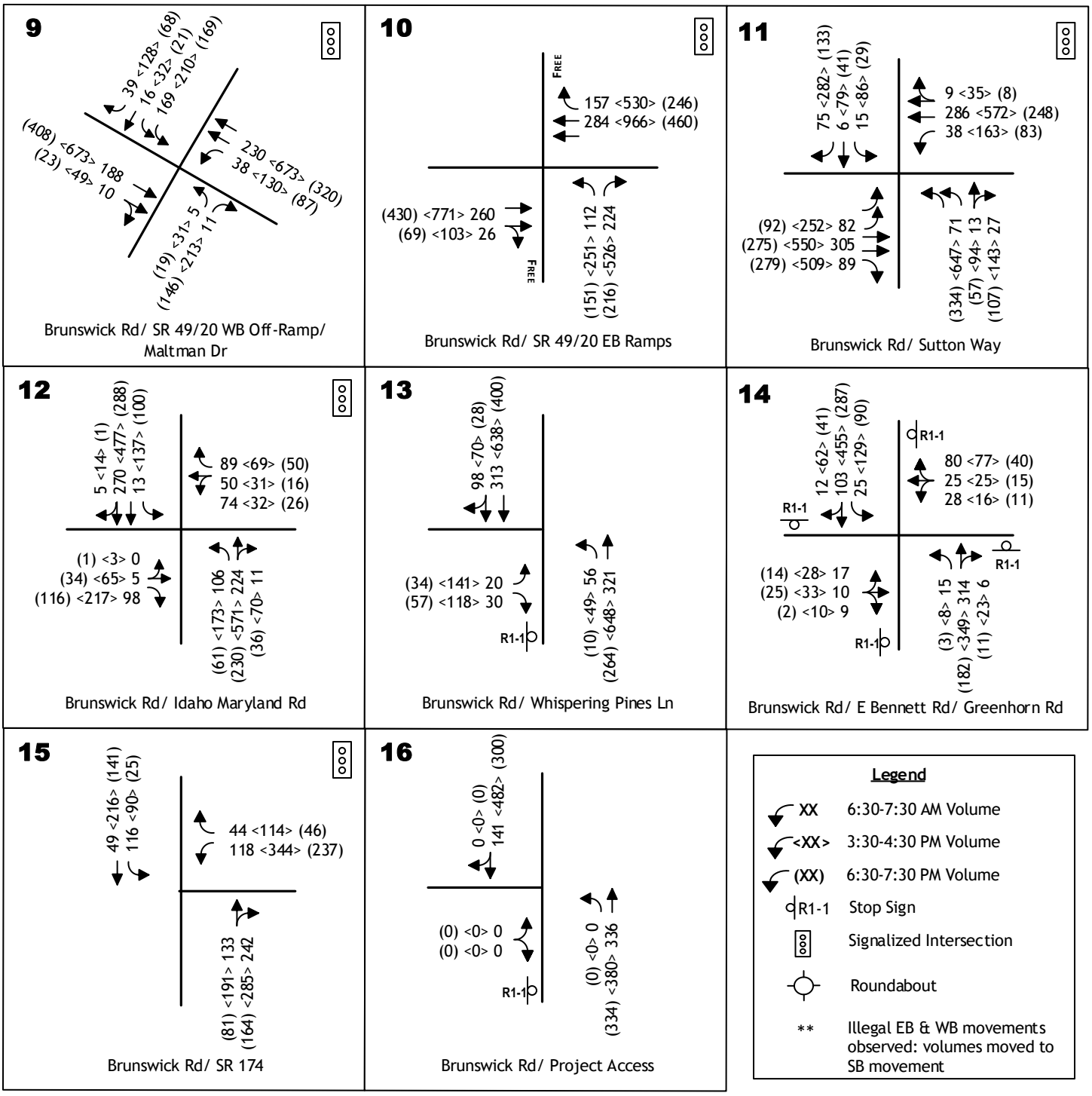


PROJECT TRAFFIC HOURS CUMULATIVE NO PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 11d

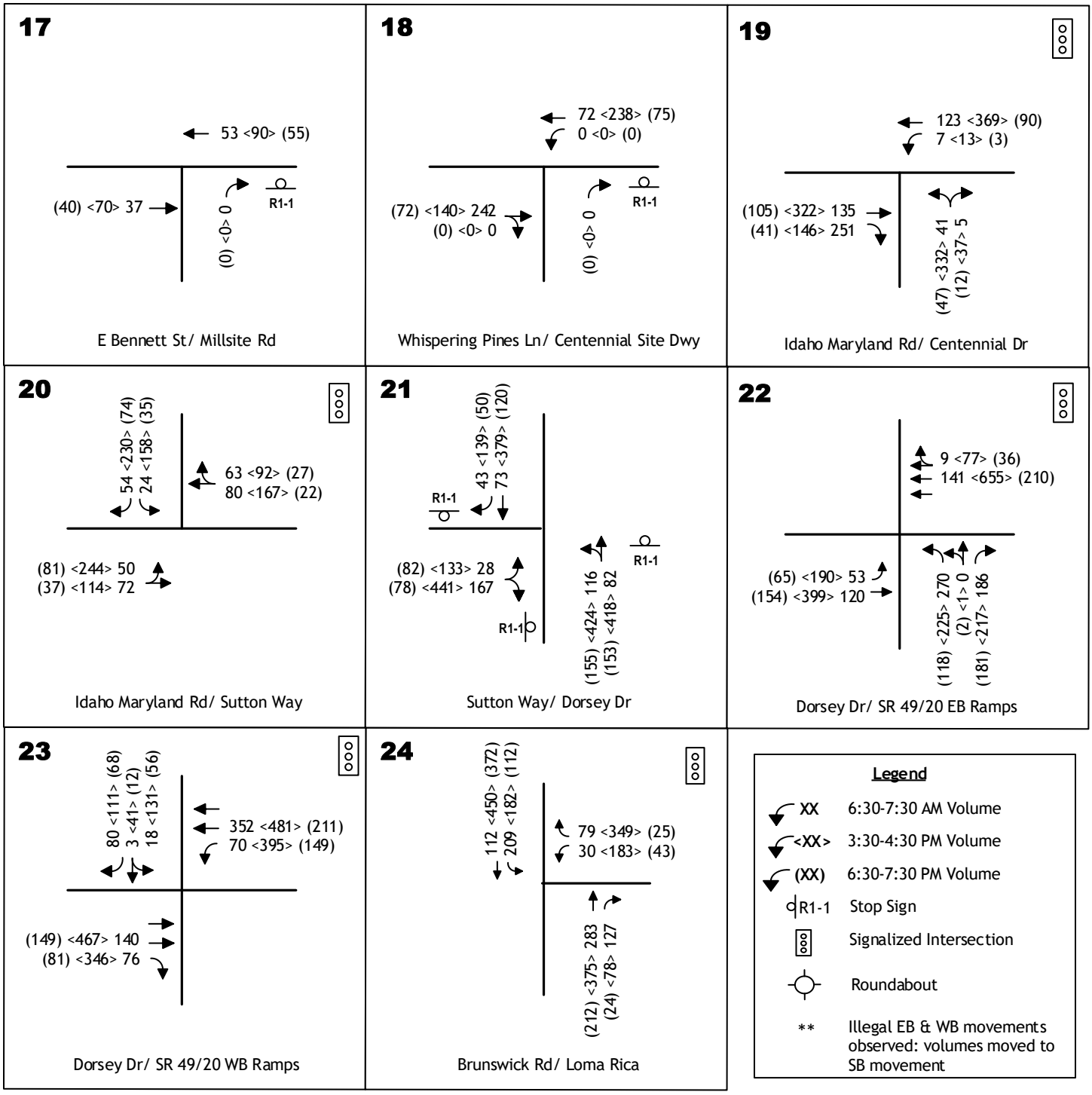


PROJECT TRAFFIC HOURS CUMULATIVE NO PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 11e



PROJECT TRAFFIC HOURS CUMULATIVE NO PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 11f

2035 Intersection Levels of Service. The Cumulative volumes were used to recalculate operating Levels of Service at the study intersections. Tables 20A and 20B summarize operating Levels of Service at the study area intersections for each of the five study time periods.

During the peak hour scenario three intersections will operate at unacceptable Levels of Service, at LOS E or F, which include Brunswick Road at E. Bennett Road – Greenhorn Road, SR 174 at Brunswick Road and Sutton Way at Dorsey Drive.

During the project traffic hours when most of the project traffic occurs, two intersections will operate below the LOS threshold during the 3:30 to 4:30 period when administrative staff is departing. These include Sutton Way at Dorsey Drive which will operate at LOS F and SR 174 at Brunswick Road which will operate at LOS E.

Seven intersections will meet the peak hour signal warrant during the a.m. and p.m. peak hour scenarios and the 3:30 – 4:30 p.m. project traffic scenario. These include E. Bennett Road at Tinloy Street - SR 49 WB Off-Ramp, E. Bennett Street at Hansen Way - SR 49 EB On-Ramp, Brunswick Road at Whispering Pines Lane, Brunswick Road at E. Bennett Road – Greenhorn Road, SR 174 at Brunswick Road, Idaho-Maryland Road / Sutton Way and Sutton Way at Dorsey Drive. As identified above, the Brunswick Road at E. Bennett Road – Greenhorn Road, SR 174 at Brunswick Road and Sutton Way at Dorsey Drive intersections also operate below the accepted LOS threshold.

TABLE 20A
CUMULATIVE CONDITIONS
LEVELS OF SERVICE AT INTERSECTIONS – PEAK HOURS

Location	Control	Cumulative AM Peak Hour		Cumulative PM Peak Hour		Meets Peak Hour Warrant?
		LOS	Average Delay	LOS	Average Delay	
1. Neal St / Tinloy St ‡◊	Signal	B	17.2	D	40.2	N/A
2. S. Auburn St / Tinloy St ‡◊	Signal	B	10.8	B	14.6	N/A
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp ‡◊	SB / WB Stop	A	7.2	A	9.9	Yes
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp ‡◊	AWS	D	33.2	C	20.7	Yes
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps ‡◊	Roundabout	A	9.1	A	8.7	N/A
6. Idaho Maryland Rd / SR 49 EB Ramps ‡◊	Signal	C	20.4	B	18.7	N/A
7. Idaho Maryland Rd / Railroad Ave ‡◊	Signal	B	14.9	B	20.0	N/A
8. E. Main St / Brunswick Rd – W. Olympia Dr ‡Δ	Signal	B	11.9	B	17.1	N/A
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr ‡♦	Signal	B	18.5	C	21.0	N/A
10. Brunswick Rd / SR 49 EB Ramps ‡▲	Signal	B	12.7	B	13.9	N/A
11. Brunswick Rd / Sutton Way ‡▲	Signal	B	13.5	C	30.8	N/A
12. Brunswick Rd / Idaho Maryland Rd ‡●	Signal	C	25.1	D	35.0	N/A
13. Brunswick Rd / Whispering Pines Ln ‡● NB Left EB	EB Stop	 A B	 9.7 14.7	 A D	 9.5 28.8	Yes
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd †●	AWS	**E**	**35.4**	D	29.4	Yes
15. Brunswick Rd / SR 174 †● EB Left SB	SB Stop	 A C	 8.2 17.5	 A **F**	 8.0 **106.8**	Yes
16. Brunswick Rd / Project Driveway †●	EB Stop	Not Studied				
17. E. Bennett Rd / Millsite Rd †●	NB Stop	Not Studied				
18. Whispering Pines Ln / Centennial Site Driveway ‡◊	NB Stop	Not Studied				
19. Idaho Maryland Rd / Centennial Dr ‡Δ	Signal	A	7.7	B	14.1	N/A
20. Idaho Maryland Rd /Sutton Way ‡Δ	AWS	A	9.6	C	16.0	Yes
21. Sutton Way / Dorsey Dr ‡Δ	AWS	C	19.1	**F**	**213.1**	Yes
22. Dorsey Dr / SR 49 EB Ramps ‡Δ	Signal	B	13.7	B	14.7	N/A
23. Dorsey Dr / SR 49 WB Ramps ‡Δ	Signal	A	9.3	B	18.4	N/A
24. Brunswick Rd / Loma Rica Dr†□	Signal	C	22.2	B	14.7	N/A

AWS – all way stop † Nevada County ‡Grass Valley **Bold** indicates intersection operates below threshold
◊ 8:00 – 9:00 a.m. / 4:30 – 5:30 p.m. Δ 8:00 – 9:00 a.m. / 3:30 – 5:30 p.m. ● 7:45 – 8:45 a.m. / 4:30 – 5:30 p.m.
♦ 8:00 – 9:00 a.m. / 4:15 – 5:15 p.m. ▲ 8:00 – 9:00 a.m. / 3:45 – 4:45 p.m. □ 8:00 – 9:00 a.m. / 5:00 – 6:00 p.m.

TABLE 20B
CUMULATIVE CONDITIONS
PEAK HOUR LEVELS OF SERVICE AT INTERSECTIONS (PROJECT TRAFFIC HOURS)

Location	Control	Cumulative 6:30 – 7:30 AM		Cumulative 3:30 – 4:30 PM		Cumulative 6:30 – 7:30 PM		Meets Peak Hour Warrant?
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
1. Neal St / Tinloy St ‡	Signal	A	6.7	A	9.0	B	11.7	N/A
2. S. Auburn St / Tinloy St ‡	Signal	A	7.2	A	9.9	A	9.0	N/A
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp ‡	SB/WB Stop	A	4.1	A	8.0	A	4.4	Yes*
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp ‡	AWS	A	9.6	C	18.3	B	10.7	Yes*
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps ‡	Roundabout	A	5.1	A	8.3	A	4.9	N/A
6. Idaho Maryland Rd / SR 49 EB Ramps ‡	Signal	B	12.7	B	19.4	B	11.9	N/A
7. Idaho Maryland Rd / Railroad Ave ‡	Signal	B	11.5	B	19.3	B	12.2	N/A
8. E. Main St / Brunswick Rd – W. Olympia Dr	Signal	A	6.1	B	14.0	A	9.8	N/A
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr ‡	Signal	B	17.1	B	16.9	B	16.1	N/A
10. Brunswick Rd / SR 49 EB Ramps ‡	Signal	A	8.3	B	14.9	A	8.9	N/A
11. Brunswick Rd / Sutton Way ‡	Signal	A	5.3	C	28.2	B	10.7	N/A
12. Brunswick Rd / Idaho Maryland Rd ‡	Signal	B	17.3	C	31.6	B	18.1	N/A
13. Brunswick Rd / Whispering Pines Ln ‡ NB Left EB	EB Stop	 A B	 8.4 11.0	 A C	 9.4 19.3	 A B	 8.3 11.0	Yes*
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd †	AWS	B	11.0	C	23.7	B	10.9	Yes*
15. Brunswick Rd / SR 174 † EB Left SB	SB Stop	 A B	 7.7 12.8	 A **E**	 7.8 **46.2**	 A C	 8.2 17.5	Yes*
16. Brunswick Rd / Project Driveway †	EB Stop	Not Studied						
17. E. Bennett Rd / Millsite Rd †	NB Stop	Not Studied						
18. Whispering Pines Ln / Centennial Site Driveway ‡	NB Stop	Not Studied						
19. Idaho Maryland Rd / Centennial Dr ‡	Signal	A	6.7	B	11.5	A	7.5	N/A
20. Idaho Maryland Rd /Sutton Way ‡	AWS	A	8.0	B	14.2	A	7.9	Yes*
21. Sutton Way / Dorsey Dr ‡	AWS	A	9.0	**F**	**213.1**	B	10.4	Yes*
22. Dorsey Dr / SR 49 EB Ramps ‡	Signal	A	8.9	B	14.8	A	8.7	N/A
23. Dorsey Dr / SR 49 WB Ramps ‡	Signal	A	5.6	B	17.6	A	8.2	N/A
24. Brunswick Rd / Loma Rica Dr†	Signal	B	11.9	B	14.8	A	8.1	N/A

AWS – all way stop * meets warrant in 3:30 p.m. hour
Bold indicates intersection operates below threshold
† Nevada County
‡Grass Valley

Intersection Queues. Tables 21A and 21B present information regarding queuing at each study intersection under Cumulative conditions. 95th percentile queues with lengths exceeding the available storage are highlighted. The 95th percentile queue exceeds available storage in 21 locations at 13 intersections considering the five analysis scenarios. Some intersections are shown to have excessive queues while maintaining acceptable levels of service. These include Neal Street at Tinloy Street, Idaho Maryland Road at SR 49/20 Eastbound Ramps, Idaho Maryland Road at Railroad Avenue, Brunswick Road / Sutton Way and Brunswick Road / Loma Rica Drive; the level of service is a result of the ability of the intersection to serve those vehicles that enter the intersection. Other intersections with queues exceeding the available storage include intersections identified to be signalized by 2035; with signalization the storage lanes require lengthening. It is assumed that one additional vehicle (25') can store in the available left or right turn taper and this occurs at four locations.

TABLE 21A
CUMULATIVE QUEUES
PEAK HOURS

Location	Length*	Cumulative AM Peak Hour Queue (feet)	Cumulative PM Peak Hour Queue (feet)
1. Neal St / Tinloy St			
EB	70	116	118
WB	150	310	651
2. S. Auburn St / Tinloy St			
NB through	80	141	162
NB through-left	80	84	89
SB	75	110	148
WB	95	121	140
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp			
NB left turn	60	35	42
NB through	150	85	78
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp			
SB left turn	60	45	45
SB through	150	78	183
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps			
NB	---	30	34
SB	---	41	60
EB	---	148	84
WB	---	68	121

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 21A (continued)
CUMULATIVE QUEUES
PEAK HOURS

Location	Length*	Cumulative AM Peak Hour Queue (feet)	Cumulative PM Peak Hour Queue (feet)
6. Idaho Maryland Rd / SR 49 EB Ramps			
NB right	---	166	29
NB left	355	212	134
WB	90	161	369
7. Idaho Maryland Rd / Railroad Ave			
EB	90	204	162
8. E. Main St / Brunswick Rd – W. Olympia Dr			
NB left	110	<25	<25
NB right	125	81	142
SB left (2 lanes)	355	115	213
WB left (2 lanes)	150	102	110
WB right	150	107	163
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr			
NB left	100	53	87
NB right	100	87	157
SB left (2 lanes)	260	199	203
SB right	260	67	82
EB	160	159	211
WB left	145	99	108
10. Brunswick Rd / SR 49 EB Ramps			
NB left	200	223	217
NB right	---	231	261
11. Brunswick Rd / Sutton Way			
NB left (2 lanes)	280	115	502
SB left	190	68	117
SB right	180	---	<25
EB left (2 lanes)	185	92	131
EB right	250	129	219
WB left	125	105	188
12. Brunswick Rd / Idaho Maryland Rd			
NB left	540	220	209
SB left	120	55	196
EB left	150	<25	76
WB left	175	163	66

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 21A (continued)
CUMULATIVE QUEUES
PEAK HOURS

Location	Length*	Cumulative AM Peak Hour Queue (feet)	Cumulative PM Peak Hour Queue (feet)
13. Brunswick Rd / Whispering Pines Ln			
NB left	210	<25	<25
EB left	110	<25	110
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd			
NB left	225	<25	<25
SB left	260	<25	28
EB	---	<25	<25
WB	---	68	25
15. Brunswick Rd / SR 174			
SB left	90	53	440
EB left	130	<25	<25
19. Idaho Maryland Rd / Centennial Dr			
NB	---	49	311
WB left	130	<25	<25
20. Idaho Maryland Rd /Sutton Way			
SB right	90	<25	55
SB left	---	<25	40
ÈB	---	30	133
WB	---	38	65
21. Sutton Way / Dorsey Dr			
SB right	120	<25	30
SB thru	---	33	215
NB	---	153	1350
EB	---	135	455
22. Dorsey Dr / SR 49 EB Ramps			
NB Left (2 lanes)	215	214	114
NB right	215	135	95
EB left	180	99	169
23. Dorsey Dr / SR 49 EB Ramps			
SB right	400	77	59
SB left-thru	400	95	163
EB right	155	64	224
WB left	180	91	258
24. Brunswick Rd / Loma Rica Dr			
NB right	410	35	<25
SB left	400	254	110
WB left	100	63	136

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 21B
CUMULATIVE QUEUES
(PROJECT TRAFFIC HOURS)

Location	Length*	Cumulative 6:30 – 7:30 AM Queue (feet)	Cumulative 3:30 – 4:30 PM Queue (feet)	Cumulative 6:30 – 7:30 PM Queue (feet)
1. Neal St / Tinloy St				
EB	70	84	116	119
WB	150	115	106	131
2. S. Auburn St / Tinloy St				
NB through	80	73	137	98
NB through-left	80	44	63	44
SB	75	86	139	123
WB	95	68	113	103
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp				
NB left turn	60	28	41	33
NB through	150	46	66	46
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp				
SB left turn	60	<25	40	<25
SB through	150	<25	145	45
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps				
NB	---	<25	32	<25
SB	---	<25	70	25
EB	---	39	86	34
WB	---	<25	66	32
6. Idaho Maryland Rd / SR 49 EB Ramps				
NB right	---	39	48	<25
NB left	355	81	151	50
WB	90	61	260	72
7. Idaho Maryland Rd / Railroad Ave				
EB	90	123	166	47
8. E. Main St / Brunswick Rd – W. Olympia Dr				
NB left	110	<25	<25	<25
NB right	125	42	130	59
SB left (2 lanes)	355	68	175	106
WB left (2 lanes)	150	43	97	75
WB right	150	47	149	69
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr				
NB left	100	<25	68	54
NB right	100	30	131	84
SB left (2 lanes)	260	134	148	140
SB right	260	45	84	54
EB	160	61	202	128
WB left	145	61	106	90

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 21B (continued)
CUMULATIVE QUEUES
(PROJECT TRAFFIC HOURS)

Location	Length*	Cumulative 6:30 – 7:30 AM Queue (feet)	Cumulative 3:30 – 4:30 PM Queue (feet)	Cumulative 6:30 – 7:30 PM Queue (feet)
10. Brunswick Rd / SR 49 EB Ramps				
NB left	200	141	215	180
NB right	---	106	262	110
11. Brunswick Rd / Sutton Way				
NB left (2 lanes)	280	58	435	141
SB left	190	38	115	52
SB right	180	---	---	---
EB left (2 lanes)	185	61	127	66
EB right	250	52	224	98
WB left	125	48	177	84
12. Brunswick Rd / Idaho Maryland Rd				
NB left	540	90	151	56
SB left	120	<25	188	103
EB left	150	34	74	39
WB left	175	100	68	43
13. Brunswick Rd / Whispering Pines Ln				
NB left	210	<25	<25	<25
EB left	110	<25	58	<25
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd				
NB left	225	<25	<25	<25
SB left	260	<25	<25	<25
EB	---	<25	<25	<25
WB	---	<25	<25	<25
15. Brunswick Rd / SR 174				
SB left	90	25	248	45
EB left	130	<25	<25	<25
19. Idaho Maryland Rd / Centennial Dr				
NB	---	28	285	29
WB left	130	<25	<25	<25
20. Idaho Maryland Rd /Sutton Way				
SB right	90	<25	48	<25
SB left	---	<25	35	<25
ÈB	---	<25	105	<25
WB	---	<25	55	<25

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 21B (continued)
CUMULATIVE QUEUES
(PROJECT TRAFFIC HOURS)

Location	Length*	Cumulative 6:30 – 7:30 AM Queue (feet)	Cumulative 3:30 – 4:30 PM Queue (feet)	Cumulative 6:30 – 7:30 PM Queue (feet)
21. Sutton Way / Dorsey Dr				
SB right	120	<25	28	<25
SB thru	---	<25	190	<25
NB	---	30	1333	58
EB	---	25	188	<25
22. Dorsey Dr / SR 49 EB Ramps				
NB left (2 lanes)	215	98	125	58
NB right	215	59	97	62
EB left	180	63	180	65
23. Dorsey Dr / SR 49 EB Ramps				
SB right	400	53	63	49
SB left-thru	400	43	165	64
EB right	155	41	218	40
WB left	180	73	253	108
24. Brunswick Rd / Loma Rica Dr				
NB right	410	32	27	<25
SB left	400	134	147	69
WB left	100	35	178	36

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

Cumulative Roadway Segment Levels of Service. Table 22 summarizes the Levels of Service based on the Cumulative traffic volumes on study area roads. All segments along Brunswick Road and E. Bennett Road will continue to operate at LOS D or better while the SR 174 segment will continue to operate at LOS E. The SR 174 segment exceeds the LOS C threshold in both directions.

TABLE 22
CUMULATIVE ROADWAY SEGMENT LEVELS OF SERVICE

Roadway	Location	Facility Classification	ATS/PTSF/LOS Cumulative PM Peak Hour
Brunswick Rd	SR 49 to Whispering Pines Ln	Class I Highway	
	NB		29.9 / 81.3 / D
	SB		30.0 / 80.8 / D
	Whispering Pines Ln to E. Bennett Rd	Class I Highway	
	NB		35.0 / 85.8 / D
	SB		35.9 / 72.8 / D
	E. Bennett Rd to Project Driveway	Class I Highway	
	NB		35.4 / 63.1 / C
	SB		35.3 / 79.7 / C
	Project Driveway to SR 174	Class I Highway	
	NB		33.7 / 67.8 / D
	SB		33.0 / 81.7 / D
E. Bennett Rd	Project Driveway to Brunswick Rd	Class III Highway	
	EB		35.9 / 27.3 / B
	WB		35.7 / 56.5 / B
SR 174	Brunswick Rd to Empire St	Class I Highway	
	EB		**29.8 / 60.2 / E**
	WB		**28.6 / 80.4 / E**

ATS – average travel speed
PTSF – percent time spent following
LOS – level of service
Bold indicates LOS threshold exceeded

VII.2. Cumulative Plus Project Conditions (Scenario #1)

Scenario #1 considers transporting of engineered fill to the Centennial Industrial site.

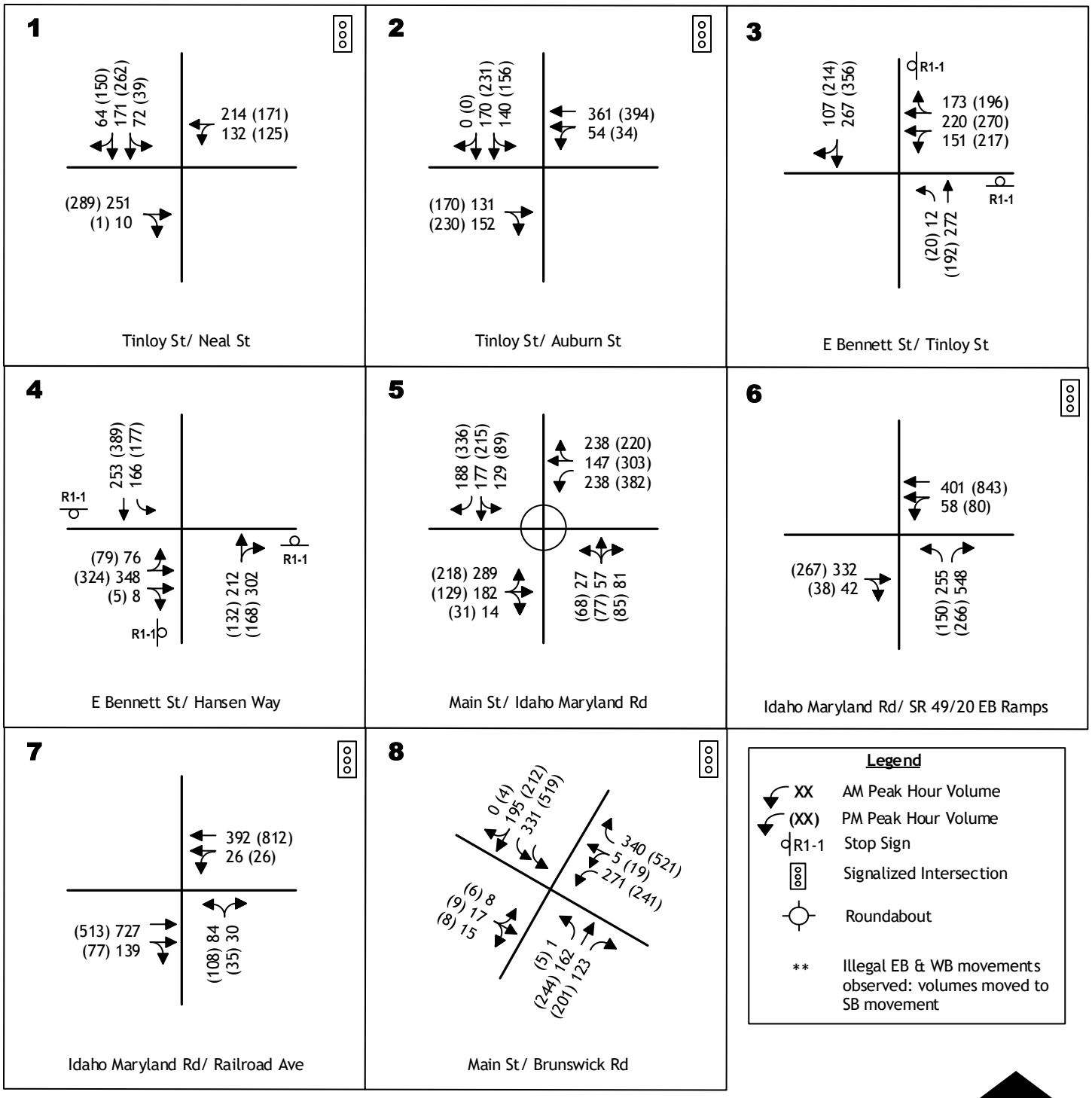
Traffic Volumes. The LOS impacts of the Idaho-Maryland Mine project have been identified by superimposing project traffic onto Cumulative conditions. Figures 12A through 12F display the "Cumulative Plus Project" traffic volumes at each study intersection for each of the five study time periods.

Cumulative plus Project volumes under Scenario #1 were used to recalculate operating Levels of Service at the study intersections. Tables 23A and 23B summarize operating Levels of Service at the study area intersections for each of the five study time periods.

During the peak hour scenario three intersections would continue to operate at unacceptable Levels of Service, at LOS E or F, which include Brunswick Road at E. Bennett Road – Greenhorn Road, SR 174 at Brunswick Road and Sutton Way at Dorsey Drive. One additional intersection, Brunswick Road at Whispering Pines Lane, would decline to LOS E.

During the project traffic hours two intersections will operate below the LOS threshold, at LOS E or F. These include Sutton Way at Dorsey Drive and SR 174 at Brunswick Road.

Eight intersections will meet the peak hour signal warrant during the a.m. and p.m. peak hour scenarios. These include E. Bennett Road at Tinloy Street - SR 49 WB Off-Ramp, E. Bennett Street at Hansen Way - SR 49 EB On-Ramp, Brunswick Road at Whispering Pines Lane, Brunswick Road at E. Bennett Road – Greenhorn Road, SR 174 at Brunswick Road, Brunswick Road at Project Driveway, Idaho-Maryland Road at Sutton Way and Sutton Way at Dorsey Drive. The Brunswick Road at Whispering Pines Lane, Brunswick Road at E. Bennett Road, SR 174 at Brunswick Road and Sutton Way at Dorsey Drive intersections also operate below the accepted LOS threshold. While the E. Bennett Road at Tinloy Street - SR 49 WB Off-Ramp, E. Bennett Street at Hansen Way - SR 49 EB On-Ramp, Idaho-Maryland Road at Sutton Way and Brunswick Road / Project Driveway intersections meet the peak hour signal warrant they operate acceptably. During the project hour analyses the same eight intersections will meet the peak hour signal warrant; however, only the SR 174 at Brunswick Road and Sutton Way at Dorsey Drive intersections will operate below the accepted LOS threshold.

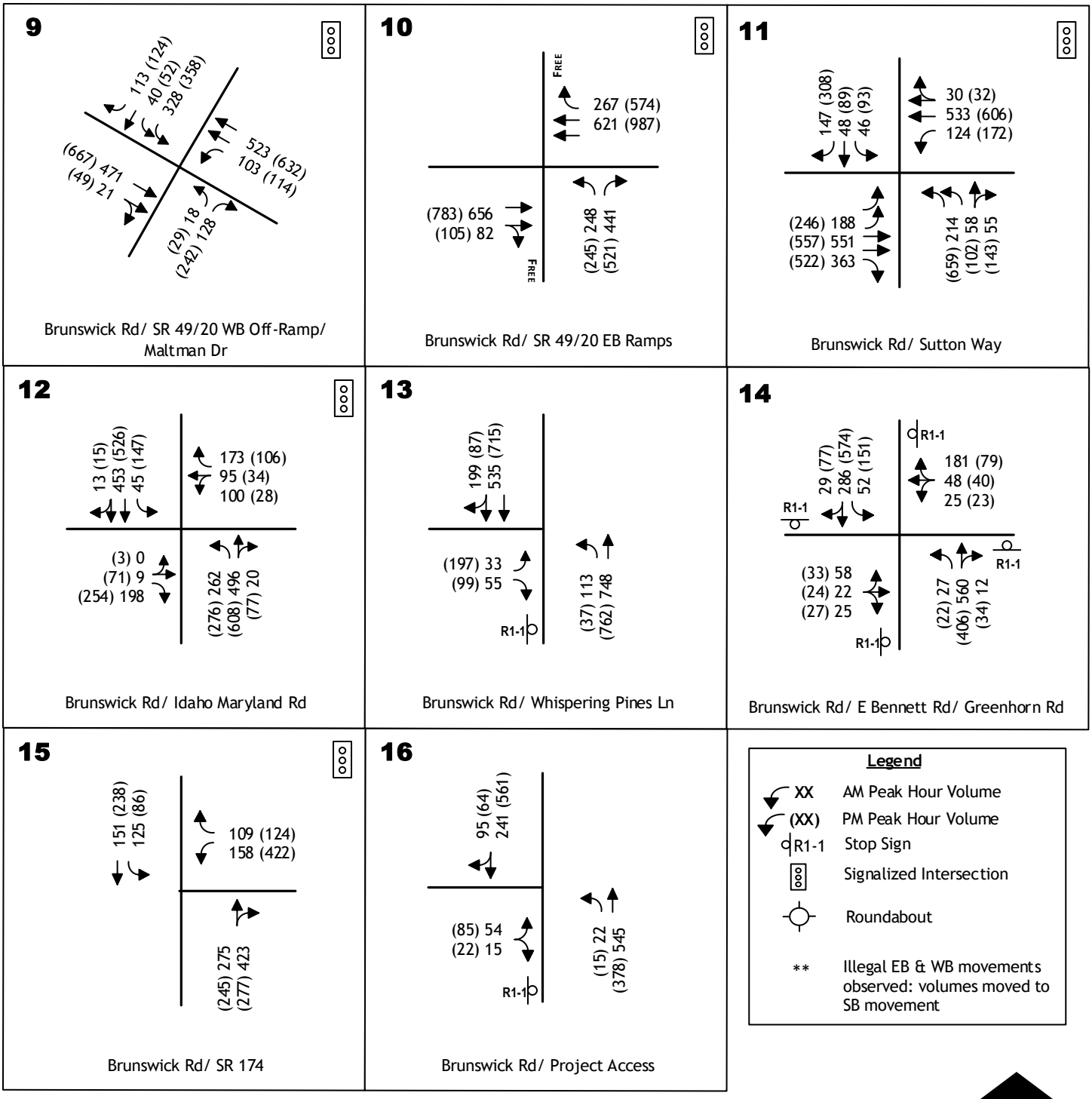


AM/PM PEAK HOURS CUMULATIVE PLUS PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS (TO CENTENNIAL SITE)

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 12a

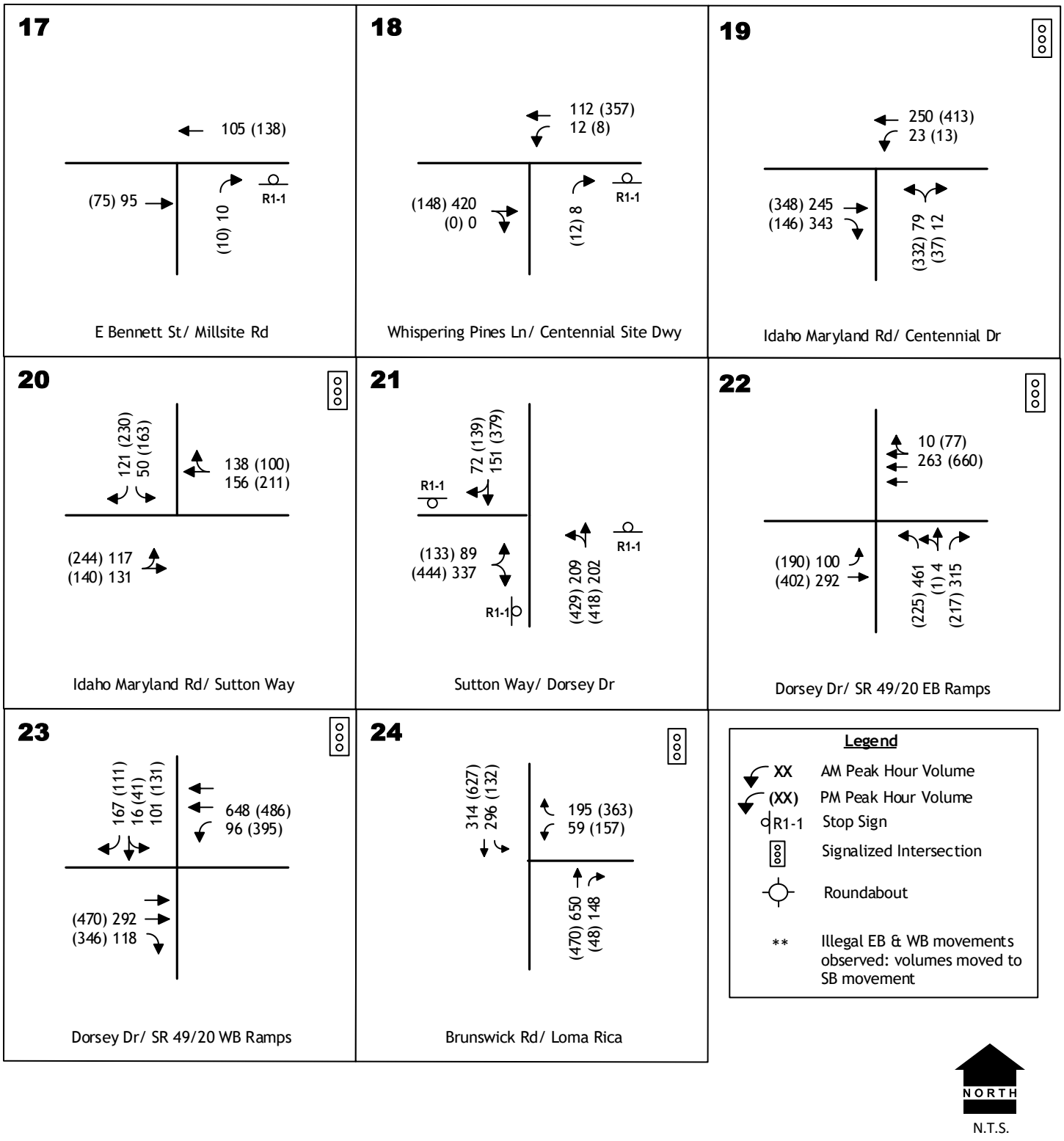


AM/PM PEAK HOURS CUMULATIVE PLUS PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS (TO CENTENNIAL SITE)

KD Anderson & Associates, Inc.
Transportation Engineers

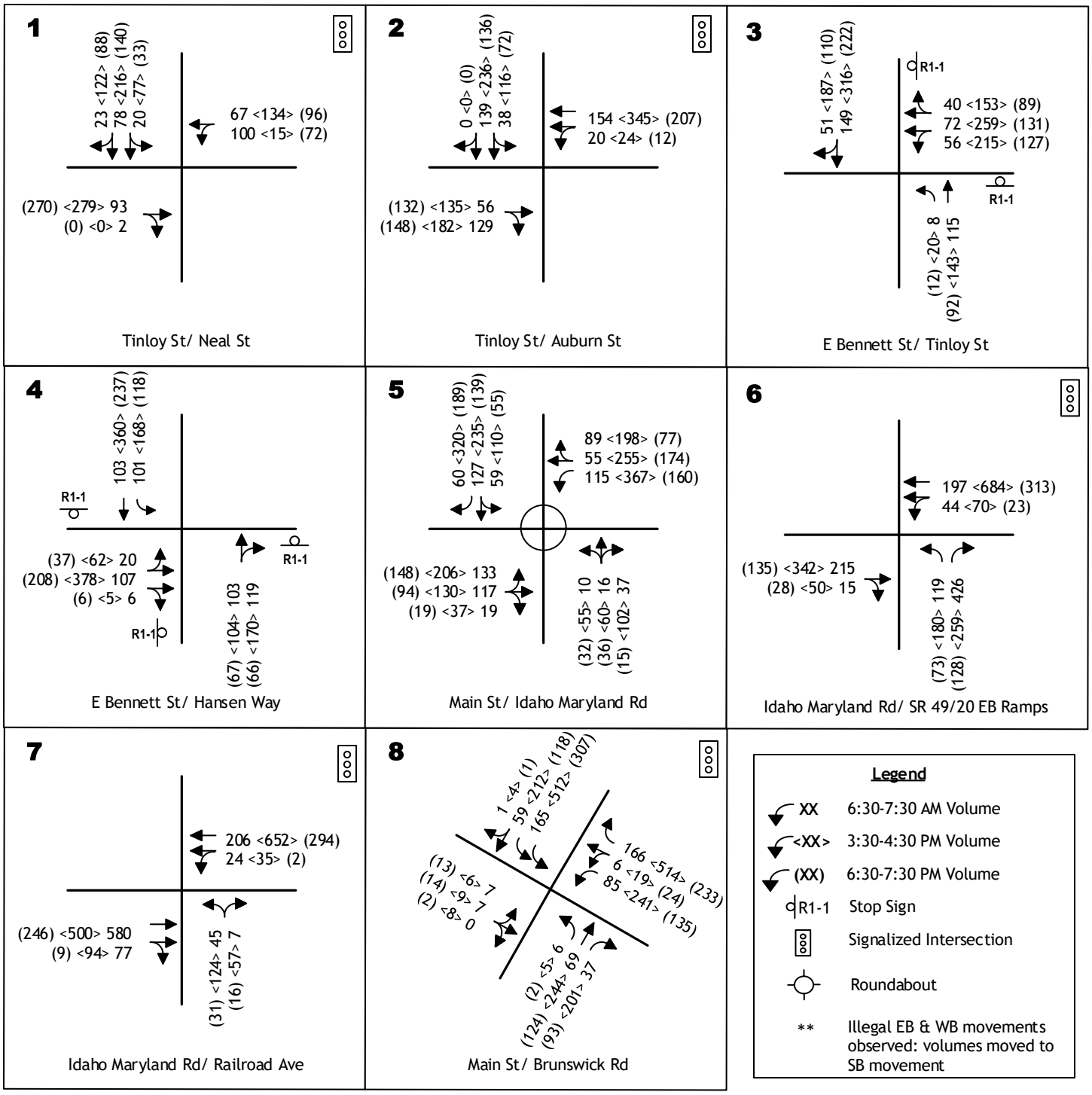
5875-01 RA 3/29/2021

figure 12b



AM/PM PEAK HOURS CUMULATIVE PLUS PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS (TO CENTENNIAL SITE)

KD Anderson & Associates, Inc.
Transportation Engineers

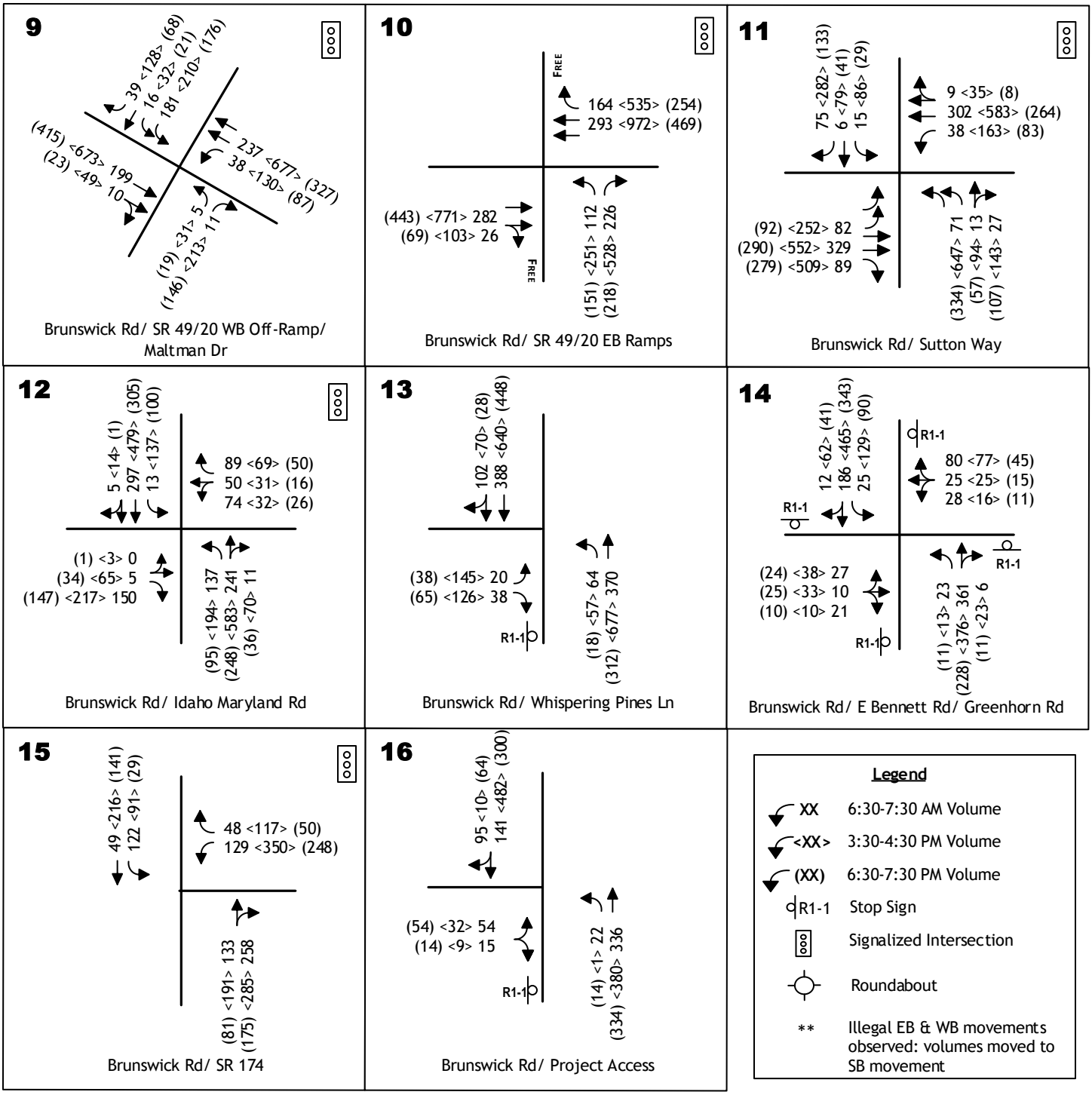


PROJECT TRAFFIC HOURS CUMULATIVE PLUS PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS (TO CENTENNIAL SITE)

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 12d

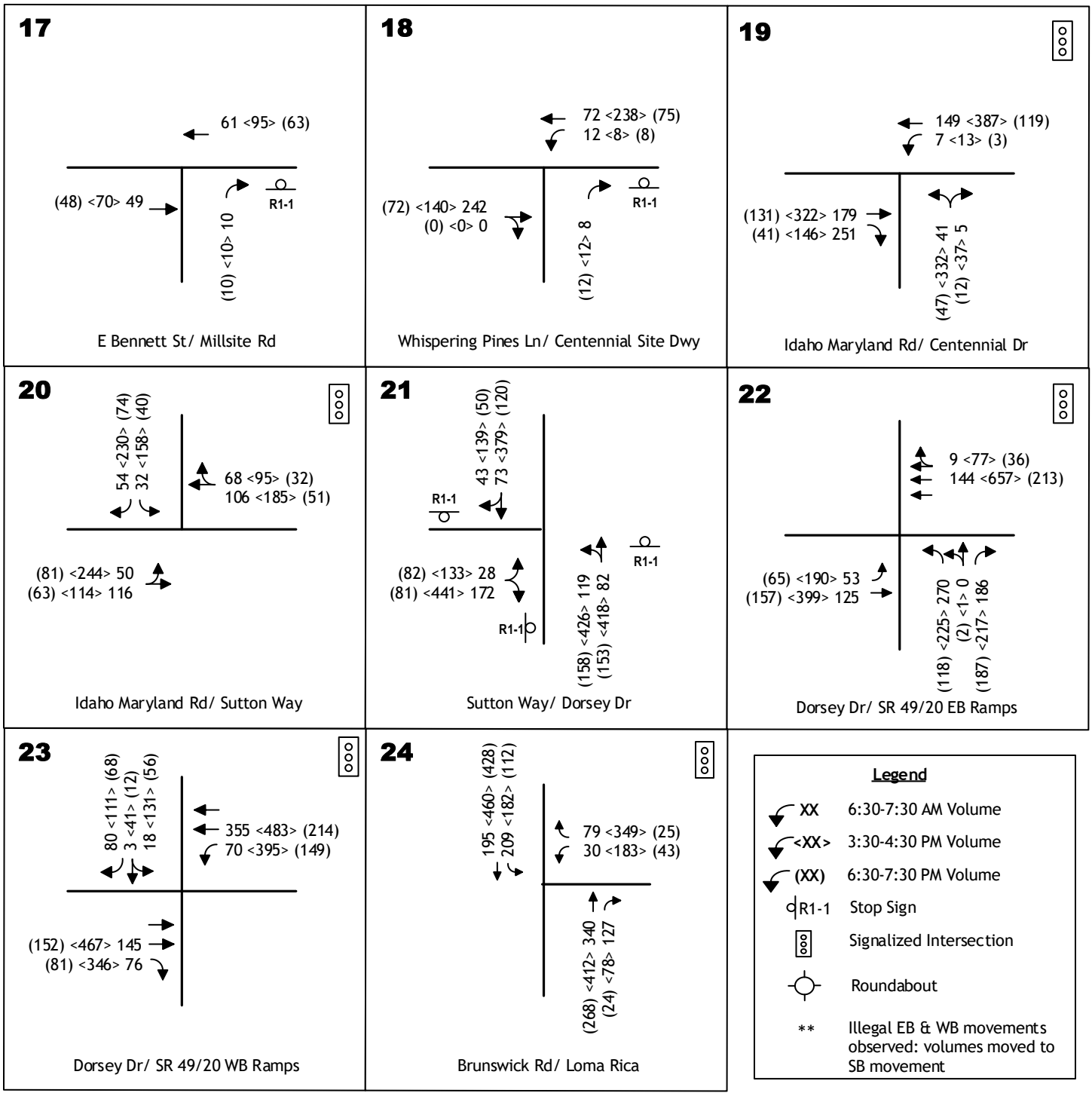


PROJECT TRAFFIC HOURS CUMULATIVE PLUS PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS (TO CENTENNIAL SITE)

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 12e



PROJECT TRAFFIC HOURS CUMULATIVE PLUS PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS (TO CENTENNIAL SITE)

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 12f

TABLE 23A
CUMULATIVE PLUS PROJECT – CENTENNIAL SITE (SCENARIO #1)
LEVELS OF SERVICE AT INTERSECTIONS – PEAK HOURS

Location	Control	Cum plus Project AM Peak Hour		Cum plus Project PM Peak Hour		Meets Peak Hour Warrant?
		LOS	Average Delay	LOS	Average Delay	
1. Neal St / Tinloy St ‡◊	Signal	C	24.2	D	48.8	N/A
2. S. Auburn St / Tinloy St ‡◊	Signal	B	11.5	B	14.0	N/A
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp ‡◊	SB / WB Stop	A	7.1	A	9.7	Yes
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp ‡◊	AWS	D	33.8	C	21.0	Yes
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps ‡◊	Roundabout	A	9.6	A	9.1	N/A
6. Idaho Maryland Rd / SR 49 EB Ramps ‡◊	Signal	C	22.0	C	20.1	N/A
7. Idaho Maryland Rd / Railroad Ave ‡◊	Signal	B	15.4	C	21.3	N/A
8. E. Main St / Brunswick Rd – W. Olympia Dr ‡Δ	Signal	B	11.8	B	16.5	N/A
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr ‡♦	Signal	B	19.1	C	21.0	N/A
10. Brunswick Rd / SR 49 EB Ramps ‡▲	Signal	B	12.6	B	14.5	N/A
11. Brunswick Rd / Sutton Way ‡▲	Signal	B	13.8	C	32.2	N/A
12. Brunswick Rd / Idaho Maryland Rd ‡●	Signal	C	28.2	D	37.6	N/A
13. Brunswick Rd / Whispering Pines Ln ‡● NB Left EB	EB Stop	 B C	 10.1 15.5	 A **E**	 9.8 **35.2**	Yes
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd †●	AWS	**F**	**55.1**	**E**	**49.2**	Yes
15. Brunswick Rd / SR 174 †● EB Left SB	SB Stop	 A C	 8.2 18.6	 A **F**	 8.0 **125.0**	Yes
16. Brunswick Rd / Project Driveway †● NB Left EB	EB Stop	 A B	 8.0 13.1	 A C	 9.0 16.2	Yes

AWS – all way stop
Bold indicates intersection operates below threshold
† Nevada County
‡Grass Valley

◊ 8:00 – 9:00 a.m. / 4:30 – 5:30 p.m.
♦ 8:00 – 9:00 a.m. / 4:15 – 5:15 p.m.
● 7:45 – 8:45 a.m. / 4:30 – 5:30 p.m.

Δ 8:00 – 9:00 a.m. / 3:30 – 5:30 p.m.
▲ 8:00 – 9:00 a.m. / 3:45 – 4:45 p.m.
□ 8:00 – 9:00 a.m. / 5:00 – 6:00 p.m.

TABLE 23A (continued)
CUMULATIVE PLUS PROJECT – CENTENNIAL SITE (SCENARIO #1)
LEVELS OF SERVICE AT INTERSECTIONS
PEAK HOURS

Location	Control	Cum plus Project AM Peak Hour		Cum plus Project PM Peak Hour		Meets Peak Hour Warrant?
		LOS	Average Delay	LOS	Average Delay	
17. E. Bennett Rd / Millsite Rd †● NB	NB Stop	A	8.8	A	8.7	No
18. Whispering Pines Ln / Centennial Site Driveway ‡◊ NB WB Left	NB Stop	B A	11.0 8.3	A A	9.3 7.6	No
19. Idaho Maryland Rd / Centennial Dr ‡Δ	Signal	A	7.6	B	14.6	N/A
20. Idaho Maryland Rd /Sutton Way ‡Δ	AWS	B	10.2	C	18.7	Yes*
21. Sutton Way / Dorsey Dr ‡Δ	AWS	C	19.5	**F**	**279.9**	Yes
22. Dorsey Dr / SR 49 EB Ramps ‡Δ	Signal	B	13.8	B	15.2	N/A
23. Dorsey Dr / SR 49 WB Ramps ‡Δ	Signal	A	9.6	B	18.6	N/A
24. Brunswick Rd / Loma Rica Dr†□	Signal	C	25.2	B	16.0	N/A

AWS – all way stop
Bold indicates intersection operates below threshold
† Nevada County
‡Grass Valley

◊ 8:00 – 9:00 a.m. / 4:30 – 5:30 p.m.
♦ 8:00 – 9:00 a.m. / 4:15 – 5:15 p.m.
● 7:45 – 8:45 a.m. / 4:30 – 5:30 p.m.

Δ 8:00 – 9:00 a.m. / 3:30 – 5:30 p.m.
▲ 8:00 – 9:00 a.m. / 3:45 – 4:45 p.m.
□ 8:00 – 9:00 a.m. / 5:00 – 6:00 p.m.

TABLE 23B
CUMULATIVE PLUS PROJECT – CENTENNIAL SITE (SCENARIO #1)
PEAK HOUR LEVELS OF SERVICE AT INTERSECTIONS – PROJECT TRAFFIC HOURS

Location	Control	Cum plus Project 6:30 – 7:30 AM		Cum plus Project 3:30 – 4:30 PM		Cum plus Project 6:30 – 7:30 PM		Meets Peak Hour Warrant?
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
1. Neal St / Tinloy St ‡	Signal	A	6.9	A	9.0	B	12.2	N/A
2. S. Auburn St / Tinloy St ‡	Signal	A	7.1	A	9.5	A	9.1	N/A
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp ‡	SB/WB Stop	A	4.1	A	7.6	A	4.5	Yes*
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp ‡	AWS	A	9.6	C	18.3	B	10.8	Yes*
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps ‡	Roundabout	A	5.3	A	8.4	A	5.1	N/A
6. Idaho Maryland Rd / SR 49 EB Ramps ‡	Signal	B	13.3	B	19.6	B	12.0	N/A
7. Idaho Maryland Rd / Railroad Ave ‡	Signal	B	11.7	B	19.4	B	12.4	N/A
8. E. Main St / Brunswick Rd – W. Olympia Dr ‡	Signal	A	6.2	B	14.2	A	9.7	N/A
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr ‡	Signal	B	18.1	B	17.2	B	16.4	N/A
10. Brunswick Rd / SR 49 EB Ramps ‡	Signal	A	8.4	B	14.8	A	8.7	N/A
11. Brunswick Rd / Sutton Way ‡	Signal	A	5.2	C	30.2	B	10.5	N/A
12. Brunswick Rd / Idaho Maryland Rd ‡	Signal	B	18.5	C	32.5	B	18.7	N/A
13. Brunswick Rd / Whispering Pines Ln ‡ NB Left EB	EB Stop	 A B	 8.7 11.4	 A C	 9.4 19.9	 A B	 8.5 11.3	Yes*
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd †	AWS	B	13.0	D	27.2	B	12.6	Yes*
15. Brunswick Rd / SR 174 † EB Left SB	SB Stop	 A B	 7.8 13.4	 A **E**	 7.8 **48.9**	 A B	 7.4 13.1	Yes*
16. Brunswick Rd / Project Driveway † NB Left EB	EB Stop	 A B	 7.8 11.4	 A B	 8.5 12.9	 A B	 8.1 12.2	Yes*

AWS – all way stop
Bold indicates intersection operates below threshold
* meets warrant in 3:30 p.m. hour

† Nevada County
‡Grass Valley

TABLE 23B (continued)
CUMULATIVE PLUS PROJECT – CENTENNIAL SITE (SCENARIO #1)
PEAK HOUR LEVELS OF SERVICE AT INTERSECTIONS
PROJECT TRAFFIC HOURS

Location	Control	Cum plus Project 6:30 – 7:30 AM		Cum plus Project 3:30 – 4:30 PM		Cum plus Project 6:30 – 7:30 PM		Meets Peak Hour Warrant?
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
17. E. Bennett Rd / Millsite Rd †	NB Stop							No
NB		A	8.6	A	8.7	A	8.6	
18. Whispering Pines Ln / Centennial Site Driveway ‡	NB Stop							No
NB		A	9.7	A	9.1	A	8.7	
WB Left		A	7.8	A	7.5	A	7.4	
19. Idaho Maryland Rd / Centennial Dr ‡	Signal	A	6.6	B	11.5	A	7.4	N/A
20. Idaho Maryland Rd /Sutton Way ‡	AWS	A	8.4	B	14.5	A	8.1	Yes*
21. Sutton Way / Dorsey Dr ‡	AWS	A	9.1	**F**	**214.3**	B	10.5	Yes*
22. Dorsey Dr / SR 49 EB Ramps ‡	Signal	A	8.6	B	15.0	A	8.9	N/A
23. Dorsey Dr / SR 49 WB Ramps ‡	Signal	A	5.5	B	16.9	A	8.4	N/A
24. Brunswick Rd / Loma Rica Dr†	Signal	B	11.6	B	15.5	A	8.2	N/A

AWS – all way stop
Bold indicates intersection operates below threshold
* meets warrant in 3:30 p.m. hour
† Nevada County
‡Grass Valley

Intersection Queues. Tables 24A and 24B present information regarding queuing at each study intersection under Cumulative plus Project conditions. 95th percentile queues with lengths exceeding the available storage are highlighted. The 95th percentile queue exceeds available storage in 23 locations at 15 intersections considering the five analysis scenarios. Table 24B presents a comparison of Cumulative plus Project, Scenario #1 to Cumulative conditions. During "Plus Project" conditions one intersection will have a storage length that is greater than 25 feet when compared to the "No Project" condition. This is the Brunswick Road / Sutton Road intersection where the northbound left turn lanes extend up to 110 feet beyond the "No Project" scenario. The queues at the intersections of Neal Street at Tinloy Street, Idaho Maryland Road at SR 49/20 Eastbound Ramps, Idaho Maryland Road at Railroad Avenue, Brunswick Road / Sutton Way and Brunswick Road / Loma Rica Drive will continue to have excessive queues while maintaining acceptable levels of service, serving the vehicles that do enter the intersections. Some other intersections will continue to have queues exceeding the available storage include those intersections signalized by 2035. Two additional locations will exceed the available storage. These include the eastbound left turn lane of Whispering Pines Lane at Brunswick Road and the eastbound left turn lane of the Eastbound SR 49/20 ramps at Dorsey Drive. It is assumed that one additional vehicle (25') can store in the available left or right turn taper and this occurs at six locations.

TABLE 24A
CUMULATIVE PLUS PROJECT QUEUES
CENTENNIAL SITE (SCENARIO #1)
PEAK HOURS

Location	Length*	Cum + Project AM Peak Hour Queue (feet)	Cum + Project PM Peak Hour Queue (feet)
1. Neal St / Tinloy St			
EB	70	117	117
WB	150	478	872
2. S. Auburn St / Tinloy St			
NB through	80	159	158
NB through-left	80	98	84
SB	75	109	153
WB	95	123	137
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp			
NB left turn	60	35	38
NB through	150	81	83
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp			
SB left turn	60	43	45
SB through	150	78	185

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 24A (continued)
CUMULATIVE PLUS PROJECT QUEUES
CENTENNIAL SITE (SCENARIO #1)
PEAK HOURS

Location	Length*	Cum + Project AM Peak Hour Queue (feet)	Cum + Project PM Peak Hour Queue (feet)
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps			
NB	---	30	34
SB	---	42	64
EB	---	160	90
WB	---	70	127
6. Idaho Maryland Rd / SR 49 EB Ramps			
NB right	---	192	35
NB left	355	212	134
WB	90	172	396
7. Idaho Maryland Rd / Railroad Ave			
EB	90	223	170
8. E. Main St / Brunswick Rd – W. Olympia Dr			
NB left	110	<25	<25
NB right	125	82	141
SB left (2 lanes)	355	123	206
WB left (2 lanes)	150	97	107
WB right	150	108	171
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr			
NB left	100	48	73
NB right	100	83	165
SB left (2 lanes)	260	198	201
SB right	260	67	83
EB	160	168	211
WB left	145	99	103
10. Brunswick Rd / SR 49 EB Ramps			
NB left	200	214	224
NB right	---	230	261
11. Brunswick Rd / Sutton Way			
NB left (2 lanes)	280	116	555
SB left	190	67	117
SB right	180	---	---
EB left (2 lanes)	185	88	141
EB right	250	134	228
WB left	125	103	186

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 24A (continued)
CUMULATIVE PLUS PROJECT QUEUES
CENTENNIAL SITE (SCENARIO #1)
PEAK HOURS

Location	Length*	Cum + Project AM Peak Hour Queue (feet)	Cum + Project PM Peak Hour Queue (feet)
12. Brunswick Rd / Idaho Maryland Rd			
NB left	540	262	275
SB left	120	55	196
EB left	150	<25	76
WB left	175	163	66
13. Brunswick Rd / Whispering Pines Ln			
NB left	210	<25	<25
EB left	110	<25	133
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd			
NB left	225	<25	<25
SB left	260	<25	28
EB	---	<25	<25
WB	---	70	28
15. Brunswick Rd / SR 174			
SB left	90	63	493
EB left	130	<25	<25
16. Brunswick Rd / Project Driveway			
NB left	350	<25	<25
EB	---	<25	28
17. E. Bennett Rd / Millsite Rd			
NB right	---	<25	<25
18. Whispering Pines Ln / Project Driveway			
NB	---	<25	<25
WB left	100	<25	<25
19. Idaho Maryland Rd / Centennial Dr			
NB	---	52	322
WB left	130	<25	<25
20. Idaho Maryland Rd /Sutton Way			
SB right	90	<25	60
SB left	---	<25	45
ÈB	---	40	165
WB	---	48	95
21. Sutton Way / Dorsey Dr			
SB right	120	<25	35
SB thru	---	33	268
NB	---	158	1595
EB	---	140	600

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 24A (continued)
CUMULATIVE PLUS PROJECT QUEUES
CENTENNIAL SITE (SCENARIO #1)
PEAK HOURS

Location	Length*	Cum + Project AM Peak Hour Queue (feet)	Cum + Project PM Peak Hour Queue (feet)
22. Dorsey Dr / SR 49 EB Ramps			
NB left (2 lanes)	215	226	135
NB right	215	147	99
EB left	180	100	179
23. Dorsey Dr / SR 49 EB Ramps			
SB right	400	73	60
SB left-thru	400	106	167
EB right	155	85	221
WB left	180	97	254
24. Brunswick Rd / Loma Rica Dr			
NB right	410	35	<25
SB left	400	254	110
WB left	100	63	136

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 24B
CUMULATIVE PLUS PROJECT QUEUES
CENTENNIAL SITE (SCENARIO #1)
(PROJECT TRAFFIC HOURS)

Location	Length*	No Project Cumulative 6:30 – 7:30 AM Queue (feet)	Plus Project Cumulative 6:30 – 7:30 AM Queue (feet)	No Project Cumulative 3:30 – 4:30 PM Queue (feet)	Plus Project Cumulative 3:30 – 4:30 PM Queue (feet)	No Project Cumulative 6:30 – 7:30 PM Queue (feet)	Plus Project Cumulative 6:30 – 7:30 PM Queue (feet)
1. Neal St / Tinloy St							
EB	70	84	80	116	115	119	120
WB	150	115	103	106	109	131	140
2. S. Auburn St / Tinloy St							
NB through	80	73	75	137	136	98	102
NB through-left	80	44	45	63	66	44	44
SB	75	86	84	139	134	123	133
WB	95	68	70	113	113	103	101
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp							
NB left turn	60	28	28	41	40	33	34
NB through	150	46	44	66	64	46	49
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp							
SB left turn	60	<25	<25	40	40	<25	<25
SB through	150	<25	<25	145	145	45	45
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps							
NB	---	<25	<25	32	32	<25	<25
SB	---	<25	<25	70	72	25	25
EB	---	39	41	86	88	34	36
WB	---	<25	<25	66	68	32	33
6. Idaho Maryland Rd / SR 49 EB Ramps							
NB right	---	39	51	48	48	<25	<25
NB left	355	81	87	151	151	50	52
WB	90	61	68	260	266	72	78
7. Idaho Maryland Rd / Railroad Ave							
EB	90	123	136	166	166	47	53

Highlighted values indicate queue length in excess of available storage with 25-feet or less increase from No Project condition
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 24B (continued)
CUMULATIVE PLUS PROJECT QUEUES
CENTENNIAL SITE (SCENARIO #1)
(PROJECT TRAFFIC HOURS)

Location	Length*	No Project Cumulative 6:30 – 7:30 AM Queue (feet)	Plus Project Cumulative 6:30 – 7:30 AM Queue (feet)	No Project Cumulative 3:30 – 4:30 PM Queue (feet)	Plus Project Cumulative 3:30 – 4:30 PM Queue (feet)	No Project Cumulative 6:30 – 7:30 PM Queue (feet)	Plus Project Cumulative 6:30 – 7:30 PM Queue (feet)
8. E. Main St / Brunswick Rd – W. Olympia Dr							
NB left	110	<25	<25	<25	<25	<25	<25
NB right	125	42	43	130	139	59	62
SB left (2 lanes)	355	68	67	175	176	106	109
WB left (2 lanes)	150	43	44	97	102	75	71
WB right	150	47	51	149	159	69	74
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr							
NB left	100	<25	28	68	66	54	53
NB right	100	30	30	131	117	84	85
SB left (2 lanes)	260	134	142	148	151	140	133
SB right	260	45	46	84	86	54	56
EB	160	61	65	202	203	128	141
WB left	145	61	61	106	106	90	93
10. Brunswick Rd / SR 49 EB Ramps							
NB left	200	141	152	215	218	180	177
NB right	---	106	102	262	258	110	97
11. Brunswick Rd / Sutton Way							
NB left (2 lanes)	280	58	55	435	545	141	136
SB left	190	38	37	115	110	52	57
SB right	180	---	---	---	<25	---	---
EB left (2 lanes)	185	61	53	127	138	66	63
EB right	250	52	50	224	220	98	96
WB left	125	48	49	177	179	84	79

Highlighted values indicate queue length in excess of available storage with 25-feet or less increase from No Project condition
Highlighted values indicate queue length in excess of available storage with more than 25-foot increase from No Project condition
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 24B (continued)
CUMULATIVE PLUS PROJECT QUEUES
CENTENNIAL SITE (SCENARIO #1)
(PROJECT TRAFFIC HOURS)

Location	Length*	No Project Cumulative 6:30 – 7:30 AM Queue (feet)	Plus Project Cumulative 6:30 – 7:30 AM Queue (feet)	No Project Cumulative 3:30 – 4:30 PM Queue (feet)	Plus Project Cumulative 3:30 – 4:30 PM Queue (feet)	No Project Cumulative 6:30 – 7:30 PM Queue (feet)	Plus Project Cumulative 6:30 – 7:30 PM Queue (feet)
12. Brunswick Rd / Idaho Maryland Rd							
NB left	540	90	108	151	166	56	76
SB left	120	<25	<25	188	188	103	106
EB left	150	34	25	74	74	39	39
WB left	175	100	99	68	68	43	43
13. Brunswick Rd / Whispering Pines Ln							
NB left	210	<25	<25	<25	<25	<25	<25
EB left	110	<25	<25	58	60	<25	<25
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd							
NB left	225	<25	<25	<25	<25	<25	<25
SB left	260	<25	<25	<25	<25	<25	<25
EB	---	<25	<25	<25	<25	<25	<25
WB	---	<25	<25	<25	<25	<25	<25
15. Brunswick Rd / SR 174							
SB left	90	25	28	248	260	45	48
EB left	130	<25	<25	<25	<25	<25	<25
16. Brunswick Rd / Project Driveway							
NB left	350	---	<25	---	<25	---	<25
EB	---	---	<25	---	<25	---	<25
17. E. Bennett Rd / Millsite Rd							
NB right	---	---	<25	---	<25	---	<25
18. Whispering Pines Ln / Project Driveway							
NB	---	---	<25	---	<25	---	<25
WB left	100	---	<25	---	<25	---	<25

Highlighted values indicate queue length in excess of available storage with 25-feet or less increase from No Project condition
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 24B (continued)
CUMULATIVE PLUS PROJECT QUEUES
CENTENNIAL SITE (SCENARIO #1)
(PROJECT TRAFFIC HOURS)

Location	Length*	No Project Cumulative 6:30 – 7:30 AM Queue (feet)	Plus Project Cumulative 6:30 – 7:30 AM Queue (feet)	No Project Cumulative 3:30 – 4:30 PM Queue (feet)	Plus Project Cumulative 3:30 – 4:30 PM Queue (feet)	No Project Cumulative 6:30 – 7:30 PM Queue (feet)	Plus Project Cumulative 6:30 – 7:30 PM Queue (feet)
19. Idaho Maryland Rd / Centennial Dr							
NB	---	28	29	285	285	29	30
WB left	130	<25	<25	<25	<25	<25	<25
20. Idaho Maryland Rd /Sutton Way							
SB right	90	<25	<25	48	48	<25	<25
SB left	---	<25	<25	35	35	<25	<25
ÈB	---	<25	<25	105	105	<25	<25
WB	---	<25	<25	55	60	<25	<25
21. Sutton Way / Dorsey Dr							
SB right	120	<25	<25	28	28	<25	<25
SB thru	---	<25	<25	190	190	<25	<25
NB	---	30	30	1333	1340	58	60
EB	---	25	25	188	188	<25	25
22. Dorsey Dr / SR 49 EB Ramps							
NB Left (2 lanes)	215	98	103	125	120	58	54
NB right	215	59	57	97	100	62	59
EB left	180	63	60	180	177	65	67
23. Dorsey Dr / SR 49 EB Ramps							
SB right	400	53	52	63	64	49	49
SB left-thru	400	43	42	165	162	64	67
EB right	155	41	44	218	217	40	42
WB left	180	73	74	253	250	108	111
24. Brunswick Rd / Loma Rica Dr							
NB right	410	32	32	27	27	<25	<25
SB left	400	134	146	147	147	69	74
WB left	100	35	38	178	178	36	38

Highlighted values indicate queue length in excess of available storage with 25-feet or less increase from No Project condition
* - longest lane for multiple turn lane approaches Queuing distances based on stochastic modeling

Cumulative Plus Project Conditions (Scenario #1) Roadway Segment Levels of Service. Table 25 summarizes the Levels of Service based on the Cumulative plus Project traffic volumes on study area roads with the existing roadway configuration. All segments along Brunswick Road and E. Bennett Road will continue to operate at LOS D or better while the SR 174 segment will continue to operate at LOS E. The SR 174 segment exceeds the LOS C threshold in both directions.

TABLE 25
CUMULATIVE PLUS PROJECT
CENTENNIAL SITE (SCENARIO #1)
ROADWAY SEGMENT LEVELS OF SERVICE

Roadway	Location	Facility Classification	ATS/PTSF/LOS Cumulative plus Project PM Peak Hour
Brunswick Rd	SR 49 to Whispering Pines Ln	Class I Highway	
	NB		29.7 / 82.4 / D
	SB		29.9 / 83.2 / D
	Whispering Pines Ln to E. Bennett Rd	Class I Highway	
	NB		34.5 / 87.2 / D
	SB		34.5 / 76.1 / D
	E. Bennett Rd to Project Driveway	Class I Highway	
	NB		34.7 / 69.1 / D
	SB		34.5 / 81.1 / D
	Project Driveway to SR 174	Class I Highway	
	NB		33.4 / 68.8 / D
	SB		32.7 / 81.8 / D
E. Bennett Rd	Project Driveway to Brunswick Rd	Class III Highway	
	EB		34.7 / 38.8 / C
	WB		34.7 / 57.8 / C
SR 174	Brunswick Rd to Empire St	Class I Highway	
	EB		**29.7 / 60.8 / E**
	WB		**28.6 / 81.5 / E**

ATS – average travel speed
PTSF – percent time spent following
LOS – level of service
Bold indicates LOS threshold exceeded

VII.3. Cumulative Plus Project Conditions (Scenario #2)

Scenario #2 considers transporting of engineered fill to construction sites accessible via SR 49/20.

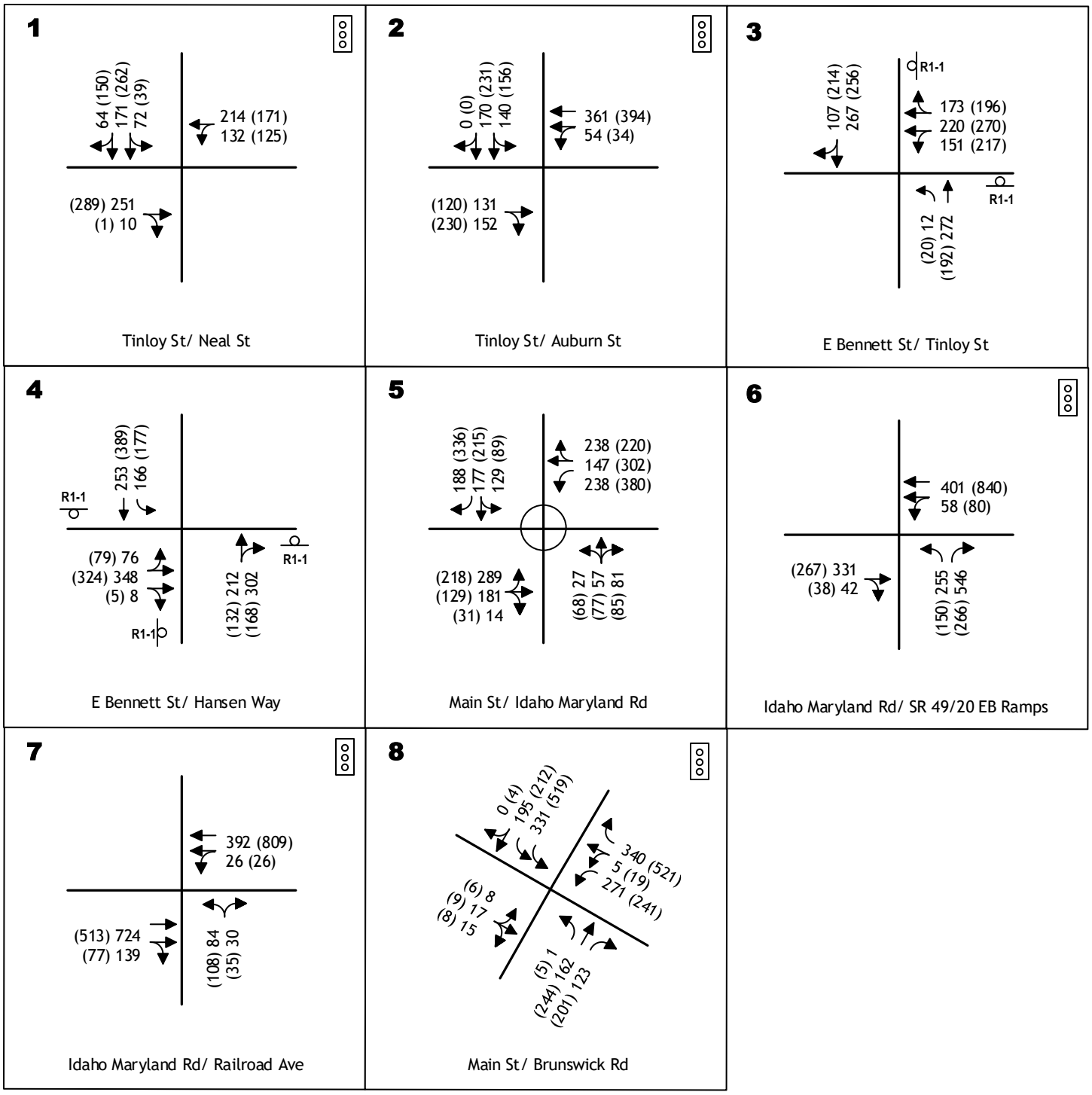
Traffic Volumes. The LOS impacts of the Idaho-Maryland Mine project have been identified by superimposing project traffic onto Cumulative conditions. Figures 13A through 13F display the "Cumulative Plus Project" traffic volumes at each study intersection for each of the five study time periods.

Cumulative plus Project volumes under Scenario #2 were used to recalculate operating Levels of Service at the study intersections. Tables 26A and 26B summarize operating Levels of Service at the study area intersections for each of the five study time periods.

During the peak hour scenario three intersections would continue to operate at unacceptable Levels of Service, at LOS E or F, which include Brunswick Road at E. Bennett Road – Greenhorn Road, SR 174 at Brunswick Road and Sutton Way at Dorsey Drive. One additional intersection, Brunswick Road at Whispering Pines Lane, would decline to LOS E.

During the project traffic hours two intersections will operate below the LOS threshold, at LOS E or F. These include Sutton Way at Dorsey Drive and SR 174 at Brunswick Road.

Eight intersections will meet the peak hour signal warrant during the a.m. and p.m. peak hour scenarios. These include E. Bennett Road at Tinloy Street - SR 49 WB Off-Ramp, E. Bennett Street at Hansen Way - SR 49 EB On-Ramp, Brunswick Road at Whispering Pines Lane, Brunswick Road at E. Bennett Road – Greenhorn Road, SR 174 at Brunswick Road, Brunswick Road at Project Driveway, Idaho-Maryland Road at Sutton Way and Sutton Way at Dorsey Drive. The Brunswick Road at Whispering Pines Lane, Brunswick Road at E. Bennett Road, SR 174 at Brunswick Road and Sutton Way at Dorsey Drive intersections also operate below the accepted LOS threshold. While the E. Bennett Road at Tinloy Street - SR 49 WB Off-Ramp, E. Bennett Street at Hansen Way - SR 49 EB On-Ramp, Idaho-Maryland Road at Sutton Way and Brunswick Road / Project Driveway intersections meet the peak hour signal warrant, they operate acceptably. During the project hour analyses the same eight intersections will meet the peak hour signal warrant; however, only the SR 174 at Brunswick Road and Sutton Way at Dorsey Drive intersections will operate below the accepted LOS threshold.

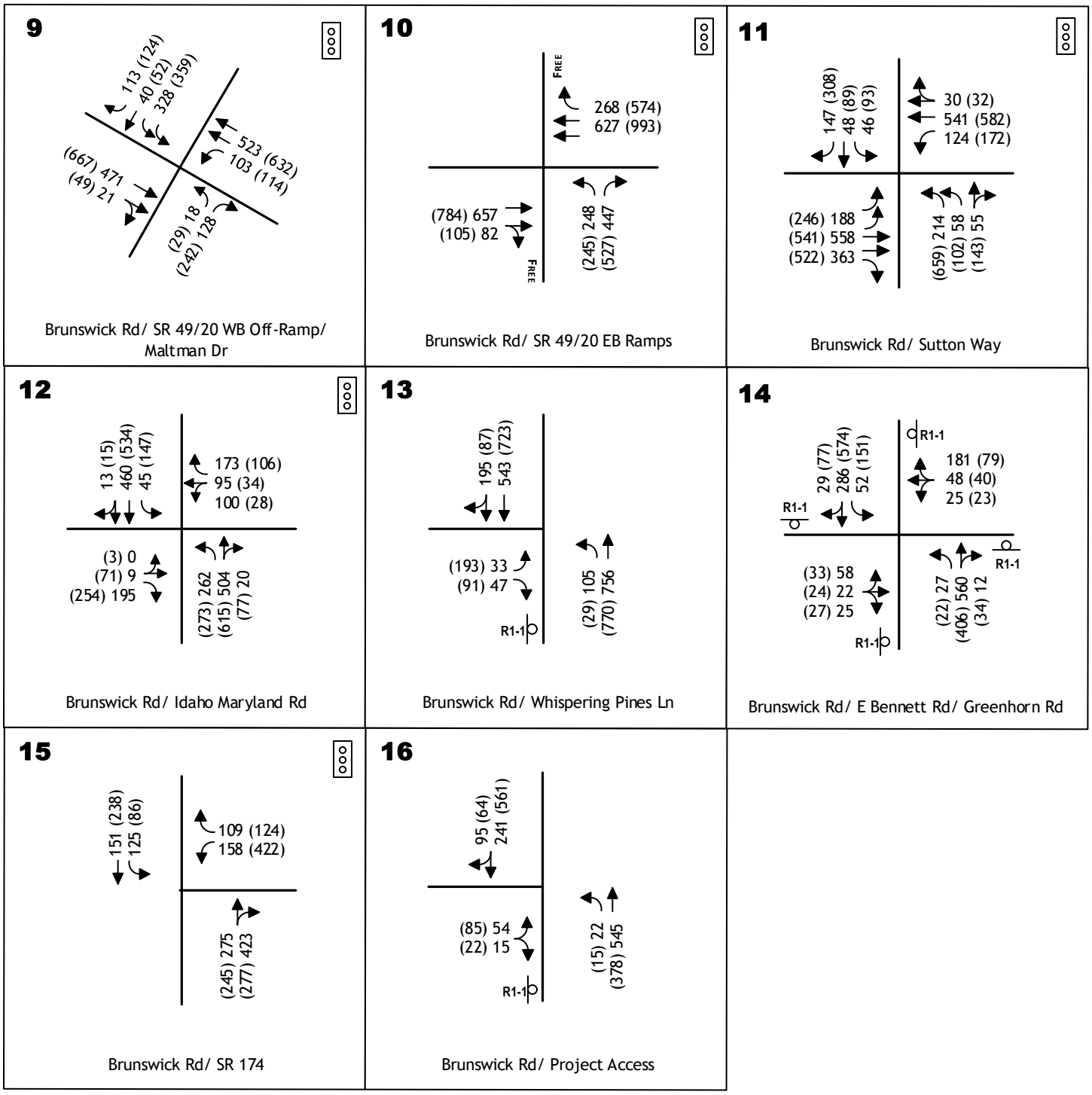


AM/PM PEAK HOURS CUMULATIVE PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS
(TO SR 49)

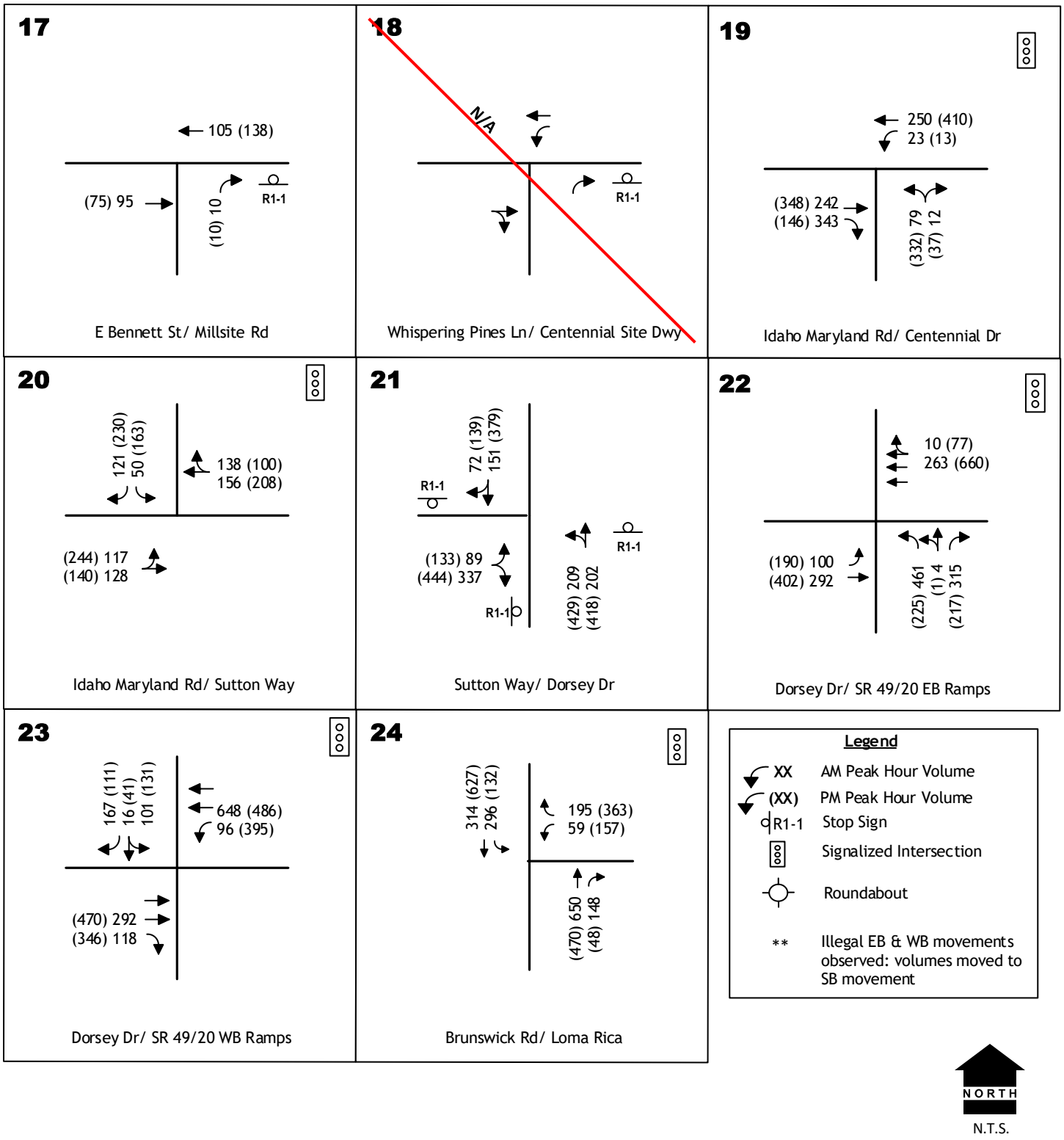
KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 13a



AM/PM PEAK HOURS CUMULATIVE PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS
(TO SR 49)

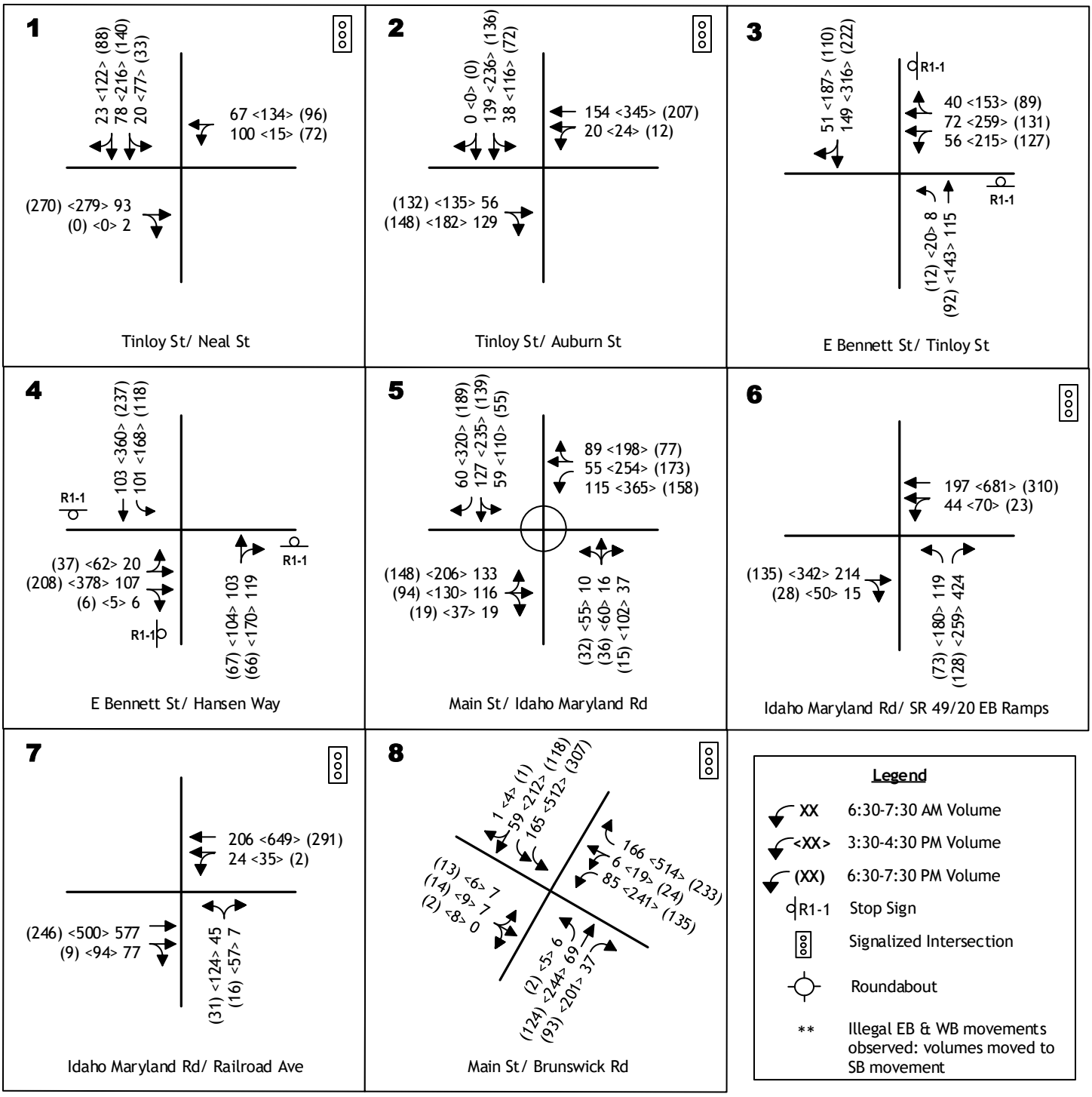


AM/PM PEAK HOURS EPAP PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS
(TO SR 49)

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 13c

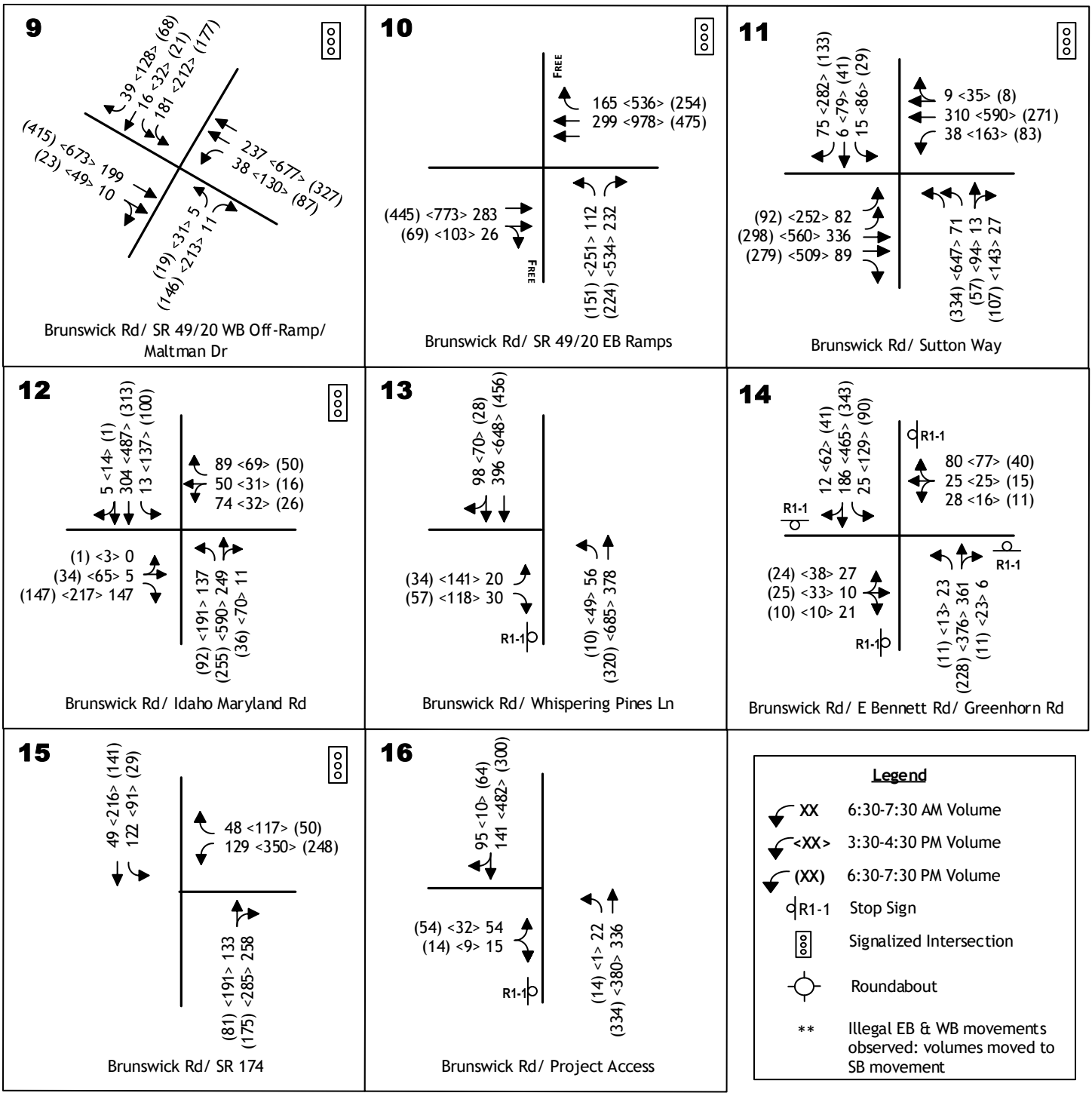


PROJECT TRAFFIC HOURS CUMULATIVE PLUS PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS (TO SR 49)

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 13d



PROJECT TRAFFIC HOURS CUMULATIVE PLUS PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS (TO SR 49)

KD Anderson & Associates, Inc.
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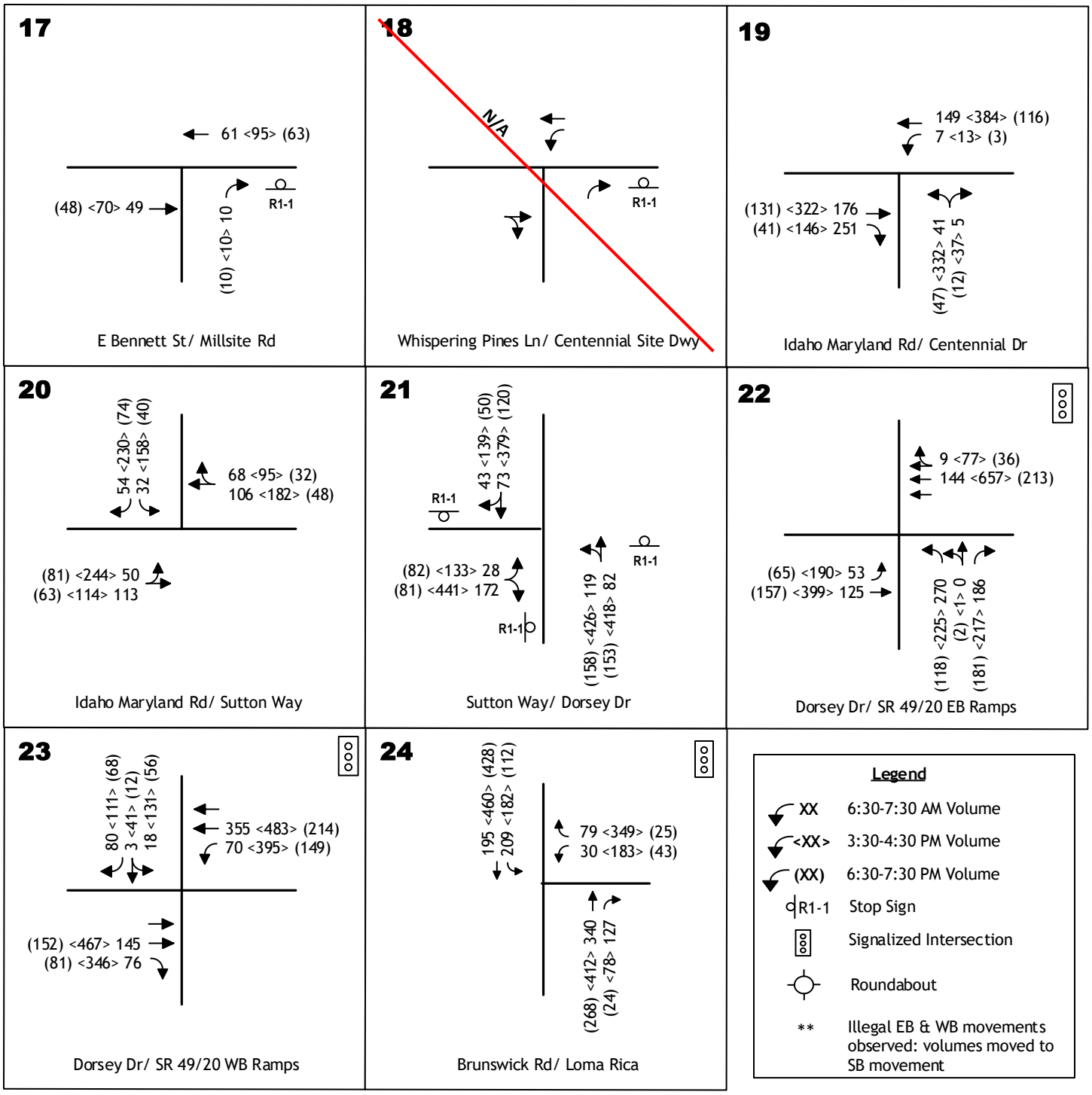
figure 13e



PROJECT TRAFFIC HOURS CUMULATIVE PLUS PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS (TO SR 49)

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 13f

TABLE 26A
CUMULATIVE PLUS PROJECT – TO SR 49 (SCENARIO #2)
LEVELS OF SERVICE AT INTERSECTIONS
PEAK HOURS

Location	Control	Cum plus Project AM Peak Hour		Cum plus Project PM Peak Hour		Meets Peak Hour Warrant?
		LOS	Average Delay	LOS	Average Delay	
1. Neal St / Tinloy St ‡◊	Signal	B	19.2	C	26.9	N/A
2. S. Auburn St / Tinloy St ‡◊	Signal	B	10.9	B	13.6	N/A
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp ‡◊	SB / WB Stop	A	7.1	B	9.7	Yes
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp ‡◊	AWS	D	33.8	C	21.0	Yes
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps ‡◊	Roundabout	A	9.5	A	9.1	N/A
6. Idaho Maryland Rd / SR 49 EB Ramps ‡◊	Signal	C	22.0	C	20.1	N/A
7. Idaho Maryland Rd / Railroad Ave ‡◊	Signal	B	15.4	C	21.3	N/A
8. E. Main St / Brunswick Rd – W. Olympia Dr ‡Δ	Signal	B	11.3	B	17.2	N/A
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr ‡♦	Signal	B	19.2	C	21.1	N/A
10. Brunswick Rd / SR 49 EB Ramps ‡▲	Signal	B	12.6	B	14.3	N/A
11. Brunswick Rd / Sutton Way ‡▲	Signal	B	13.9	C	31.8	N/A
12. Brunswick Rd / Idaho Maryland Rd ‡●	Signal	C	28.5	D	38.1	N/A
13. Brunswick Rd / Whispering Pines Ln ‡● NB Left EB	EB Stop	 B C	 10.1 15.7	 A **E**	 9.8 **35.3**	Yes
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd †●	AWS	**F**	**55.1**	**E**	**49.2**	Yes
15. Brunswick Rd / SR 174 †● EB Left SB	SB Stop	 A C	 8.2 18.6	 A **F**	 8.0 **125.0**	Yes
16. Brunswick Rd / Project Driveway †● NB Left EB	EB Stop	 A B	 8.0 13.1	 A C	 9.0 16.2	Yes

AWS – all way stop
Bold indicates intersection operates below threshold
† Nevada County
‡Grass Valley

◊ 8:00 – 9:00 a.m. / 4:30 – 5:30 p.m.
♦ 8:00 – 9:00 a.m. / 4:15 – 5:15 p.m.
● 7:45 – 8:45 a.m. / 4:30 – 5:30 p.m.

Δ 8:00 – 9:00 a.m. / 3:30 – 5:30 p.m.
▲ 8:00 – 9:00 a.m. / 3:45 – 4:45 p.m.
□ 8:00 – 9:00 a.m. / 5:00 – 6:00 p.m.

TABLE 26A (continued)
CUMULATIVE PLUS PROJECT – TO SR 49 (SCENARIO #2)
LEVELS OF SERVICE AT INTERSECTIONS
PEAK HOURS

Location	Control	Cum plus Project AM Peak Hour		Cum plus Project PM Peak Hour		Meets Peak Hour Warrant?
		LOS	Average Delay	LOS	Average Delay	
17. E. Bennett Rd / Millsite Rd †● NB	NB Stop	A	8.8	A	8.7	No
18. Whispering Pines Ln / Centennial Site Driveway	Not Applicable					
19. Idaho Maryland Rd / Centennial Dr ‡Δ	Signal	A	7.6	B	14.6	N/A
20 Idaho Maryland Rd /Sutton Way ‡Δ	AWS	B	10.2	C	18.7	Yes
21. Sutton Way / Dorsey Dr ‡Δ	AWS	C	19.5	**F**	**279.9**	Yes
22. Dorsey Dr / SR 49 EB Ramps ‡Δ	Signal	B	13.9	B	14.7	N/A
23. Dorsey Dr / SR 49 WB Ramps ‡Δ	Signal	A	9.6	B	19.6	N/A
24. Brunswick Rd / Loma Rica Dr†□	Signal	C	25.2	B	16.0	N/A

AWS – all way stop
Bold indicates intersection operates below threshold
† Nevada County
‡Grass Valley

◊ 8:00 – 9:00 a.m. / 4:30 – 5:30 p.m.
♦ 8:00 – 9:00 a.m. / 4:15 – 5:15 p.m.
● 7:45 – 8:45 a.m. / 4:30 – 5:30 p.m.

Δ 8:00 – 9:00 a.m. / 3:30 – 5:30 p.m.
▲ 8:00 – 9:00 a.m. / 3:45 – 4:45 p.m.
□ 8:00 – 9:00 a.m. / 5:00 – 6:00 p.m.

TABLE 26B
CUMULATIVE PLUS PROJECT – TO SR 49 (SCENARIO #2)
PEAK HOUR LEVELS OF SERVICE AT INTERSECTIONS – PROJECT TRAFFIC HOURS

Location	Control	Cum plus Project 6:30 – 7:30 AM		Cum plus Project 3:30 – 4:30 PM		Cum plus Project 6:30 – 7:30 PM		Meets Peak Hour Warrant?
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
1. Neal St / Tinloy St ‡	Signal	A	7.2	A	9.7	B	12.4	N/A
2. S. Auburn St / Tinloy St ‡	Signal	A	7.2	B	10.0	A	9.0	N/A
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp ‡	SB/WB Stop	A	4.0	A	7.6	A	4.5	Yes*
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp ‡	AWS	A	9.6	C	18.3	B	10.8	Yes*
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps ‡	Roundabout	A	5.3	A	8.4	A	5.0	N/A
6. Idaho Maryland Rd / SR 49 EB Ramps ‡	Signal	B	13.3	B	19.6	B	12.0	N/A
7. Idaho Maryland Rd / Railroad Ave ‡	Signal	B	11.7	B	19.4	B	12.4	N/A
8. E. Main St / Brunswick Rd – W. Olympia Dr ‡	Signal	A	6.5	B	14.3	B	10.2	N/A
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr ‡	Signal	B	17.7	B	17.8	B	16.4	N/A
10. Brunswick Rd / SR 49 EB Ramps ‡	Signal	A	8.2	B	14.9	A	8.7	N/A
11. Brunswick Rd / Sutton Way ‡	Signal	A	5.3	C	30.0	B	10.7	N/A
12. Brunswick Rd / Idaho Maryland Rd ‡	Signal	B	18.5	C	33.0	B	18.8	N/A
13. Brunswick Rd / Whispering Pines Ln ‡ NB Left EB	EB Stop	 A B	 8.7 11.6	 A C	 9.4 20.0	 A B	 8.5 11.3	Yes*
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd †	AWS	B	13.0	D	27.2	B	12.6	Yes*
15. Brunswick Rd / SR 174 † EB Left SB	SB Stop	 A B	 7.8 13.4	 A **E**	 7.8 **48.9**	 A B	 7.4 13.1	Yes*
16. Brunswick Rd / Project Driveway † NB Left EB	EB Stop	 A B	 7.8 11.4	 A B	 8.5 12.9	 A B	 8.1 12.2	Yes*

AWS – all way stop
Bold indicates intersection operates below threshold
† Nevada County
‡Grass Valley
* meets warrant in 3:30 p.m. hour

TABLE 26B (continued)
CUMULATIVE PLUS PROJECT – TO SR 49 (SCENARIO #2)
PEAK HOUR LEVELS OF SERVICE AT INTERSECTIONS
PROJECT TRAFFIC HOURS

Location	Control	Cum plus Project 6:30 – 7:30 AM		Cum plus Project 3:30 – 4:30 PM		Cum plus Project 6:30 – 7:30 PM		Meets Peak Hour Warrant?
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
17. E. Bennett Rd / Millsite Rd † NB	NB Stop	A	8.6	A	8.7	A	8.6	No
18. Whispering Pines Ln / Centennial Site Driveway	Not Applicable							
19. Idaho Maryland Rd / Centennial Dr ‡	Signal	A	6.6	B	11.5	A	7.4	N/A
20. Idaho Maryland Rd /Sutton Way ‡	AWS	A	8.4	B	14.5	A	8.1	Yes*
21. Sutton Way / Dorsey Dr ‡	AWS	A	9.1	**F**	**214.3**	B	10.5	Yes*
22. Dorsey Dr / SR 49 EB Ramps ‡	Signal	A	8.7	B	15.3	A	9.3	N/A
23. Dorsey Dr / SR 49 WB Ramps ‡	Signal	A	5.8	B	17.6	A	8.5	N/A
24. Brunswick Rd / Loma Rica Dr†	Signal	B	11.6	B	15.5	A	8.2	N/A

AWS – all way stop
Bold indicates intersection operates below threshold
* meets warrant in 3:30 p.m. hour

† Nevada County
‡Grass Valley

Intersection Queues. Tables 27A and 27B present information regarding queuing at each study intersection under Cumulative plus Project conditions. 95th percentile queues with lengths exceeding the available storage are highlighted. The 95th percentile queue exceeds available storage in 23 locations at 15 intersections considering the five analysis scenarios. Table 27B presents a comparison of Cumulative plus Project, Scenario #2 to Cumulative conditions. During "Plus Project" conditions one intersection will have a storage length that is greater than 25 feet when compared to the "No Project" condition. This is the Brunswick Road / Sutton Road intersection where the northbound left turn lanes extend up to 55 feet beyond the "No Project" scenario. The queues at the intersections of Neal Street at Tinloy Street, Idaho Maryland Road at SR 49/20 Eastbound Ramps, Idaho Maryland Road at Railroad Avenue, Brunswick Road / Sutton Way and Brunswick Road / Loma Rica Drive will continue to have excessive queues while maintaining acceptable levels of service, serving the vehicles that do enter the intersections. Some other intersections will continue to have queues exceeding the available storage include those intersections signalized by 2035. Two additional locations will exceed the available storage. These include the eastbound left turn lane of Whispering Pines Lane at Brunswick Road and the eastbound left turn lane of the Eastbound SR 49/20 ramps at Dorsey Drive. It is assumed that one additional vehicle (25') can store in the available left or right turn taper and this occurs at six locations.

TABLE 27A
CUMULATIVE PLUS PROJECT QUEUES
TO SR 49 (SCENARIO #2)
PEAK HOURS

Location	Length*	Cum + Project AM Peak Hour Queue (feet)	Cum + Project PM Peak Hour Queue (feet)
1. Neal St / Tinloy St			
EB	70	116	118
WB	150	332	451
2. S. Auburn St / Tinloy St			
NB through	80	141	166
NB through-left	80	88	85
SB	75	105	148
WB	95	123	137
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp			
NB left turn	60	35	38
NB through	150	80	84
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp			
SB left turn	60	43	45
SB through	150	78	185
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps			
NB	---	30	34
SB	---	42	64
EB	---	159	90
WB	---	70	126

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 27A (continued)
CUMULATIVE PLUS PROJECT QUEUES
TO SR 49 (SCENARIO #2)
PEAK HOURS

Location	Length*	Cum + Project AM Peak Hour Queue (feet)	Cum + Project PM Peak Hour Queue (feet)
6. Idaho Maryland Rd / SR 49 EB Ramps			
NB right	---	192	35
NB left	355	212	134
WB	90	172	396
7. Idaho Maryland Rd / Railroad Ave			
EB	90	223	170
8. E. Main St / Brunswick Rd – W. Olympia Dr			
NB left	110	<25	<25
NB right	125	84	143
SB left (2 lanes)	355	118	209
WB left (2 lanes)	150	100	109
WB right	150	106	162
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr			
NB left	100	52	77
NB right	100	83	161
SB left (2 lanes)	260	198	203
SB right	260	74	84
EB	160	161	211
WB left	145	103	103
10. Brunswick Rd / SR 49 EB Ramps			
NB left	200	220	216
NB right	---	230	261
11. Brunswick Rd / Sutton Way			
NB left (2 lanes)	280	122	604
SB left	190	65	119
SB right	180	---	---
EB left (2 lanes)	185	90	135
EB right	250	130	218
WB left	125	106	190
12. Brunswick Rd / Idaho Maryland Rd			
NB left	540	262	275
SB left	120	55	196
EB left	150	<25	76
WB left	175	163	66
13. Brunswick Rd / Whispering Pines Ln			
NB left	210	<25	<25
EB left	110	<25	130

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 27A (continued)
CUMULATIVE PLUS PROJECT QUEUES
TO SR 49 (SCENARIO #2) – PEAK HOURS

Location	Length*	Cum + Project AM Peak Hour Queue (feet)	Cum + Project PM Peak Hour Queue (feet)
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd			
NB left	225	<25	<25
SB left	260	<25	28
EB	---	<25	<25
WB	---	70	28
15. Brunswick Rd / SR 174			
SB left	90	63	493
EB left	130	<25	<25
16. Brunswick Rd / Project Driveway			
NB left	350	<25	<25
EB	---	<25	28
17. E. Bennett Rd / Millsite Rd			
NB right	---	<25	<25
18. Whispering Pines Ln / Centennial Site Driveway – Not Applicable			
19. Idaho Maryland Rd / Centennial Dr			
NB	---	52	322
WB left	130	<25	<25
20. Idaho Maryland Rd /Sutton Way			
SB right	90	<25	60
SB left	---	<25	45
ÈB	---	40	165
WB	---	48	95
21. Sutton Way / Dorsey Dr			
SB right	120	<25	35
SB thru	---	33	268
NB	---	158	1595
EB	---	140	600
22. Dorsey Dr / SR 49 EB Ramps			
NB left (2 lanes)	215	217	121
NB right	215	146	97
EB left	180	95	174
23. Dorsey Dr / SR 49 EB Ramps			
SB right	400	76	61
SB left-thru	400	103	168
EB right	155	72	225
WB left	180	104	259
24. Brunswick Rd / Loma Rica Dr			
NB right	410	35	<25
SB left	400	254	110
WB left	100	63	136

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 27B
CUMULATIVE PLUS PROJECT QUEUES
TO SR 49 (SCENARIO #2)
(PROJECT TRAFFIC HOURS)

Location	Length*	No Project Cumulative 6:30 – 7:30 AM Queue (feet)	Plus Project Cumulative 6:30 – 7:30 AM Queue (feet)	No Project Cumulative 3:30 – 4:30 PM Queue (feet)	Plus Project Cumulative 3:30 – 4:30 PM Queue (feet)	No Project Cumulative 6:30 – 7:30 PM Queue (feet)	Plus Project Cumulative 6:30 – 7:30 PM Queue (feet)
1. Neal St / Tinloy St							
EB	70	84	86	116	117	119	118
WB	150	115	116	106	110	131	144
2. S. Auburn St / Tinloy St							
NB through	80	73	76	137	144	98	97
NB through-left	80	44	46	63	69	44	45
SB	75	86	84	139	137	123	129
WB	95	68	69	113	117	103	93
3. E. Bennett Rd / Tinloy St – SR 49 WB Off-Ramp							
NB left turn	60	28	26	41	40	33	34
NB through	150	46	47	66	64	46	48
4. E. Bennett Rd / Hansen Way – SR 49 EB On-Ramp							
SB left turn	60	<25	<25	40	40	<25	<25
SB through	150	<25	<25	145	145	45	45
5. E. Main St / Idaho Maryland Rd - SR 49 WB Ramps							
NB	---	<25	<25	32	32	<25	<25
SB	---	<25	<25	70	71	25	25
EB	---	39	41	86	88	34	34
WB	---	<25	<25	66	67	32	32
6. Idaho Maryland Rd / SR 49 EB Ramps							
NB right	---	39	51	48	48	<25	<25
NB left	355	81	87	151	151	50	52
WB	90	61	68	260	266	72	78
7. Idaho Maryland Rd / Railroad Ave							
EB	90	123	136	166	166	47	53

Highlighted values indicate queue length in excess of available storage with 25-feet or less increase from No Project condition
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 27B (continued)
CUMULATIVE PLUS PROJECT QUEUES
TO SR 49 (SCENARIO #2)
(PROJECT TRAFFIC HOURS)

Location	Length*	No Project Cumulative 6:30 – 7:30 AM Queue (feet)	Plus Project Cumulative 6:30 – 7:30 AM Queue (feet)	No Project Cumulative 3:30 – 4:30 PM Queue (feet)	Plus Project Cumulative 3:30 – 4:30 PM Queue (feet)	No Project Cumulative 6:30 – 7:30 PM Queue (feet)	Plus Project Cumulative 6:30 – 7:30 PM Queue (feet)
8. E. Main St / Brunswick Rd – W. Olympia Dr							
NB left	110	<25	<25	<25	<25	<25	<25
NB right	125	42	43	130	134	59	70
SB left (2 lanes)	355	68	66	175	177	106	117
WB left (2 lanes)	150	43	47	97	106	75	73
WB right	150	47	55	149	155	69	73
9. Brunswick Rd / SR 49 WB Off-Ramp – Maltman Dr							
NB left	100	<25	<25	68	70	54	51
NB right	100	30	30	131	128	84	83
SB left (2 lanes)	260	134	144	148	149	140	140
SB right	260	45	50	84	86	54	52
EB	160	61	62	202	205	128	139
WB left	145	61	65	106	107	90	89
10. Brunswick Rd / SR 49 EB Ramps							
NB left	200	141	153	215	225	180	179
NB right	---	106	94	262	259	110	96
11. Brunswick Rd / Sutton Way							
NB left (2 lanes)	280	58	56	435	490	141	139
SB left	190	38	39	115	113	52	54
SB right	180	---	---	---	---	---	---
EB left (2 lanes)	185	61	60	127	134	66	62
EB right	250	52	50	224	208	98	95
WB left	125	48	47	177	181	84	79

Highlighted values indicate queue length in excess of available storage with 25-feet or less increase from No Project condition
Highlighted values indicate queue length in excess of available storage with more than 25-foot increase from No Project condition
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 27B (continued)
CUMULATIVE PLUS PROJECT QUEUES
TO SR 49 (SCENARIO #2)
(PROJECT TRAFFIC HOURS)

Location	Length*	No Project Cumulative 6:30 – 7:30 AM Queue (feet)	Plus Project Cumulative 6:30 – 7:30 AM Queue (feet)	No Project Cumulative 3:30 – 4:30 PM Queue (feet)	Plus Project Cumulative 3:30 – 4:30 PM Queue (feet)	No Project Cumulative 6:30 – 7:30 PM Queue (feet)	Plus Project Cumulative 6:30 – 7:30 PM Queue (feet)
12. Brunswick Rd / Idaho Maryland Rd							
NB left	540	90	108	151	166	56	77
SB left	120	<25	<25	188	188	103	107
EB left	150	34	<25	74	74	39	39
WB left	175	100	99	68	68	43	44
13. Brunswick Rd / Whispering Pines Ln							
NB left	210	<25	<25	<25	<25	<25	<25
EB left	110	<25	<25	58	60	<25	<25
14. Brunswick Rd / E. Bennett Rd – Greenhorn Rd							
NB left	225	<25	<25	<25	<25	<25	<25
SB left	260	<25	<25	<25	<25	<25	<25
EB	---	<25	<25	<25	<25	<25	<25
WB	---	<25	<25	<25	<25	<25	<25
15. Brunswick Rd / SR 174							
SB left	90	25	28	248	260	45	48
EB left	130	<25	<25	<25	<25	<25	<25
16. Brunswick Rd / Project Driveway							
NB left	350	---	<25	---	<25	---	<25
EB	---	---	<25	---	<25	---	<25
17. E. Bennett Rd / Millsite Rd							
NB right	---	---	<25	---	<25	---	<25
18. Whispering Pines Ln / Project Driveway – Not Applicable							
19. Idaho Maryland Rd / Centennial Dr							
NB	---	28	29	285	285	29	30
WB left	130	<25	<25	<25	<25	<25	<25

Highlighted values indicate queue length in excess of available storage with 25-feet or less increase from No Project condition
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

TABLE 27B (continued)
CUMULATIVE PLUS PROJECT QUEUES
TO SR 49 (SCENARIO #2)
(PROJECT TRAFFIC HOURS)

Location	Length*	No Project Cumulative 6:30 – 7:30 AM Queue (feet)	Plus Project Cumulative 6:30 – 7:30 AM Queue (feet)	No Project Cumulative 3:30 – 4:30 PM Queue (feet)	Plus Project Cumulative 3:30 – 4:30 PM Queue (feet)	No Project Cumulative 6:30 – 7:30 PM Queue (feet)	Plus Project Cumulative 6:30 – 7:30 PM Queue (feet)
20. Idaho Maryland Rd /Sutton Way							
SB right	90	<25	<25	48	48	<25	<25
SB left	---	<25	<25	35	35	<25	<25
ÈB	---	<25	<25	105	105	<25	<25
WB	---	<25	<25	55	60	<25	<25
21. Sutton Way / Dorsey Dr							
SB right	120	<25	<25	28	28	<25	<25
SB thru	---	<25	<25	190	190	<25	<25
NB	---	30	30	1333	1340	58	60
EB	---	25	25	188	188	<25	25
22. Dorsey Dr / SR 49 EB Ramps							
NB Left (2 lanes)	215	98	101	125	128	58	52
NB right	215	59	60	97	101	62	63
EB left	180	63	63	180	174	65	75
23. Dorsey Dr / SR 49 EB Ramps							
SB right	400	53	52	63	59	49	49
SB left-thru	400	43	38	165	161	64	69
EB right	155	41	42	218	220	40	49
WB left	180	73	76	253	249	108	114
24. Brunswick Rd / Loma Rica Dr							
NB right	410	32	32	27	27	<25	<25
SB left	400	134	146	147	147	69	74
WB left	100	35	38	178	178	36	38

Highlighted values indicate queue length in excess of available storage with 25-feet or less increase from No Project condition
* - longest lane for multiple turn lane approaches
Queuing distances based on stochastic modeling

Cumulative Plus Project Conditions (Scenario #2) Roadway Segment Levels of Service. Table 28 summarizes the Levels of Service based on the Cumulative plus Project traffic volumes on study area roads with the existing roadway configuration. All segments along Brunswick Road and E. Bennett Road will continue to operate at LOS D or better while the SR 174 segment will continue to operate at LOS E. The SR 174 segment exceeds the LOS C threshold in both directions.

TABLE 28
CUMULATIVE PLUS PROJECT
TO SR 49 (SCENARIO #2)
ROADWAY SEGMENT LEVELS OF SERVICE

Roadway	Location	Facility Classification	ATS/PTSF/LOS Cumulative plus Project PM Peak Hour
Brunswick Rd	SR 49 to Whispering Pines Ln	Class I Highway	
	NB		29.5 / 82.5 / D
	SB		29.8 / 83.5 / D
	Whispering Pines Ln to E. Bennett Rd	Class I Highway	
	NB		34.1 / 87.8 / D
	SB		34.5 / 76.1 / D
	E. Bennett Rd to Project Driveway	Class I Highway	
	NB		34.6 / 69.4 / D
	SB		34.5 / 81.1 / D
	Project Driveway to SR 174	Class I Highway	
	NB		33.4 / 68.8 / D
	SB		32.7 / 81.8 / D
E. Bennett Rd	Project Driveway to Brunswick Rd	Class III Highway	
	EB		34.7 / 38.8 / C
	WB		34.7 / 57.8 / C
SR 174	Brunswick Rd to Empire St	Class I Highway	
	EB		**29.7 / 60.8 / E**
	WB		**28.6 / 81.5 / E**

ATS – average travel speed
PTSF – percent time spent following
LOS – level of service
Bold indicates LOS threshold exceeded

VIII. PAVEMENT CONDITION ANALYSIS

The purpose of this analysis is to assess the impact of the project on the roadway pavement where engineered fill haul trucks and other trucks, such as delivery vehicles and concentrate shipments, are expected to travel through NCTC's 2035 cumulative year traffic model.

Truck traffic is the primary factor affecting pavement design life and is therefore used to engineer pavement thickness. Passenger cars and pick-up trucks are considered to have a negligible impact when considering traffic loads. Traffic loads are transmitted to the pavement surface from the vehicle axles, and the loading is determined by using established constants to convert truck data into 18,000-pound Equivalent Single Axle Loads (ESAL). These ESAL's are converted into a Traffic Index (TI) which is then used to calculate the minimum pavement thickness. Pavement impacts were analyzed based on a comparison of the Traffic Index (TI) under 'Plus Project' and 'No Project' conditions. The segments studied include Brunswick Road from the project driveway north to the SR 49 / 20 interchange and along Whispering Pines Lane to the proposed Centennial site driveway.

VIII.1. Project Truck Trip Generation

Pavement analyses consider truck and bus traffic with ESAL constants varying for 2,3,4 and 5+ axle classifications. Pavement conditions were analyzed for an average day over a 20-year study period. Engineered fill will be transported in 4-axle single unit trucks. Other trucks providing materials and fuel were also assumed to be 5-axle trucks / semi-trailers. Truck trip generation for the Idaho-Maryland Mine project was estimated as shown in Table 29. The trip generation is based upon the project description identifying the projected truck traffic at both sites for the length of the project. Haul truck traffic between the Brunswick and Centennial sites is projected to last for five years of the 20-year study period while the engineered fill trucks are projected to access SR 49/20 for 15 of those years. All other trucks will access the site from the SR 49/20 interchange for the entire 20-year period.

TABLE 29
PROJECT TRUCKS (1-WAY)

Trip Type	Centennial Site Scenario #1	SR 49 Scenario #2
Engineered Fill		
Inbound Trucks (average daily)	50	50
Outbound Trucks (average daily)	50	50
Other Trucks (Brunswick Site)*		
Inbound Trucks (average daily)	6	6
Outbound Trucks (average daily)	6	6
Other Trucks† (Centennial Site)		
Inbound Trucks (average daily)	1	0
Outbound Trucks (average daily)	1	0
Total Trucks		
Inbound Trucks (average daily)	**57**	**56**
Outbound Trucks (average daily)	**57**	**56**

* includes fuel trucks, explosives trucks, cement delivery and freight trucks
† includes fuel trucks

VIII.2. Pavement Condition Analysis

The impact of the Idaho-Maryland Mine project on roadway pavement conditions was evaluated for this report. The assessment of pavement is based on Chapters 600, 610, and 630 of the *Highway Design Manual* (California Department of Transportation, 2018). As stated in the *Highway Design Manual*, pavements should be engineered to carry the truck traffic loads expected during the pavement design life. Truck traffic, which includes buses, trucks, and truck-trailers, is the primary factor affecting pavement design life and its serviceability. The methods described in the *Highway Design Manual* for evaluating impacts specify how to estimate traffic loading and pavement performance. Traffic loading is estimated by using established constants to convert truck traffic volumes into 18-kip[1] equivalent single axle loads (ESALs).

Caltrans identifies 20 and 40-year design life periods when constructing or rehabilitating pavement. For this report a 20-year design life was used to calculate the Traffic Index (TI). The ESAL constants, as described in the *Highway Design Manual*, are presented in Table 30. The total projected ESALs during the pavement design life are converted into a TI (Table 31) that is used along with the characteristics of the subgrade soils (R-Value) to determine the required pavement thickness.

[1] 1 kip equals 1,000 pounds

TABLE 30
EQUIVALENT SINGLE AXLE LOAD CONSTANTS

Vehicle Type (By Axle Classification)	10-Year Constants	20-Year Constants	30-Year Constants	40-Year Constants
2-axle Trucks or Buses	690	1,380	2,070	2,760
3-axle Trucks or Buses	1,840	3,680	5,520	7,360
4-axle Trucks or Buses	2,940	5,880	8,820	11,760
5 or more-axle Trucks	6,890	13,780	20,670	27,560

Source: Caltrans Highway Design Manual (California Department of Transportation, 2012)

A fundamental characteristic of pavement condition analysis as described in the *Highway Design Manual* is that the TI value is calculated for a design life. The pavement condition analysis is analyzed over its design life timeframe. The mid-point of the timeline, in this analysis, is 10 years from Existing conditions, and represents the "average" ESAL over the design life. The proposed project will haul engineered fill between the Brunswick site and the Centennial site for five years while engineered fill will be hauled offsite via SR 49/20 for 15 years; therefore, the haul route between the Brunswick and Centennial sites will be used for 25% of the time while the SR 49 route will be used for 75% of the time. Other trucks, materials delivery and concentrate trucks, will access the Brunswick Road / SR 49/20 interchange throughout the duration of the project.

The *Highway Design Manual* indicates that the TI is a measure of the number of ESALs expected in the traffic lane over the pavement design life of the facility. The TI does not vary linearly with the ESAL values, but rather according to the exponential formula below and the values presented below.

$$TI = 9.0 \times ((\ ESAL \times LDF\ ) / 10^6\ )^{0.119}$$

Where:

TI = Traffic Index (determined to the nearest 0.5)
ESAL = Total number of cumulative 18-kip Equivalent Single Axle Loads
LDF = Lane Distribution Factor (Table 613.3B of the *Highway Design Manual*)
LDF =1

An increase in the TI as a result of a new project or regional growth creates a corresponding decrease in the expected life of the existing pavement. This is due to a pavement being designed to a particular thickness based on the TI and R values. A higher TI will result in a thicker pavement. If the pavement is not being changed, the result is a shorter lifespan. The actual decrease in the life of the pavement for a given increase in the TI is dependent upon variable factors such as the existing asphalt concrete thickness, the existing aggregate base thickness, and the

strength of the subgrade soils (R-Value). The determination of these factors is beyond the scope of this traffic impact study. Therefore, the actual decrease in pavement life is not identified.

TABLE 31
CONVERSION OF EQUIVALENT SINGLE AXLE LOADS (ESAL)
TO TRAFFIC INDEX (TI)

Equivalent Single Axle Loads (ESAL)	Traffic Index (TI)	Equivalent Single Axle Loads (ESAL)	Traffic Index (TI)
4,710		6,600,000	
	5.0		11.5
10,900		9,490,000	
	5.5		12.0
23,500		13,500,000	
	6.0		12.5
47,300		18,900,000	
	6.5		13.0
89,800		26,100,000	
	7.0		13.5
164,000		35,600,000	
	7.5		14.0
288,000		48,100,000	
	8.0		14.5
487,000		64,300,000	
	8.5		15.0
798,000		84,700,000	
	9.0		15.5
1,270,000		112,000,000	
	9.5		16.0
1,980,000		144,000,000	
	10.0		16.5
3,020,000		186,000,000	
	10.5		17.0
4,500,000		238,000,000	
	11.0		17.5
6,600,000		303,000,000	

Source: Caltrans Highway Design Manual (California Department of Transportation, 2018)
Notes: According to Table 613.3C of the Caltrans Highway Design manual, "the determination of the TI closer than 0.5 is not justified. No interpolation should be made."
For ESAL's less than 5,000 or greater than 300,000,000, use the TI equation to calculate the design TI

VIII.3. Data Collection

Vehicle classification counts were conducted along Brunswick Road, E. Bennett Road and Whispering Pines Lane during the week of September 23, 2019 while school was in session to determine the existing daily truck volumes. The classification count provided a breakdown, by direction and axle, of the types of trucks along each of the roadways and is provided in Appendix 6. For this report, the impact of the Idaho-Maryland Mine project on pavement condition was analyzed for the following roadways, which includes the Centennial Industrial site haul route for five of the 20 years and the SR 49 haul route for 15 of the 20 years:

- Brunswick Rd between the Project Site Access and E. Bennett Rd – Greenhorn Rd,
- Brunswick Rd between E. Bennett Rd – Greenhorn Rd and Whispering Pines Ln,
- Brunswick Rd between Whispering Pines Ln and SR 49/20,
- E. Bennett Rd between Project Site Access and Brunswick Rd,
- Whispering Pines Ln between Brunswick Rd and Crown Point Circle, and
- Whispering Pines Ln between Crown Point Circle and Centennial Industrial Site.

Table 32 presents a breakdown of the existing average daily traffic conditions along the roadway segments including the vehicle classification in each direction along the roadway, and the truck type, by axle.

TABLE 32
AVERAGE DAILY TRAFFIC / TRUCK CLASSIFICATION

Location	Daily Traffic	2-Axle Volume	3-Axle Volume	4-Axle Volume	5+ Axle Volume
Brunswick Road					
102 north of Whispering Pines Lane					
NB	6,185	313	0	28	4
SB	6,109	297	0	24	3
105 Whispering Pines Lane to E. Bennett Rd					
NB	7,752	703	50	31	31
SB	7,614	534	50	26	14
107 E. Bennett Rd to Project Driveway					
NB	4,680	319	13	12	7
SB	4,752	170	13	7	14
E. Bennett Rd					
106 Millsite Rd to Brunswick Rd					
EB	721	50	4	1	2
WB	763	57	4	1	0
Whispering Pines Lane					
104 Brunswick Rd to Crown Point Cir					
EB	1,339	84	12	3	5
WB	1,136	100	12	3	2
103 Crown Point Cir to Centennial Site					
EB	1,608	61	11	2	2
WB	1,744	51	11	4	4

The NCTC travel demand model traffic volume forecasts were used for this report. TI values were calculated for conditions without the proposed project and for conditions with the proposed project with both haul routes. As noted above, an increase in the TI as a result of a new project creates a corresponding decrease in the expected life of the existing pavement. Therefore, if the TI value for conditions with the proposed project is higher than the TI value without the project, this would indicate a project-related decrease in the expected life of the pavement and is considered an adverse impact.

A summary of the pavement condition analysis is presented in Table 33. For each roadway segment analyzed, Table 33 presents TI values for conditions without the Idaho-Maryland Mine project and TI values for conditions with the proposed project under both hauling scenarios. As noted above, the proposed project is considered to have an adverse impact if it would result in an increase in the TI value.

TABLE 33
ROADWAY SEGMENT TRAFFIC INDEX (TI) SUMMARY

Roadway Segment	Direction	20 Year Without Project	20 Year With Project TI (To Centennial Site – Scenario #1)	20 Year With Project TI (To SR 49 – Scenario #2)
Brunswick Road between the Project Site Access and E. Bennett Road – Greenhorn Road	Northbound	8.5	8.5	8.5
	Southbound	8.5	8.5	8.5
Brunswick Road between E. Bennett Road – Greenhorn Road and Whispering Pines Lane	Northbound	9.5	**10.0**	**10.0**
	Southbound	9.5	9.5	9.5
Brunswick Road between Whispering Pines Lane and SR 49/20	Northbound	8.5	8.5	**9.0**
	Southbound	8.5	8.5	8.5
E. Bennett Road between Project Site Access and Brunswick Road	Eastbound	7.0	**8.0**	**8.0**
	Westbound	7.0	7.0	7.0
Whispering Pines Lane between Brunswick Road and Crown Point Circle	Eastbound	8.0	8.0	Not used
	Westbound	8.0	8.0	Not used
Whispering Pines Lane between Crown Point Circle and Centennial Industrial Site	Eastbound	7.5	7.5	Not used
	Westbound	7.5	7.5	Not used

- Notes: ESAL – Equivalent Single Axle Load; TI= Traffic Index
- Calculation of TI Values presented in Technical Appendix
- **Bold** indicates existing TI exceeded

Implementation of the Idaho-Maryland Mine project would result in an increase in the TI value on the following directional roadway segments:

<u>To Centennial Industrial Site</u>

- Brunswick Road northbound between E. Bennett Rd and Whispering Pines Lane,
- E. Bennett Road between Millsite Road (project driveway) and Brunswick Road,

<u>To SR 49/20</u>

- Brunswick Road northbound between E. Bennett Rd and Whispering Pines Lane,
- Brunswick Road northbound between Whispering Pines Lane and SR 49/20, and
- E. Bennett Road between Millsite Road (project driveway) and Brunswick Road.

Because the design pavement thickness for roadway segments depends on the projected TI, the additional project truck traffic would result in a shorter lifespan of the pavement or increased maintenance.

IX. TRUCK TURN ASSESSMENT

This section presents an assessment of the adequacy of routes to and from the Brunswick Industrial site on Brunswick Road. The purpose of this analysis is to determine whether key intersections along each route, as currently configured, can accommodate haul trucks and to identify the approximate level of roadway widening improvements that would likely be necessary to allow haul truck movements. The haul truck to be used is a single unit 4-axle Superior Super Tag SST100 truck.

Study Area. Haul truck traffic to and from the Brunswick Industrial site consists of inbound and outbound routes to both the Centennial Industrial site and to the SR 49/20 / Brunswick Road interchange. Five (5) intersections were analyzed:

Brunswick Industrial Site Driveway. This entrance will be used for haul trucks entering the Brunswick Industrial site from the north. This will include right turning traffic into the site.

Millsite Road / E. Bennett Road Exit. This location will be used only for haul trucks departing the Brunswick Industrial site and heading to either the Centennial Industrial Use site or SR 49/20. This will include right turning traffic departing the site.

Brunswick Road / E. Bennett Road – Greenhorn Road. This location includes southbound through traffic and eastbound to northbound left turning traffic. The AutoTURN analysis only considered the turning movement.

Brunswick Road / Whispering Pines Lane. This location includes northbound to westbound traffic heading to the Centennial Industrial site and eastbound to southbound traffic heading from the Centennial site. Truck traffic will also use this intersection heading to SR 49/20; however, these through movements were not analyzed.

Centennial Industrial Use Site Driveway. This location includes westbound left turn movements into the proposed Centennial Industrial site driveway and northbound right turn movements departing the driveway.

IX.1. Methods of Analysis

AutoTURN. The assessment of truck turning movements was conducted using AutoTURN software prepared by Transoft. This software implements procedures described in the American Association of State and Highway Transportation Officials (AASHTO) document *A Policy on Geometric Design of Highways and Streets*, and the Caltrans *Highway Design Manual*. The software is a CADD based program that simulates turning maneuvers for various vehicles. The program is used to define both vehicle tire tracking and trailer sweep paths in order to test design roadway features to meet minimum design vehicle constraints. A Superior Super Tag SST100 truck vehicle template was created based on information obtained for this vehicle.

The spatial database used in the analysis of all truck turning movements was based on aerial photography acquired from Google Earth, with imagery dated May 17, 2018. At each location the aerial photograph was imported into a CADD file. AutoTURN was then superimposed over each aerial photograph to simulate the projected turning paths for a STAA vehicle. The resulting paths were then reviewed to determine the ability of vehicles to complete the required movements within the identified constraints:

- Drive off of the edge of the pavement or
- Encroach into the opposing lane.

These AutoTURN paths were then used to develop the limits of new pavement and shoulder, if needed, for each turning movement. Subsequent analysis based on new survey information would be needed to finalize design recommendations.

IX.2. Results

Figures 14 through 18 present haul truck turning movements at the five locations studied.

Brunswick Industrial Site Driveway (Figure 14)

Figure 14 presents the truck turning movement for inbound haul trucks. Trucks will approach the project driveway from the north, from either SR 49/20 or the Centennial Industrial Site. The AutoTURN path shows that the truck will be able to enter the wide driveway unimpeded, while allowing any outbound vehicles to queue adjacent to the inbound movements.

E. Bennett Road / Millsite Road Access (Figure 15)

Figure 15 presents the truck turning movement for haul trucks departing the Brunswick site. The AutoTURN assessment considered the existing gravel road as seen in the figure as well as a former road looping around the mine shaft. This road is proposed to be used as it allows departing trucks to approach E. Bennett Road at a 90° angle, maximizing visibility for departing drivers. As shown in the figure the intersection will require new pavement along the Millsite Road approach.

Brunswick Road / E. Bennett Road (Figure 16)

Figure 16 presents the truck turning movement for trucks leaving the Brunswick site and heading north on Brunswick Road to either the Centennial Industrial site or SR 49/20. The AutoTURN assessment illustrates that the design vehicle can complete the left turn without entering the southbound left turn lane. Additionally, the vehicle envelope will remain on the roadway along northbound Brunswick Road.

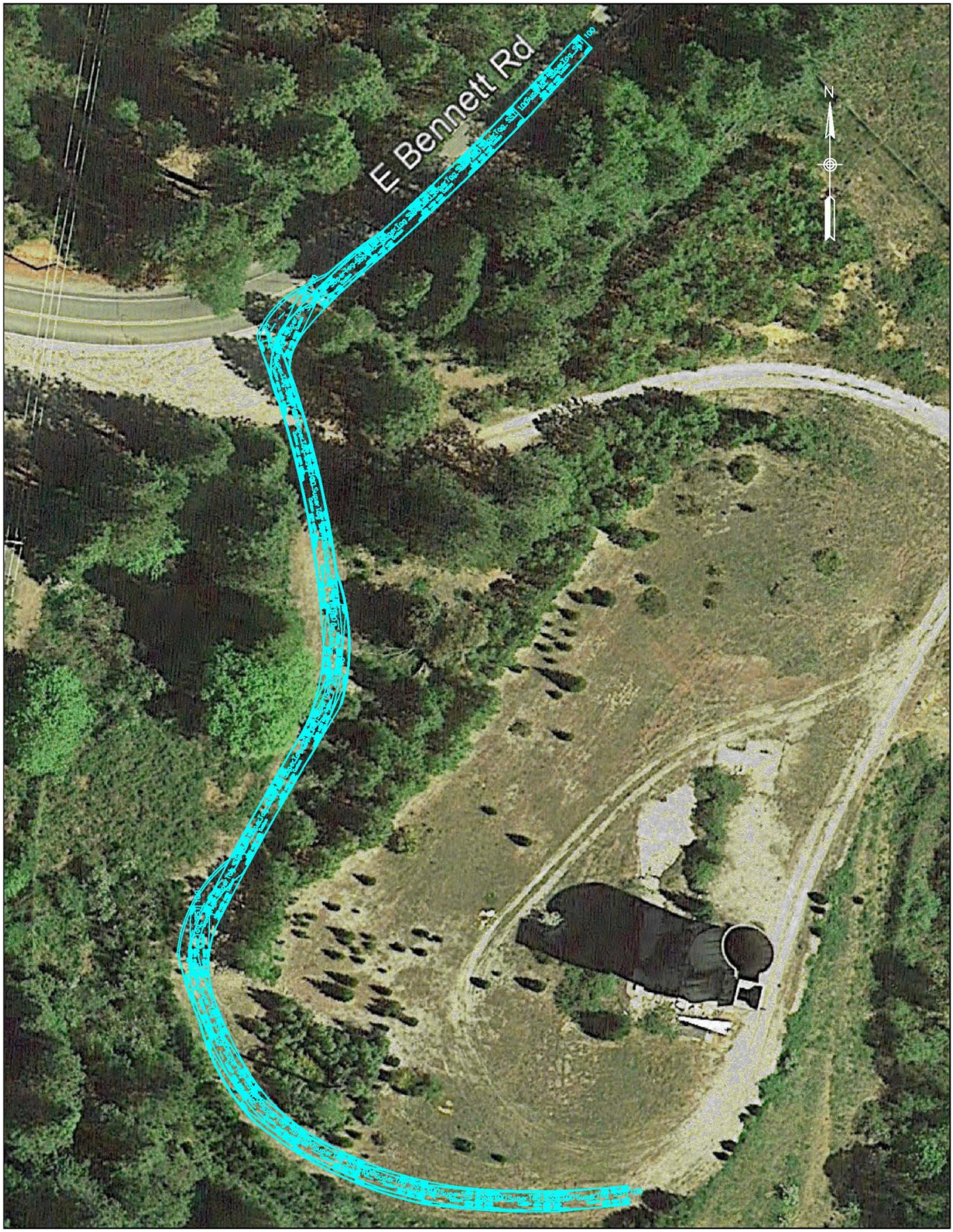
Brunswick Road / Whispering Pines Lane (Figure 17)

Figure 17 presents the truck turning movement for trucks turning to and leaving from the Centennial Industrial site. The AutoTURN assessment shows that northbound to westbound movements can be completed without entering the eastbound left turn lane or the westbound shoulder. AutoTURN indicates that the eastbound to southbound right turn will be completed with trucks able to complete the right turn while staying within the eastbound approach and the outside departure lane along Brunswick Road. The truck wheels should not overtop the curb in the southwest quadrant of the intersection.

Centennial Industrial Site Driveway (Figure 18)

The existing center median east of the project frontage along Whispering Pines Lane ends about 60' east of the property. The east end of the property is the approximate location where the full width roadway section ends, and a two-way roadway begins and continues to Idaho Maryland Road. To provide access to the Centennial site widening of the south side of Whispering Pines Lane is proposed. Figure 18 shows the proposed conceptual layout of the roadway improvements along the project frontage to allow haul trucks to enter and exit the site. This plan was reviewed by City of Grass Valley staff. Whispering Pines Lane would be widened to provide a 12' two-way-left-turn-lane (TWLTL), a 12' travel lane and a 6' bicycle lane. This layout will allow haul trucks to queue in the TWLTL while waiting to enter the site. The AutoTURN assessment shows that inbound and outbound trucks can turn simultaneously without interfering with the opposing vehicle. One alternative considered but dismissed was the installation of a driveway as the extension of Centennial Drive, creating a tee intersection with Whispering Pines Lane. This would require either installation of an unwarranted all-way stop control intersection or installation of a non-standard stop control with stop control only on the Industrial site driveway leg.

AUTOTURN ASSESSMENT
BRUNSWICK ROAD DRIVEWAY

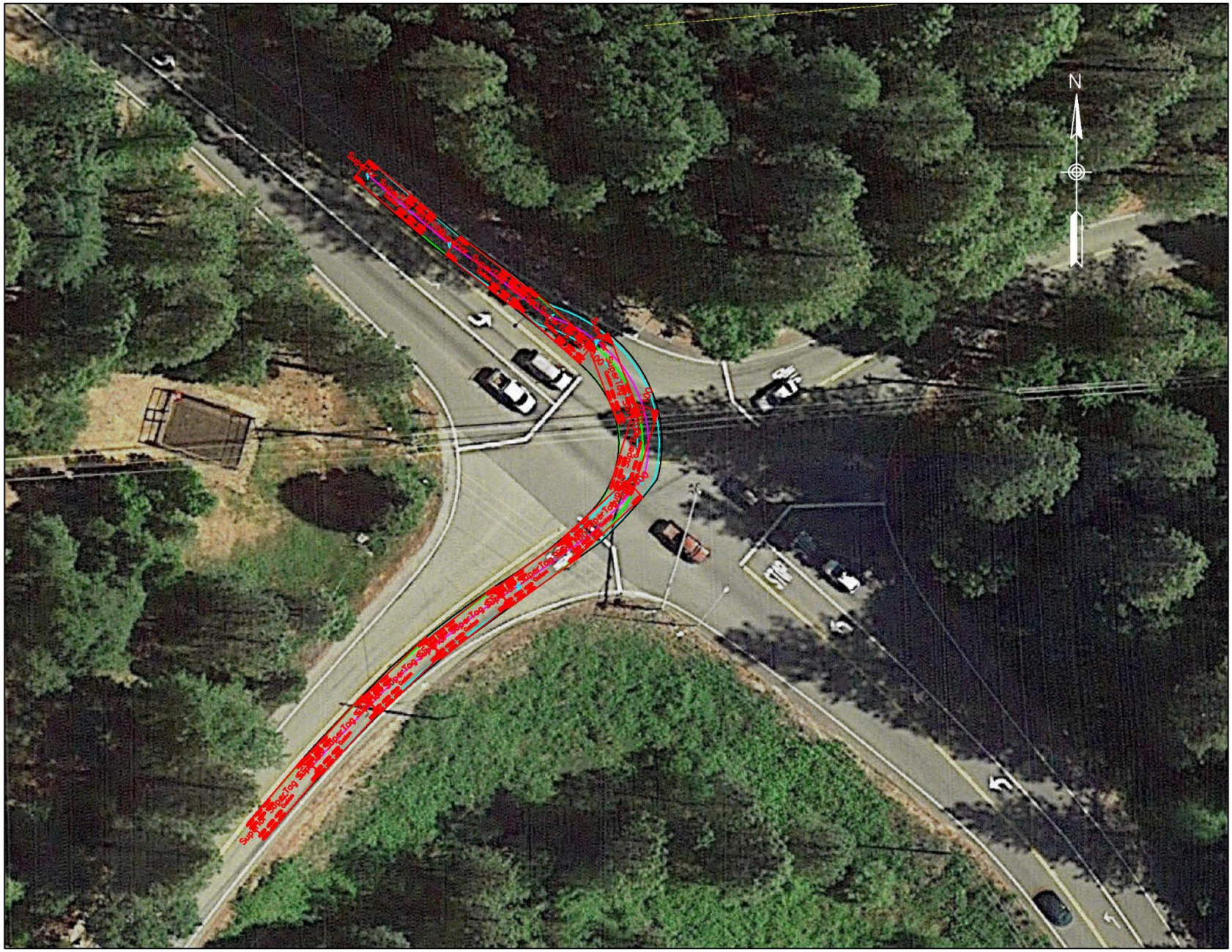


AUTOTURN ASSESSMENT
MILLSITE ROAD AT E BENNETT ROAD

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 15



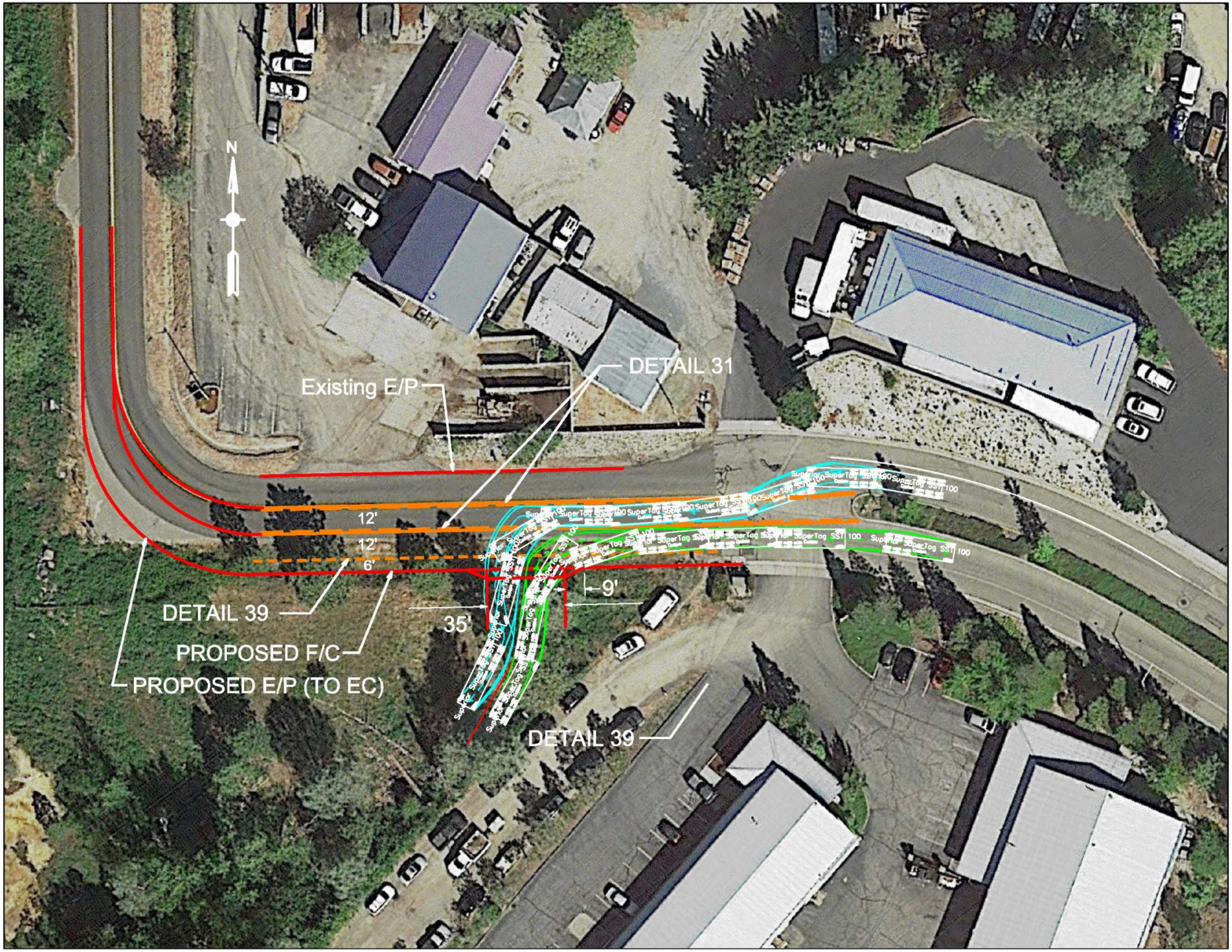
AUTOTURN ASSESSMENT
BRUNSWICK ROAD AT E BENNETT ROAD

KD Anderson & Associates, Inc.
Transportation Engineers

5875-01 RA 3/29/2021

figure 16

AUTOTURN ASSESSMENT
BRUNSWICK ROAD AT WHISPERING PINES LANE



AUTOTURN ASSESSMENT
CENTENNIAL SITE DRIVEWAY

X. SIGHT DISTANCE

A sight distance analysis was completed at several locations along the proposed haul routes. These included the Brunswick Road driveway, the Millsite Road driveway, the Centennial Site driveway and the Brunswick Road / Whispering Pines Lane intersection.

Available sight distance was evaluated using the standards documented in the Caltrans *Highway Design Manual* (HDM). Based on the locations of the driveways "**Minimum Stopping Sight** Distance" (MSSD) and "**Corner Sight Distance**" (CSD) was considered. These criteria are documented in Tables 201.1 and 405.1A of the HDM; the HDM notes that the MSSD criterion is used for CSD evaluation at unsignalized urban driveways.

Brunswick Road Driveway. The posted speed limit along Brunswick Road is 50 miles per hour (mph). Considering CSD requirements the corresponding minimum sight distance standard for this speed is 700 feet for left turning vehicles and 775 feet for right running vehicles. Figure 19 illustrates the sight line looking north with a line of sight of 800 feet. Figure 20 provides the sight line looking south with a line of sight of 750 feet. Both directions meet the CSD requirements. Any landscaping material over 2 feet in height inside the sight line should be removed.

Millsite Road. The posted speed limit along E. Bennett Road is 35 mph. Considering CSD requirements the corresponding minimum sight distance standard for this speed is 540 feet. The sight line was reviewed for eastbound traffic as this access will be restricted to right turning movements. Figure 21 presents the sight line looking west of 580 feet. This exceeds the CSD requirement. The entire sight line is along paved roads.

Whispering Pines Lane. The posted speed limit along Brunswick Road is 45 mph. Considering CSD requirements the corresponding minimum sight distance standard for this speed is 695 feet. The sight line was reviewed for southbound traffic as all truck traffic from the Centennial Site will be turning right heading to the Brunswick Site. Figure 22 presents the sight line looking north of 1,000 feet. This exceeds the CSD requirement.

Centennial Site Driveway. The posted speed limit along Whispering Pines Lane and Centennial Drive is 30 mph. However, traffic heading south on Centennial Drive is required to make a 90° turn to the east onto Brunswick Road. Warning signs along Centennial Road note that truck traffic is present on the road and a left turn sign with a suggested speed of 15 mph is present just prior to the 90° turn. The sight line was reviewed for eastbound traffic as haul trucks leaving the site will head east back to the Brunswick Site.

MSSD requirements for vehicles completing the 90° left turn at the suggested 15 mph speed requires a minimum sight distance of 100 feet. Figure 23 illustrates the sight line looking west with a line of sight of 210 feet. This meets the MSSD requirement. The entire sight line is along paved roads.

SIGHT DISTANCE
BRUNSWICK ROAD LOOKING NORTH AT DRIVEWAY
800 FEET

KD Anderson & Associates, Inc.
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5875-01 RA 3/29/2021

figure 19

SIGHT DISTANCE
BRUNSWICK ROAD LOOKING SOUTH AT DRIVEWAY
750 FEET

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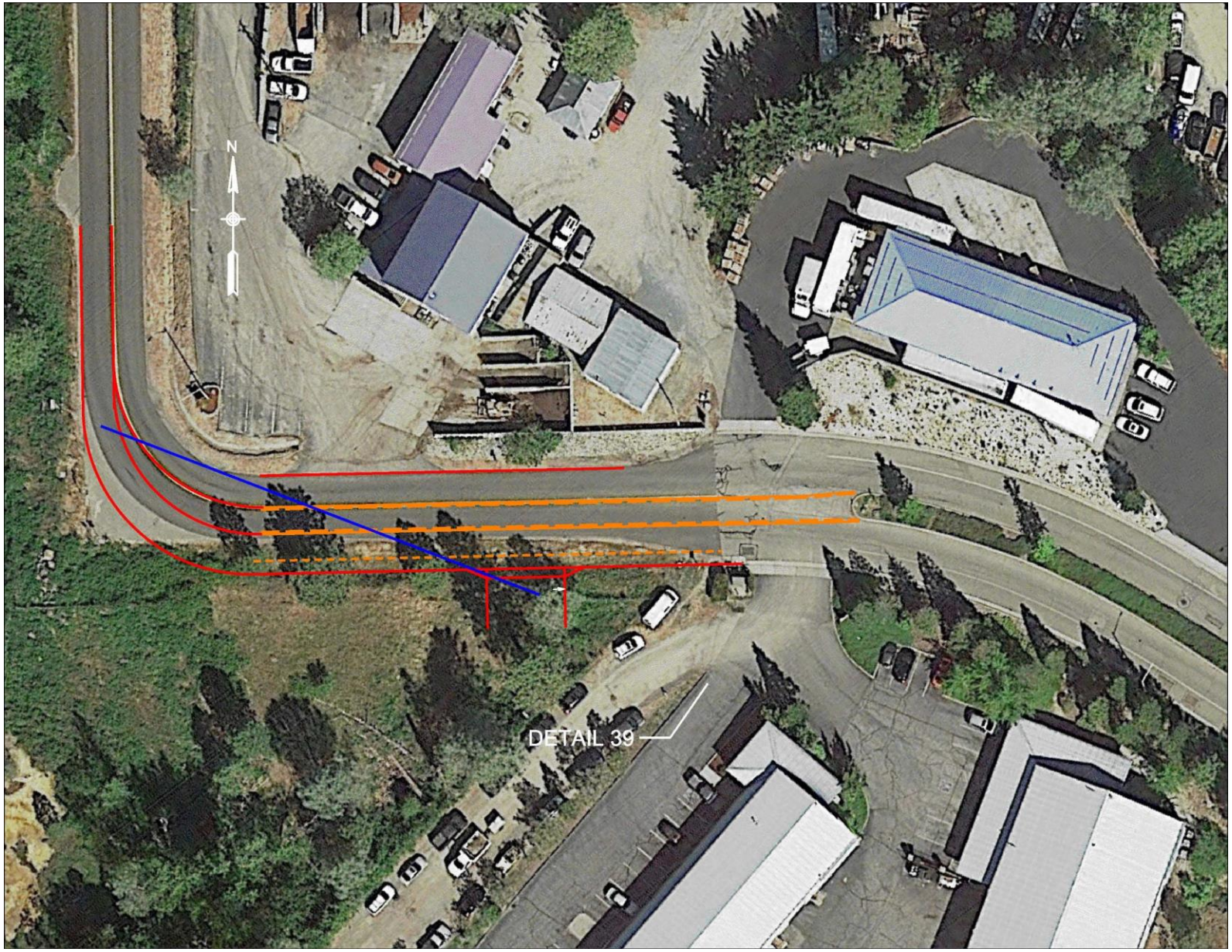
5875-01 RA 3/29/2021

figure 20

SIGHT DISTANCE
MILLSITE ROAD LOOKING WEST
580 FEET

SIGHT DISTANCE
WHISPERING PINES LANE LOOKING NORTH
1000 FEET



SIGHT DISTANCE
CENTENNIAL SITE DRIVEWAY LOOKING WEST
210 FEET

XI. ACCELERATION ON GRADE

The location of the Brunswick site relative to hauling engineered fill to either the Centennial Industrial site or SR 49/20 requires loaded trucks to travel northbound uphill on Brunswick Road from E. Bennett Road about ¼ mile north until it reaches the crest just west of Loma Rica Drive. Brunswick Road has a posted speed limit of 50 mph and is used by truck traffic between SR 174 and SR 49-20. Trucks currently account for about 6% of all traffic between SR 49 and SR 174, with the truck traffic increasing to about 9% between Whispering Pines Lane and E. Bennett Road. Trucks also account for about 8% of traffic along Whispering Pines Lane.

Heading north along Brunswick Road, the grade departing the E. Bennett Road intersection is about 1% for ~800 feet after which the grade increases to approximately 8% for ~600 feet. From the crest to Whispering Pines Lane the grade declines at approximately 5%. Trucks returning from the Centennial site or SR 49/20 will travel unloaded and will be able to accelerate more quickly, especially when entering southbound Brunswick Road from Whispering Pines Lane.

Section 3.4 of AASHTO's Policy of Geometric Design of Highways and Street (i.e., the Green Book) was reviewed to estimate the speeds of trucks on these hills. As trucks depart the E. Bennett Road intersection, the northbound grade is flat and allows trucks to accelerate smoothly. Figure 3-16 of the Green Book suggests that a fully laden "typical truck" can reach about 42 mph prior to arriving at the 8% grade west of Loma Rica Drive. Trucks will then decelerate to about 35 mph as they travel up the grade.

Southbound trucks heading towards the Brunswick site will either be traveling at a higher rate of speed (i.e. 45 mph) as they travel south through the intersection or will be accelerating from a stopped condition as they turn right from Whispering Pines Lane. As noted in the *Sight Distance* section vehicles turning right have 1000 feet of sight distance looking north. While these trucks are accelerating from a stopped condition, they should be able to accelerate faster and to a higher speed as they will be unloaded; the AASHTO figures account for gross vehicle weight. Two southbound lanes are present along Brunswick Road north of Whispering Pines Lane. The outside lane continues for about 325 feet before ending and merging into the inside lane. The uphill 5%± grade continues past Loma Rica Drive for about 1,500 feet before reaching the crest. Under a fully laden condition trucks should be able to reach the merge point with a speed of about 26 mph and reach a speed of about 33 mph by the time they reach the crest. Project trucks will reach higher speeds because they are empty, and the available sight distance will allow drivers to enter Brunswick Road when road conditions permit.

XII. VEHICLE LEVEL OF SERVICE FINDINGS AND RECOMMENDATIONS

The preceding analysis has identified the effect of the project on the local roadway network. Recommendations are identified for facilities that have deficiencies in the roadway network without and with the project.

XII.1. Existing Conditions - Recommendations

Intersections

Three intersections, in the 3:30-4:30 PM period as shown in Table 4B, currently operate below the acceptable LOS D threshold, at LOS E or F. These include Brunswick Road at Idaho Maryland Road, SR 174 at Brunswick Road, and Idaho Maryland Road at Centennial Drive. Installation of traffic signals would result in acceptable levels of service. Brunswick Road at Idaho Maryland Road will operate at LOS C and Idaho Maryland Road at Centennial Drive will operate at LOS B after installation of traffic signals.

The City of Grass Valley has Transportation Impact Fee Projects, outlined in its 2016 Nexus Study update (GVTIF) which includes a plan to install traffic signals at the Brunswick Road at Idaho Maryland Road and Idaho Maryland Road at Centennial Drive intersections.

SR 174 at Brunswick Road was previously identified to be signalized in the NCTC Regional Transportation Program (RTMF); however, the most recent study, the NCTC 2016 Nexus Study, removed the project from the program as this study showed acceptable intersection levels of service. The Caltrans SR 174 TCR continues to identify this intersection as a planned, but unfunded improvement which could include either a traffic signal or roundabout.

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."

Roadway Segments

One roadway segment currently operates below the acceptable LOS threshold, at LOS E during the existing peak hour as shown in Table 6. This is the segment of SR 174 between Brunswick Road and Empire Street which is within the rural region of the County. Caltrans has one project programmed in their SR 174 Transportation Concept Report (TCR) in the segment from the Placer County line to the Grass Valley city limit. The project includes widening shoulders and curve improvements from near Bar Ela Ranch Road to You Bet Road. There are five conceptual projects also identified. These include: 1) construction of a left turn lane at Bartlett Drive including Class III bicycle and pedestrian facilities, 2) construction of a Class III bike facility between Rattlesnake Road and the Grass Valley city limit, 3) construction of a Class III bike facility between the Placer

County line (PM 0.00) and post mile 2.74, 4) construction of one turnout in each of the northbound and southbound directions between the Placer County line and Brunswick Road, and 5) construction of a Class III bicycle facility between You Bet Road and Brunswick Road.

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."

XII.2. Existing Plus Approved Projects Conditions - Recommendations

Intersections

Three intersections, in the 3:30-4:30 PM period as shown in Table 7B, will operate below acceptable the LOS D threshold, at LOS E or F. These include Brunswick Road at Idaho Maryland Road, SR 174 at Brunswick Road and Idaho Maryland Road at Centennial Drive. Installation of traffic signals would result in acceptable levels of service. Brunswick Road at Idaho Maryland Road will operate at LOS C and Idaho Maryland Road at Centennial Drive will operate at LOS B after installation of traffic signals.

The City of Grass Valley has Transportation Impact Fee Projects, outlined in its 2016 Nexus Study update, (GVTIF) which includes a plan to install traffic signals at the Brunswick Road at Idaho Maryland Road and Idaho Maryland Road at Centennial Drive intersections.

SR 174 at Brunswick Road was previously identified to be signalized in the NCTC Regional Transportation Program (RTMF); however, the most recent study, the NCTC 2016 Nexus Study, removed the project from the program as this study showed acceptable intersection levels of service. The Caltrans SR 174 TCR continues to identify this intersection as a planned, but unfunded improvement which could include either a traffic signal or roundabout.

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."

Roadway Segments

One roadway segment will operate below the acceptable LOS threshold, at LOS E in the Existing Plus Approved Projects peak hour as shown in Table 9. This is the segment of SR 174 between Brunswick Road and Empire Street which is within the rural region of the County. Caltrans has one project programmed in their SR 174 Transportation Concept Report (TCR) in the segment from the Placer County line to the Grass Valley city limit. The project includes widening shoulders

and curve improvements from near Bar Ela Ranch Road to You Bet Road. There are five conceptual projects also identified. These include: 1) construction of a left turn lane at Bartlett Drive including Class III bicycle and pedestrian facilities, 2) construction of a Class III bike facility between Rattlesnake Road and the Grass Valley city limit, 3) construction of a Class III bike facility between the Placer County line (PM 0.00) and post mile 2.74, 4) construction of one turnout in each of the northbound and southbound directions between the Placer County line and Brunswick Road, and 5) construction of a Class III bicycle facility between You Bet Road and Brunswick Road.

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."

XII.3. Existing Plus Approved Projects Plus Project Conditions (Scenario #1 – Centennial Site)

As identified in the project description the project intends to operate under the following work periods:

- 7:00 a.m. – mining shift change and inbound administrative personnel begin day
- 3:30 p.m. – administrative personnel day ends
- 7:00 p.m. – mining shift change

Under the proposed work periods there is negligible traffic to or from the site during the a.m. and p.m. peak hours. The majority of project traffic occurs in the periods surrounding mining shift changes and the end of the administrative personnel workday as identified above; the end of the day for administrative personnel does occur during some peak periods, and this was reflected in the level of service analyses during the 3:30-4:30 p.m. analysis period. Recommendations, therefore, are based on the project traffic hours.

Intersections

During the 3:30-4:30 PM period, as shown in Table 14B, three intersections will operate below the acceptable LOS D threshold, at LOS E or F. These include Brunswick Road at Idaho Maryland Road, SR 174 at Brunswick Road and Idaho Maryland Road at Centennial Drive, all of which already operate below the acceptable LOS D threshold under Existing and EPAP scenarios.

12) Brunswick Road at Idaho Maryland Road - Signalization will improve the intersection to LOS D. This intersection is identified to be signalized in the City of Grass Valley GVTIF. The project is expected to add 35 additional vehicles through the intersection during the 3:30-4:30 PM time period. As the signalization of this intersection is included in the GVTIF, payment of the GVTIF will mitigate project impacts to this intersection.

15) SR 174 at Brunswick Road - Signalization or a roundabout would improve the intersection to acceptable LOS conditions. The project is expected to add 10 additional vehicles through the intersection during the 3:30 to 4:30 PM time period. NCTC removed this intersection from their RTMF program in their 2016 Nexus Study while Caltrans has the intersection identified as a planned, but unfunded improvement in their SR 174 TCR. Installation of a traffic signal would improve the intersection operation to LOS B with an overall delay of 13.3 seconds per vehicle. The fair share payment will be implemented through a mitigation measure that requires the applicant to enter into a traffic mitigation agreement with Nevada County. Based on the Caltrans methodology to assess fair share, the fair share percentage is 14.9%. Based on an estimated cost of $450,000 this would equal $67,050.

19) Idaho Maryland Road at Centennial Drive - Signalization will improve the intersection to LOS D. This intersection is identified to be signalized in the City of Grass Valley GVTIF. The project is expected to add 18 additional vehicles through the intersection during the 3:30 to 4:30 PM time period. As the signalization of this intersection is included in the GVTIF, payment of the GVTIF will mitigate project impacts to this intersection.

Roadway Segments

One roadway segment will continue to operate below the acceptable LOS threshold, at LOS E as shown in Table 16. This is the segment of SR 174 between Brunswick Road and Empire Street which is within the rural region of the County. Caltrans has not identified a widening project to improve roadway operational characteristics in this segment. This segment will continue to operate at LOS E during the peak hour. The project has minimal effect on projected conditions with an increase in the percent time following (PTSF) from 76.9% (Table 9) to 78.2% (Table 16) in the westbound direction; the average travel speed (ATS) will decrease by 0.1 mph, from 29.3 mph to 29.2 mph. The PTSF in the eastbound direction will remain unchanged at 59.8% and the ATS will decrease by 0.1 mph, from 30.3 mph to 30.2 mph. Under County Policy LU-4.16, relative to the State highway system, 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.

Acceleration on Grade

A W51 “Slow Trucks” sign should be installed northbound along Brunswick Road about 500 feet north of the E. Bennett Road intersection. Currently, about 9% of the daily traffic is heavy trucks. The posted speed departing the intersection is 50 mph and a horizontal curve is present about 700 feet to the north. Installation of a “Slow Trucks” sign will provide notification to motorists that slower moving vehicles may be on the roadway prior to reaching the uphill grade approaching Loma Rica Drive.

Pavement

Millsite Road is currently unimproved. As part of the project, the E. Bennett Rd / Millsite Road intersection should be paved to accommodate the projected outbound truck traffic. The project should pay for this improvement.

XII.4. Existing Plus Approved Projects Plus Project Conditions (Scenario #2 – To SR 49)

As identified in the project description the project intends to operate under the following work periods:

- 7:00 a.m. – mining shift change and inbound administrative personnel begin day
- 3:30 p.m. – administrative personnel day ends
- 7:00 p.m. – mining shift change

Under the proposed work periods there is negligible traffic to or from the site during the a.m. and p.m. peak hours. The majority of project traffic occurs in the periods surrounding mining shift changes and the end of the administrative personnel workday as identified above; the end of the day for administrative personnel does occur during some peak periods, and this was reflected in the level of service analyses during the 3:30-4:30 p.m. analysis period. Recommendations, therefore, are based on the project traffic hours.

Intersections

During the 3:30-4:30 PM period, as shown in Table 17B, three intersections will operate below the acceptable LOS D threshold, at LOS E or F. These include Brunswick Road at Idaho Maryland Road, SR 174 at Brunswick Road and Idaho Maryland Road at Centennial Drive, all of which already operate below the acceptable LOS D threshold under Existing and EPAP scenarios.

12) Brunswick Road at Idaho Maryland Road - Signalization will improve the intersection to LOS D. This intersection is identified to be signalized in the City of Grass Valley GVTIF. The project is expected to add 47 additional vehicles through the intersection during the 3:30-4:30 PM time period. As the signalization of this intersection is included in the GVTIF, payment of the GVTIF will mitigate project impacts to this intersection.

15) SR 174 at Brunswick Road - Signalization or a roundabout would improve the intersection to acceptable LOS conditions. The project is expected to add 10 additional vehicles through the intersection during the 3:30 to 4:30 PM time period. NCTC removed this intersection from their RTMF program in their 2016 Nexus Study while Caltrans has the intersection identified as a planned, but unfunded improvement in their SR 174 TCR. Installation of a traffic signal would improve the intersection operation to LOS B with an overall delay of 13.3 seconds per vehicle. The fair share payment will be implemented through a mitigation measure that requires the applicant to enter into a traffic mitigation agreement with Nevada

County. Based on the Caltrans methodology to assess fair share, the fair share percentage is 14.9%. Based on an estimated cost of $450,000 this would equal $67,050.

19) Idaho Maryland Road at Centennial Drive - Signalization will improve the intersection to LOS D. This intersection is identified to be signalized in the City of Grass Valley GVTIF. The project is expected to add 15 additional vehicles through the intersection during the 3:30-4:30 PM time period. As the signalization of this intersection is included in the GVTIF, payment of the GVTIF will mitigate project impacts to this intersection.

Roadway Segments

One roadway segment will continue to operate below the acceptable LOS threshold, at LOS E as shown in Table 19. This is the segment of SR 174 between Brunswick Road and Empire Street which is within the rural region of the County. Caltrans has not identified a widening project to improve roadway operational characteristics in this segment. This segment will continue to operate at LOS E during the peak hour. The project has minimal effect on projected EPAP conditions with modelling showing an increase in the percent time following (PTSF) from 76.9% (Table 9) to 78.2% (Table 19) in the west bound direction; the average travel speed (ATS) will decrease by 0.1 mph. The PTSF in the eastbound direction will remain unchanged at 59.8% and the ATS will decrease by 0.1 mph. Under County Policy LU-4.16, relative to the State highway system, 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.

Pavement

Millsite Road is currently unimproved. As part of the project, the E. Bennett Rd / Millsite Road intersection should be paved to accommodate the projected outbound truck traffic. The project should pay for this improvement.

XII.5. Cumulative (2035) Conditions No Project – Recommendations

Intersections

Two intersections, Sutton Way at Dorsey Drive and SR 174 at Brunswick Road, and shown in Table 20B, will operate below the acceptable the LOS D threshold, at LOS E or F. Both intersections will meet the peak hour signal warrant.

15) SR 174 at Brunswick Road was previously identified to be signalized in the NCTC Regional Transportation Program (RTMF); however, the most recent study, the NCTC 2016 Nexus Study, removed the project from the program as this study showed acceptable intersection levels of service. The Caltrans SR 174 TCR continues to identify this intersection as a planned, but unfunded improvement which could include either a traffic signal or roundabout. Under County Policy LU-4.16, relative to the State highway system, 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.

21) Sutton Way at Dorsey Drive - As part of the FEIR for the Dorsey Marketplace project, the Sutton Way / Dorsey Drive intersection will be realigned to create two three-legged intersections. Construction of this project is slated to begin in Spring 2021. The City has noted that signalization is not anticipated for this intersection and that stop controls are to be determined *(e-mail Dec 12, 2019)*.

Roadway Segments

One roadway segment, as shown in Table 22, will continue to operate below the acceptable LOS threshold, at LOS E. This is the segment of SR 174 between Brunswick Road and Empire Street which is within the rural region of the County. There are no funded projects identified in the NCTC RTMF or Caltrans SR 174 TCR to improve motor vehicle operations of this segment. Under County Policy LU-4.16, relative to the State highway system, 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.

XII.6. Cumulative (2035) Plus Project Conditions (Scenario #1 – Centennial Site)

As identified in the project description the project intends to operate under the following work periods:

- 7:00 a.m. – mining shift change and inbound administrative personnel begin day
- 3:30 p.m. – administrative personnel day ends
- 7:00 p.m. – mining shift change

Under the proposed work periods there is negligible traffic to or from the site during the a.m. and p.m. peak hours. The majority of project traffic occurs in the periods surrounding mining shift changes and the end of the administrative personnel workday as identified above; the end of the day for administrative personnel does occur during some peak periods, and this was reflected in the level of service analyses during the 3:30-4:30 PM analysis period. Recommendations, therefore, are based on the project traffic hours.

Intersections

Two intersections shown in Table 23B, Sutton Way at Dorsey Drive and SR 174 at Brunswick Road, will operate below the acceptable LOS D threshold, at LOS E or F. Both intersections will meet the peak hour signal warrant.

15) SR 174 at Brunswick Road - Signalization or a roundabout would improve the intersection to acceptable LOS conditions. The project would add 10 additional trips to the intersection

during the 3:30 to 4:30 PM time period. NCTC removed this intersection from their CIP program in their 2016 Nexus Study while Caltrans has the intersection identified as a planned, but unfunded improvement in their SR 174 TCR. The fair share percentage and amount was previously identified. The fair share payment will be implemented through a mitigation measure that requires the applicant to enter into a traffic mitigation agreement with Nevada County.

21) Sutton Way at Dorsey Drive – As part of the FEIR for the Dorsey Marketplace project, the Sutton Way / Dorsey Drive intersection will be realigned to create two three-legged intersections. Construction of this project is slated to begin in Spring 2021. The City has noted that signalization is not anticipated for this intersection and that stop controls are to be determined *(e-mail Dec 12, 2019)*. Based on the Caltrans methodology to assess fair share, the fair share percentage for this intersection is 0.2%. While the intersection controls are still to be determined the fair share contribution from Rise would be negligible.

Queues

11) Brunswick Road at Sutton Way – Queues in the northbound left turn lanes will be greater than 25 feet beyond Cumulative No Project conditions in the 3:30 – 4:30 PM scenario. Re-timing of the intersection will maintain LOS C conditions (28.2 seconds per vehicle) with queues declining for this movement. The queues are shown to decrease to up to 386 feet, which is 49 feet less than Cumulative conditions. Based on the Caltrans methodology to assess fair share percentage, the fair share is 4.0%. Based on an estimated cost of $5,000 to retime the intersection, this would equal $200.

Roadway Segments

One roadway segment, as shown in Table 25, will continue to operate below the acceptable LOS threshold, at LOS E. This is the segment of SR 174 between Brunswick Road and Empire Street which is within the rural region of the County. There are no funded projects identified in the NCTC CIP or Caltrans SR 174 TCR to improve motor vehicle operations of this segment. This segment will continue to operate at LOS E during the peak hour. The project has minimal effect on projected conditions with an increase in the PTSF from 80.4% to 81.5% in the westbound direction; the average travel speed (ATS) will remain at 28.6 mph. In the eastbound direction the PTSF will increase from 60.2% to 60.8% while the ATS will decrease by 0.1 mph, from 29.8 mph to 29.7 mph. Under County Policy LU-4.16, relative to the State highway system, 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.

XII.7. Cumulative (2035) Plus Project Conditions (Scenario #2 – To SR 49)

As identified in the project description the project intends to operate under the following work periods:

- 7:00 a.m. – mining shift change and inbound administrative personnel begin day
- 3:30 p.m. – administrative personnel day ends
- 7:00 p.m. – mining shift change

Under the proposed work periods there is negligible traffic to or from the site during the a.m. and p.m. peak hours. The majority of project traffic occurs in the periods surrounding mining shift changes and the end of the administrative personnel workday as identified above; the end of the day for administrative personnel does occur during some peak periods, and this was reflected in the level of service analyses during the 3:30-4:30 PM analysis period. Recommendations, therefore, are based on the project traffic hours.

Intersections

Two intersections, shown in Table 26B, Sutton Way at Dorsey Drive and SR 174 at Brunswick Road, will operate below the acceptable LOS D threshold, at LOS E or F. Both intersections will meet the peak hour signal warrant.

15) SR 174 at Brunswick Road - Signalization or a roundabout would improve the intersection to acceptable LOS conditions. The project would add 10 additional trips to the intersection during the 3:30 to 4:30 PM time period. NCTC removed this intersection from their CIP program in their 2016 Nexus Study while Caltrans has the intersection identified as a planned, but unfunded improvement in their SR 174 TCR. The fair share percentage and amount was previously identified. The fair share payment will be implemented through a mitigation measure that requires the applicant to enter into a traffic mitigation agreement with Nevada County.

21) Sutton Way at Dorsey Drive - As part of the FEIR for the Dorsey Marketplace project, the Sutton Way / Dorsey Drive intersection will be realigned to create two three-legged intersections. Construction of this project is slated to begin in Spring 2021. The City has noted that signalization is not anticipated for this intersection and that stop controls are to be determined *(e-mail Dec 12, 2019)*. Based on the Caltrans methodology to assess fair share, the fair share percentage for this intersection is 0.2%. While the intersection controls are still to be determined the fair share contribution from Rise would be negligible.

Queues

11) Brunswick Road at Sutton Way – Queues in the northbound left turn lanes will be greater than 25 feet beyond Cumulative No Project conditions in the 3:30 – 4:30 PM scenario. Re-timing of the intersection will maintain LOS C conditions (29.5 seconds per vehicle) with queues declining for this movement. The queues are shown to decrease to up to 434 feet, which is 1 foot less than Cumulative conditions. Based on the Caltrans methodology to assess fair share percentage, the fair share is 8.5%. Based on an estimated cost of $5,000 to retime the intersection, this would equal $425.

Roadway Segments

One roadway segment, as shown in Table 28, will continue to operate below the acceptable LOS threshold, at LOS E. This is the segment of SR 174 between Brunswick Road and Empire Street which is within the rural region of the County. There are no funded projects identified in the NCTC CIP or Caltrans SR 174 TCR to improve motor vehicle operations of this segment. This segment will continue to operate at LOS E during the peak hour. The project has minimal effect on projected conditions with an increase in the PTSF from 80.4% to 81.5% in the westbound direction; the average travel speed (ATS) will remain at 28.6 mph. In the eastbound direction the PTSF will increase from 60.2% to 60.8% while the ATS will decrease by 0.1 mph, from 29.8 mph to 29.7 mph. Under County Policy LU-4.16, relative to the State highway system, 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.

XIII. SUMMARY OF TRAFFIC IMPROVEMENT RECOMMENDATIONS

Intersections

11) Brunswick Road at Sutton Way - Re-timing of the intersection will maintain LOS C conditions with queues declining for this movement. The queues are shown to decrease to less than Cumulative conditions. Considering this queueing is projected to occur in the future the project should pay their fair share to re-time the intersection. Including both scenarios the maximum fair share amount is $425.

12) Brunswick Road at Idaho Maryland Road - Signalization will improve the intersection to LOS D. This intersection is identified to be signalized in the City of Grass Valley GVTIF and is not identified in the Western Nevada County Regional Transportation Mitigation Fee program. Up to 47 additional vehicles are projected to pass through the intersection during the 3:30-4:30 PM period. Existing traffic through this intersection is estimated at ~1458 vehicles. As the signalization of this intersection is included in the GVTIF, payment of the GVTIF will mitigate project impacts to this intersection.

15) SR 174 at Brunswick Road - Signalization or a roundabout would improve the intersection to acceptable LOS conditions. The project would add 10 additional trips to the intersection during the 3:30 to 4:30 PM time period. Existing traffic through this intersection is estimated at ~1172 vehicles. NCTC removed this intersection from their RTMF program in their 2016 Nexus Study while Caltrans has the intersection identified as a planned, but unfunded improvement in their SR 174 TCR. The project should pay their fair share to install a traffic signal, which will be implemented through a mitigation measure that requires the applicant to enter into a traffic mitigation agreement with Nevada County. The fair share for either scenario is $67,050.

17) E. Bennett Road at Millsite Road - The Millsite Road approach is currently gravel. The roadway approach should be paved at E. Bennett Road. Rise should pay 100% for this improvement.

19) Idaho Maryland Road at Centennial Drive - Signalization will improve the intersection to LOS D. This intersection is identified to be signalized in the City of Grass Valley GVTIF and is not identified in the Western Nevada County Regional Transportation Mitigation Fee program. Up to 18 additional vehicles are projected to pass through the intersection during the PM peak hour. Existing traffic through this intersection is estimated at ~1015 vehicles. As the signalization of this intersection is included in the GVTIF, payment of the GVTIF will mitigate project impacts to this intersection.

21) Sutton Way at Dorsey Drive - As part of the FEIR for the Dorsey Marketplace project, the Sutton Way / Dorsey Drive intersection will be realigned to create two three-legged intersections. Construction of this project is slated to begin in Spring 2021. The City has noted that signalization is not anticipated for this intersection and that stop controls are to be determined. The project is expected to generate 2 additional vehicles in a total of 1936 vehicles

passing through the intersection during the 3:30 – 4:30 PM period. As the signalization of this intersection is included in the GVTIF, payment of the GVTIF will mitigate project impacts to this intersection

Roadway Segments

One roadway segment, SR 174 between Brunswick Road and Empire Street, will continue to operate below the acceptable LOS threshold, at LOS E. This segment is within the rural region of the County. Caltrans has not identified a widening project to improve roadway operational characteristics in this segment. This segment will continue to operate at LOS E during the peak hour. The project has minimal effect on projected conditions in regards to the percent time following (PTSF) and the average travel speed (ATS). Under County Policy LU-4.16, relative to the State highway system, 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.

Sign Recommendations

A W51 "Slow Trucks" sign should be installed northbound along Brunswick Road about 500 feet north of the E. Bennett Road intersection. Currently, about 9% of the daily traffic is heavy trucks. The posted speed departing the intersection is 50 mph and a horizontal curve is present about 700 feet to the north. Installation of a "Slow Trucks" sign will provide notification to motorists that slower moving vehicles may be on the roadway prior to reaching the uphill grade approaching Loma Rica Drive.

Pavement Condition Recommendations

The pavement condition analysis presented in Section VII indicates that pavement in the northbound direction on Brunswick Road from Greenhorn Road to SR 49 and on E. Bennett Road eastbound from the project driveway to Brunswick Road may be impacted by truck traffic generated by the project.

Rise shall enter into a road maintenance agreement with Nevada County and Grass Valley to provide its fair share of funding for maintenance of roadways commensurate with the project's impact to pavement conditions.

Centennial Industrial Site Driveway

To provide access to the Centennial site, widening of the south side of Whispering Pines Lane is proposed. Figure 18 shows the proposed conceptual layout of the roadway improvements along the project frontage to allow haul trucks to enter and exit the site. Whispering Pines Lane would be widened to provide a 12' two-way-left-turn-lane (TWLTL), a 12' travel lane and a 6' bicycle lane. This layout will allow haul trucks to queue in the TWLTL while waiting to enter the site.

Rise should pay 100% of the cost for this improvement to Whispering Pines Lane.

Regional Transportation Mitigation Fee

Western Nevada County Regional Transportation Mitigation Fee (the "RTMF"). The Nevada County Transportation Commission (NCTC), in partnership with Nevada County, Nevada City, and the City of Grass Valley established the RTMF program in 2001. Under this program, development impact fees are collected to help fund construction of the regional system of roads, streets, and highways needed to accommodate growth in western Nevada County. Nevada City and the City of Grass Valley also have adopted their own transportation mitigation fees to fund transportation improvements in each city. All three fee programs were updated in 2008 and again in 2016 to reflect changes in demographic and economic assumptions and associated changes in transportation improvement needs and funding opportunities for these improvements (NCTC 2016).

The purpose of the RTMF is to establish a uniform, cooperative program to mitigate the cumulative indirect regional impacts of future developments on traffic conditions on regional roadways in Nevada County. The fees will help fund improvements needed to maintain the target level of service in the face of the higher traffic volumes brought on by new developments.

The RTMF is based on total thousand square feet of industrial buildings. The Project proposes 126,000 square feet of industrial buildings and should pay the required RTMF. The current fee would be calculated as 126 TSF x 5.33 x $76.91 = $51,651. The actual fee paid will depend on the mitigation fee in place at the time of construction.

Nevada County Local Traffic Mitigation Fee

Nevada County established their current Traffic Impact Mitigation Program in 1997 with the adoption of a Local Traffic Mitigation Fee (LTMF). Under the program development impact fees are collected to help fund construction for local improvements within unincorporated Nevada County. The current fee schedule is effective fiscal year 2020/2021. The LTMF is based on total thousand square feet of industrial buildings. The Project proposes 126,000 square feet of industrial buildings and should pay the required LTMF. The current fee would be calculated as 126 TSF x $428.73 = $54,020. The actual fee paid will depend on the mitigation fee in place at the time of construction.

Grass Valley Transportation Impact Fee (GVTIF) Program

The City of Grass Valley has an established Transportation Impact Fee Program (GVTIF) that collects fees to help fund construction for local improvements within the City of Grass Valley. Although the project is not located in the City of Grass Valley, the project should pay the GVTIF as mitigation for impacts to intersection included in the GVTIF. The GVTIF is based on total thousand square feet of industrial buildings. The Project proposes 126,000 square feet of industrial buildings and should pay the required GVTIF. The current fee would be calculated as 126 TSF x $666.66 = $83,999 and an administration fee of 1% = $839.99. The actual fee paid will depend on the mitigation fee in place at the time of construction.

XIV. REFERENCES

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XV. APPENDICES

KD Anderson & Associates, Inc.
Transportation Engineers

LOS APPENDICES

FOR

IDAHO - MARYLAND MINE PROJECT
TRAFFIC IMPACT ANALYSIS

Nevada County, CA

TABLE OF CONTENTS

I. TURNING MOVEMENTS AND LANE COUNTS

II. CLASS AND VOLUME ADT's

III. LEVEL OF SERVICE CALCULATIONS AND QUEUING

IV. QUEUES – CUMULATIVE SCENARIOS

V. ROADWAY LEVEL OF SERVICE

VI. PEAK HOUR SIGNAL WARRANTS

VII. TRAFFIC INDEX CALCULATIONS

VIII. PROJECT TRIP CALCULATIONS

IX. FAIR SHARE PERCENTAGES & COST

X. FEHR & PEERS VMT ANALYSIS MEMO

TECHNICAL LOS APPENDIX I

FOR

IDAHO-MARYLAND MINE PROJECT
TRAFFIC IMPACT ANALYSIS

Nevada County, CA

TURNING MOVEMENTS AND LANE COUNTS

Prepared For:

Rise Grass Valley Inc.

Prepared By:

KD Anderson & Associates, Inc.
3853 Taylor Road, Suite G
Loomis, CA 95650
(916) 660-1555

April 8, 2021

TURNING MOVEMENTS AND LANE COUNTS

TURNING MOVEMENTS

LANE COUNTS (at interchange locations)

KDA

Prepared by National Data & Surveying Services

Tinloy St & Neal St

Peak Hour Turning Movement Count

ID: 19-07290-001
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

Tinloy St — SOUTHBOUND

AM	60	166	66	0	0	AM
NOON	0	0	0	0	0	NOON
PM	124	221	33	0	0	PM

Neal St — EASTBOUND

AM	NOON	PM	
251	0	279	
0	0	0	0
0	0	0	0
228	0	235	0
10	0	1	0
AM	NOON	PM	

Neal St — WESTBOUND

PM	NOON	AM	
0	0	0	0
155	0	191	0
85	0	104	0
0	0	0	0
268	0	294	
PM	NOON	AM	

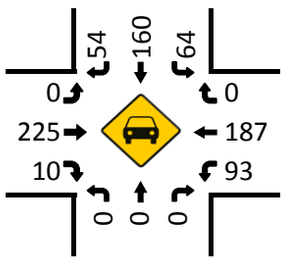
CONTROL: Signalized

TEV	825 AM	0 NOON	854 PM
PHF	0.89		0.96

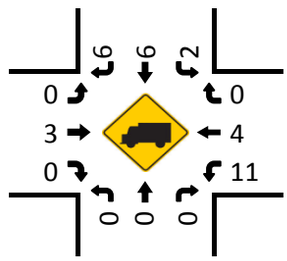
Tinloy St — NORTHBOUND

PM	307	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	280	0	0	0	0	AM

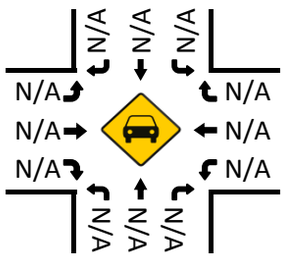
Cars (AM)



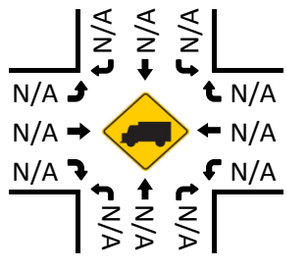
HT (AM)



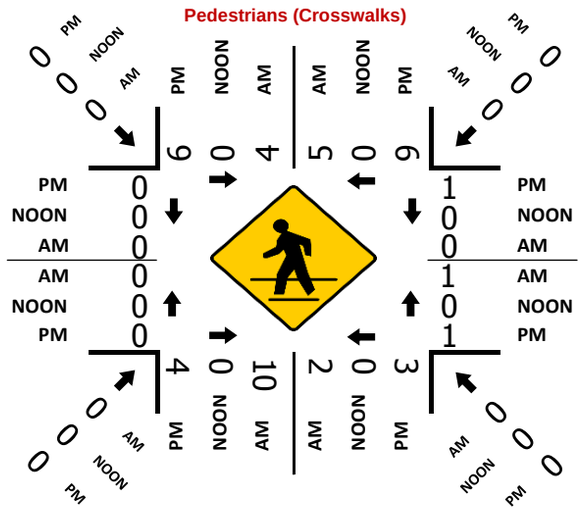
Cars (NOON)



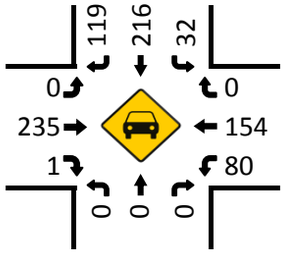
HT (NOON)



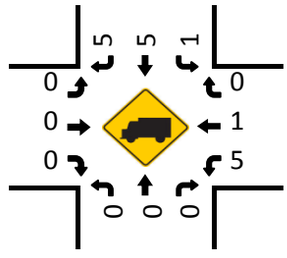
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

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

Project ID: 19-07290-001
Date: 8/28/2019

Total

NS/EW Streets:	Tinloy St				Tinloy St				Neal St				Neal St				
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	2	17	5	0	0	17	0	0	12	9	0	0	62
6:45 AM	0	0	0	0	5	17	6	0	0	17	1	0	19	11	0	0	76
7:00 AM	0	0	0	0	7	15	5	0	0	24	0	0	22	26	0	0	99
7:15 AM	0	0	0	0	4	27	6	0	0	24	1	0	25	12	0	0	99
7:30 AM	0	0	0	0	3	18	11	0	0	41	2	0	27	24	0	0	126
7:45 AM	0	0	0	0	9	58	14	0	0	46	0	0	21	42	0	0	190
8:00 AM	0	0	0	0	19	34	10	0	0	50	6	0	28	35	0	0	182
8:15 AM	0	0	0	0	34	48	12	0	0	65	3	0	23	47	0	0	232
8:30 AM	0	0	0	0	8	35	14	0	0	53	1	0	25	78	0	0	214
8:45 AM	0	0	0	0	5	49	24	0	0	60	0	0	28	31	0	0	197
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	96	318	107	0	0	397	14	0	230	315	0	0	1477
APPROACH %'s :					18.43%	61.04%	20.54%	0.00%	0.00%	96.59%	3.41%	0.00%	42.20%	57.80%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	66	166	60	0	0	228	10	0	104	191	0	0	825
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.485	0.847	0.625	0.000	0.000	0.877	0.417	0.000	0.929	0.612	0.000	0.000	0.889
						0.777				0.875				0.716			

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	0	0	13	46	13	0	0	57	0	0	30	38	0	0	197
3:45 PM	0	0	0	0	18	54	28	0	0	65	0	0	24	22	0	0	211
4:00 PM	0	0	0	0	15	35	36	0	0	56	0	0	24	34	0	0	200
4:15 PM	0	0	0	0	10	47	24	0	0	51	0	0	23	29	0	0	184
4:30 PM	0	0	0	0	5	61	30	0	0	58	0	0	28	26	0	0	208
4:45 PM	0	0	0	0	6	60	24	0	0	55	0	0	19	45	0	0	209
5:00 PM	0	0	0	0	14	57	35	0	0	60	0	0	21	36	0	0	223
5:15 PM	0	0	0	0	8	43	35	0	0	62	1	0	17	48	0	0	214
5:30 PM	0	0	0	0	4	41	32	0	0	49	0	0	17	31	0	0	174
5:45 PM	0	0	0	0	15	37	28	0	0	61	0	0	13	29	0	0	183
6:00 PM	0	0	0	0	7	24	24	0	0	51	0	0	17	31	0	0	154
6:15 PM	0	0	0	0	2	27	12	0	0	50	0	0	15	18	0	0	124
6:30 PM	0	0	0	0	4	33	20	0	0	55	1	0	11	16	0	0	140
6:45 PM	0	0	0	0	10	32	18	0	0	45	0	0	14	22	0	0	141
7:00 PM	0	0	0	0	9	29	27	0	0	57	0	0	7	24	0	0	153
7:15 PM	0	0	0	0	5	24	8	0	0	62	0	0	17	25	0	0	141
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	145	650	394	0	0	894	2	0	297	474	0	0	2856
APPROACH %'s :					12.20%	54.67%	33.14%	0.00%	0.00%	99.78%	0.22%	0.00%	38.52%	61.48%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	33	221	124	0	0	235	1	0	85	155	0	0	854
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.589	0.906	0.886	0.000	0.000	0.948	0.250	0.000	0.759	0.807	0.000	0.000	0.957
						0.892				0.937				0.923			

National Data & Surveying Services

Intersection Turning Movement Count

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

Project ID: 19-07290-001
Date: 8/28/2019

Cars

NS/EW Streets:	Tinloy St				Tinloy St				Neal St				Neal St				
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	2	16	4	0	0	15	0	0	11	9	0	0	57
6:45 AM	0	0	0	0	4	16	4	0	0	17	1	0	13	10	0	0	65
7:00 AM	0	0	0	0	7	11	3	0	0	23	0	0	14	26	0	0	84
7:15 AM	0	0	0	0	4	26	6	0	0	24	1	0	18	11	0	0	90
7:30 AM	0	0	0	0	3	17	9	0	0	39	2	0	22	24	0	0	116
7:45 AM	0	0	0	0	8	55	13	0	0	46	0	0	18	41	0	0	181
8:00 AM	0	0	0	0	18	33	6	0	0	49	6	0	24	35	0	0	171
8:15 AM	0	0	0	0	34	45	12	0	0	64	3	0	19	46	0	0	223
8:30 AM	0	0	0	0	8	35	13	0	0	53	1	0	22	77	0	0	209
8:45 AM	0	0	0	0	4	47	23	0	0	59	0	0	28	29	0	0	190
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	92	301	93	0	0	389	14	0	189	308	0	0	1386
APPROACH %'s :					18.93%	61.93%	19.14%	0.00%	0.00%	96.53%	3.47%	0.00%	38.03%	61.97%	0.00%	0.00%	
PEAK HR :	**08:00 AM - 09:00 AM**																TOTAL
PEAK HR VOL :	0	0	0	0	64	160	54	0	0	225	10	0	93	187	0	0	793
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.471	0.851	0.587	0.000	0.000	0.879	0.417	0.000	0.830	0.607	0.000	0.000	0.889
						0.764				0.877				0.707			

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	11	45	12	0	0	57	0	0	27	37	0	0	189
3:45 PM	0	0	0	0	17	53	28	0	0	65	0	0	23	22	0	0	208
4:00 PM	0	0	0	0	15	34	33	0	0	56	0	0	23	34	0	0	195
4:15 PM	0	0	0	0	9	45	24	0	0	50	0	0	22	28	0	0	178
4:30 PM	0	0	0	0	4	61	28	0	0	58	0	0	27	26	0	0	204
4:45 PM	0	0	0	0	6	58	24	0	0	55	0	0	16	44	0	0	203
5:00 PM	0	0	0	0	14	55	33	0	0	60	0	0	20	36	0	0	218
5:15 PM	0	0	0	0	8	42	34	0	0	62	1	0	17	48	0	0	212
5:30 PM	0	0	0	0	4	41	30	0	0	48	0	0	17	31	0	0	171
5:45 PM	0	0	0	0	15	37	28	0	0	61	0	0	13	29	0	0	183
6:00 PM	0	0	0	0	7	24	21	0	0	51	0	0	17	31	0	0	151
6:15 PM	0	0	0	0	2	26	12	0	0	49	0	0	15	18	0	0	122
6:30 PM	0	0	0	0	4	32	18	0	0	55	1	0	11	16	0	0	137
6:45 PM	0	0	0	0	10	29	18	0	0	45	0	0	14	22	0	0	138
7:00 PM	0	0	0	0	9	28	24	0	0	57	0	0	7	24	0	0	149
7:15 PM	0	0	0	0	5	23	8	0	0	61	0	0	17	25	0	0	139
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	140	633	375	0	0	890	2	0	286	471	0	0	2797
APPROACH %'s :					12.20%	55.14%	32.67%	0.00%	0.00%	99.78%	0.22%	0.00%	37.78%	62.22%	0.00%	0.00%	
PEAK HR :	**04:30 PM - 05:30 PM**																TOTAL
PEAK HR VOL :	0	0	0	0	32	216	119	0	0	235	1	0	80	154	0	0	837
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.571	0.885	0.875	0.000	0.000	0.948	0.250	0.000	0.741	0.802	0.000	0.000	0.960
						0.900				0.937				0.900			

National Data & Surveying Services

Intersection Turning Movement Count

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

Project ID: 19-07290-001
Date: 8/28/2019

HT

NS/EW Streets:	Tinloy St				Tinloy St				Neal St				Neal St				
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	1	1	0	0	2	0	0	1	0	0	0	5
6:45 AM	0	0	0	0	1	1	2	0	0	0	0	0	6	1	0	0	11
7:00 AM	0	0	0	0	0	4	2	0	0	1	0	0	8	0	0	0	15
7:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	7	1	0	0	9
7:30 AM	0	0	0	0	0	1	2	0	0	2	0	0	5	0	0	0	10
7:45 AM	0	0	0	0	1	3	1	0	0	0	0	0	3	1	0	0	9
8:00 AM	0	0	0	0	1	1	4	0	0	1	0	0	4	0	0	0	11
8:15 AM	0	0	0	0	0	3	0	0	0	1	0	0	4	1	0	0	9
8:30 AM	0	0	0	0	0	0	1	0	0	0	0	0	3	1	0	0	5
8:45 AM	0	0	0	0	1	2	1	0	0	1	0	0	0	2	0	0	7
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	4	17	14	0	0	8	0	0	41	7	0	0	91
APPROACH %'s :					11.43%	48.57%	40.00%	0.00%	0.00%	100.00%	0.00%	0.00%	85.42%	14.58%	0.00%	0.00%	
PEAK HR :	**08:00 AM - 09:00 AM**																TOTAL
PEAK HR VOL :	0	0	0	0	2	6	6	0	0	3	0	0	11	4	0	0	32
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.500	0.500	0.375	0.000	0.000	0.750	0.000	0.000	0.688	0.500	0.000	0.000	0.727
							0.583				0.750				0.750		

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	2	1	1	0	0	0	0	0	3	1	0	0	8
3:45 PM	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	3
4:00 PM	0	0	0	0	0	1	3	0	0	0	0	0	1	0	0	0	5
4:15 PM	0	0	0	0	1	2	0	0	0	1	0	0	1	1	0	0	6
4:30 PM	0	0	0	0	1	0	2	0	0	0	0	0	1	0	0	0	4
4:45 PM	0	0	0	0	0	2	0	0	0	0	0	0	3	1	0	0	6
5:00 PM	0	0	0	0	0	2	2	0	0	0	0	0	1	0	0	0	5
5:15 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3
6:15 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2
6:30 PM	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	3
6:45 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
7:00 PM	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	4
7:15 PM	0	0	0	0	0	1	0	0	0	1	0	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 :	0	0	0	0	5	17	19	0	0	4	0	0	11	3	0	0	59
APPROACH %'s :					12.20%	41.46%	46.34%	0.00%	0.00%	100.00%	0.00%	0.00%	78.57%	21.43%	0.00%	0.00%	
PEAK HR :	**04:30 PM - 05:30 PM**																TOTAL
PEAK HR VOL :	0	0	0	0	1	5	5	0	0	0	0	0	5	1	0	0	17
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.250	0.625	0.625	0.000	0.000	0.000	0.000	0.000	0.417	0.250	0.000	0.000	0.708
							0.688								0.375		

National Data & Surveying Services

Intersection Turning Movement Count

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

Project ID: 19-07290-001
Date: 8/28/2019

Bikes

NS/EW Streets:	Tinloy St				Tinloy St				Neal St				Neal St				
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	1	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	3
7:45 AM	0	0	0	0	0	0	0	0	1	0	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	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	2	3	0	0	0	0	0	0	5
APPROACH %'s :									40.00%	60.00%	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	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	1	0	0	0	0	0	0	0	0	1	0	0	2
4:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	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	1	0	0	0	0	1	0	0	2	0	0	0	0	0	0	4
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	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
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
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	0	0	0	0	0	0	0	0
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	2	0	0	3	1	1	0	1	2	0	0	0	2	0	0	12
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	60.00%	20.00%	20.00%	0.00%	33.33%	66.67%	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	1	0	0	2	1	1	0	0	2	0	0	0	0	0	0	7
PEAK HR FACTOR :	0.00	0.250	0.000	0.000	0.500	0.250	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.438
		0.250				1.000				0.250							

National Data & Surveying Services

Intersection Turning Movement Count

Location: Tinloy St & Neal St
City: Grass Valley
Project ID: 19-07290-001
Date: 8/28/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Tinloy St		Tinloy St		Neal St		Neal St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:30 AM	0	2	1	1	0	0	0	0	4
6:45 AM	0	1	0	3	0	0	0	0	4
7:00 AM	1	1	1	0	0	0	0	0	3
7:15 AM	0	1	1	0	0	0	0	0	2
7:30 AM	1	0	0	0	0	0	2	0	3
7:45 AM	0	1	1	1	0	1	0	0	4
8:00 AM	2	1	2	0	0	0	0	0	5
8:15 AM	0	1	2	1	0	0	0	0	4
8:30 AM	2	2	3	1	0	0	0	0	8
8:45 AM	0	1	3	0	1	0	0	0	5
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	6	11	14	7	1	1	2	0	42
APPROACH %'s :	35.29%	64.71%	66.67%	33.33%	50.00%	50.00%	100.00%	0.00%	
PEAK HR :	**08:00 AM - 09:00 AM**								TOTAL
PEAK HR VOL :	4	5	10	2	1	0	0	0	22
PEAK HR FACTOR :	0.500	0.625	0.833	0.500	0.250				0.688
	0.563		0.750		0.250				

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
3:30 PM	3	1	2	1	0	0	0	0	7
3:45 PM	1	1	2	9	0	0	0	0	13
4:00 PM	3	0	5	0	0	0	0	0	8
4:15 PM	1	0	1	0	0	0	0	0	2
4:30 PM	1	1	0	0	0	1	0	0	3
4:45 PM	1	3	0	3	0	0	0	0	7
5:00 PM	3	4	1	0	1	0	0	0	9
5:15 PM	1	1	3	0	0	0	0	0	5
5:30 PM	0	0	0	1	0	0	0	0	1
5:45 PM	0	1	3	0	0	0	0	0	4
6:00 PM	0	1	0	0	0	0	0	0	1
6:15 PM	0	1	0	2	0	0	0	0	3
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	1	0	5	0	0	0	0	6
7:15 PM	1	0	0	1	0	0	0	0	2
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	15	15	17	22	1	1	0	0	71
APPROACH %'s :	50.00%	50.00%	43.59%	56.41%	50.00%	50.00%			
PEAK HR :	**04:30 PM - 05:30 PM**								TOTAL
PEAK HR VOL :	6	9	4	3	1	1	0	0	24
PEAK HR FACTOR :	0.500	0.563	0.333	0.250	0.250	0.250			0.667
	0.536		0.583		0.500				

Prepared by National Data & Surveying Services

Auburn St & Tinloy St/SR 49 On-Ramps

Peak Hour Turning Movement Count

ID: 19-07290-002
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

Auburn St — SOUTHBOUND

AM	135	118	0	0	368	AM
NOON	0	0	0	0	0	NOON
PM	237	152	0	0	356	PM

Tinloy St/SR 49 On-Ramps — EASTBOUND

AM	NOON	PM	
340	0	467	⇦
0	0	0	↰ 0
0	0	0	↱ 0
0	0	0	→ 0
0	0	0	↱ 0
AM	NOON	PM	

Tinloy St/SR 49 On-Ramps — WESTBOUND

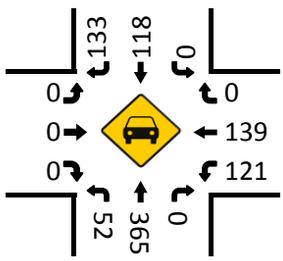
PM	NOON	AM	
0	0	0	0 ↱
197	0	151	0 ←
109	0	126	0 ↰
0	0	0	0 ↰
0	0	0	⇨
PM	NOON	AM	

Auburn St — NORTHBOUND

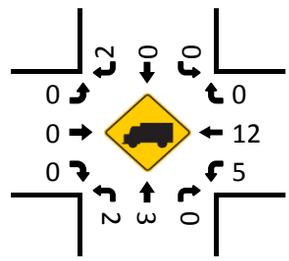
PM	261	0	33	356	0	PM
NOON	0	0	0	0	0	NOON
AM	244	0	54	368	0	AM

CONTROL			
Signalized			
TEV	952 AM	0 NOON	1084 PM
PHF	0.89		0.99

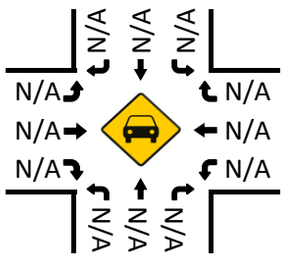
Cars (AM)



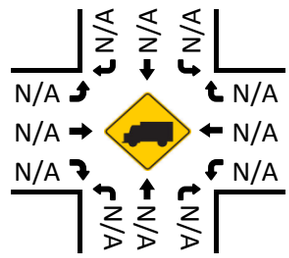
HT (AM)



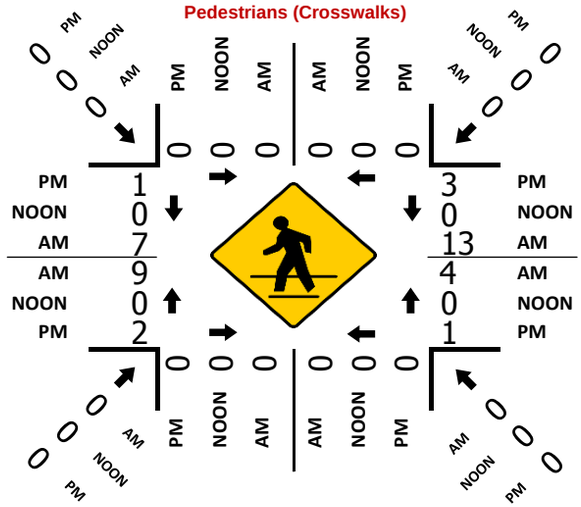
Cars (NOON)



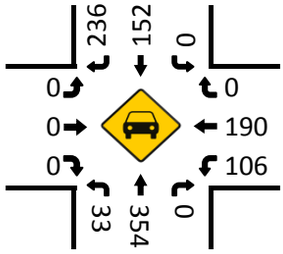
HT (NOON)



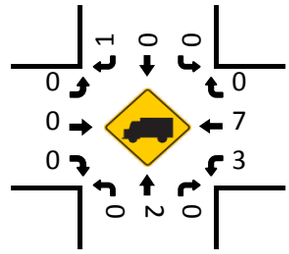
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Auburn St & Tinloy St/SR 49 On-Ramps
City: Grass Valley
Control: Signalized

Project ID: 19-07290-002
Date: 8/28/2019

Total

NS/EW Streets:	Auburn St				Auburn St				Tinloy St/SR 49 On-Ramps				Tinloy St/SR 49 On-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	3	25	0	0	0	10	22	0	0	0	0	0	7	24	0	0	91
6:45 AM	6	49	0	0	0	13	32	0	0	0	0	0	8	28	0	0	136
7:00 AM	3	41	0	0	0	14	29	0	0	0	0	0	10	29	0	0	126
7:15 AM	8	42	0	0	0	13	32	0	0	0	0	0	9	42	0	0	146
7:30 AM	1	54	0	0	0	19	27	0	0	0	0	0	17	33	0	0	151
7:45 AM	6	73	0	0	0	36	37	0	0	0	0	0	43	32	0	0	227
8:00 AM	10	88	0	0	0	21	31	0	0	0	0	0	33	37	0	0	220
8:15 AM	30	100	0	0	0	28	43	0	0	0	0	0	30	35	0	0	266
8:30 AM	7	87	0	0	0	32	28	0	0	0	0	0	28	46	0	0	228
8:45 AM	7	93	0	0	0	37	33	0	0	0	0	0	35	33	0	0	238
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	81	652	0	0	0	223	314	0	0	0	0	0	220	339	0	0	1829
APPROACH %'s :	11.05%	88.95%	0.00%	0.00%	0.00%	41.53%	58.47%	0.00%					39.36%	60.64%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	54	368	0	0	0	118	135	0	0	0	0	0	126	151	0	0	952
PEAK HR FACTOR :	0.450	0.920	0.000	0.000	0.000	0.797	0.785	0.000	0.000	0.000	0.000	0.000	0.900	0.821	0.000	0.000	0.895
	0.812				0.891								0.936				

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	6	76	0	0	0	42	54	0	0	0	0	0	19	55	0	0	252
3:45 PM	5	80	0	0	0	27	37	0	0	0	0	0	28	52	0	0	229
4:00 PM	7	72	0	0	0	27	51	0	0	0	0	0	16	47	0	0	220
4:15 PM	5	84	0	0	0	25	46	0	0	0	0	0	18	50	0	0	228
4:30 PM	12	81	0	0	0	33	58	0	0	0	0	0	24	58	0	0	266
4:45 PM	4	93	0	0	0	38	54	0	0	0	0	0	25	57	0	0	271
5:00 PM	10	86	0	0	0	39	63	0	0	0	0	0	32	42	0	0	272
5:15 PM	7	96	0	0	0	42	62	0	0	0	0	0	28	40	0	0	275
5:30 PM	5	80	0	0	0	23	46	0	0	0	0	0	23	38	0	0	215
5:45 PM	6	67	0	0	0	20	40	0	0	0	0	0	17	29	0	0	179
6:00 PM	5	56	0	0	0	34	39	0	0	0	0	0	9	32	0	0	175
6:15 PM	0	67	0	0	0	18	38	0	0	0	0	0	11	33	0	0	167
6:30 PM	2	51	0	0	0	30	47	0	0	0	0	0	13	30	0	0	173
6:45 PM	2	53	0	0	0	32	43	0	0	0	0	0	19	24	0	0	173
7:00 PM	4	42	0	0	0	21	26	0	0	0	0	0	7	31	0	0	131
7:15 PM	4	41	0	0	0	36	36	0	0	0	0	0	11	31	0	0	159
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	84	1125	0	0	0	487	740	0	0	0	0	0	300	649	0	0	3385
APPROACH %'s :	6.95%	93.05%	0.00%	0.00%	0.00%	39.69%	60.31%	0.00%					31.61%	68.39%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	33	356	0	0	0	152	237	0	0	0	0	0	109	197	0	0	1084
PEAK HR FACTOR :	0.688	0.927	0.000	0.000	0.000	0.905	0.940	0.000	0.000	0.000	0.000	0.000	0.852	0.849	0.000	0.000	0.985
	0.944				0.935								0.933				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Auburn St & Tinloy St/SR 49 On-Ramps
City: Grass Valley
Control: Signalized

Project ID: 19-07290-002
Date: 8/28/2019

Cars

NS/EW Streets:	Auburn St				Auburn St				Tinloy St/SR 49 On-Ramps				Tinloy St/SR 49 On-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	3	23	0	0	0	9	22	0	0	0	0	0	7	22	0	0	86
6:45 AM	6	46	0	0	0	13	29	0	0	0	0	0	6	23	0	0	123
7:00 AM	3	38	0	0	0	12	29	0	0	0	0	0	7	20	0	0	109
7:15 AM	7	40	0	0	0	13	32	0	0	0	0	0	9	34	0	0	135
7:30 AM	1	54	0	0	0	19	25	0	0	0	0	0	15	29	0	0	143
7:45 AM	6	70	0	0	0	35	37	0	0	0	0	0	41	28	0	0	217
8:00 AM	9	88	0	0	0	21	31	0	0	0	0	0	32	33	0	0	214
8:15 AM	29	99	0	0	0	28	42	0	0	0	0	0	28	30	0	0	256
8:30 AM	7	86	0	0	0	32	27	0	0	0	0	0	28	43	0	0	223
8:45 AM	7	92	0	0	0	37	33	0	0	0	0	0	33	33	0	0	235
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	78	636	0	0	0	219	307	0	0	0	0	0	206	295	0	0	1741
APPROACH %'s :	10.92%	89.08%	0.00%	0.00%	0.00%	41.63%	58.37%	0.00%					41.12%	58.88%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	52	365	0	0	0	118	133	0	0	0	0	0	121	139	0	0	928
PEAK HR FACTOR :	0.45	0.922	0.000	0.000	0.000	0.797	0.792	0.000	0.000	0.000	0.000	0.000	0.917	0.808	0.000	0.000	0.906
		0.814				0.896								0.915			

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	5	76	0	0	0	42	54	0	0	0	0	0	19	51	0	0	247
3:45 PM	5	79	0	0	0	27	36	0	0	0	0	0	27	51	0	0	225
4:00 PM	7	71	0	0	0	27	51	0	0	0	0	0	16	45	0	0	217
4:15 PM	5	82	0	0	0	24	46	0	0	0	0	0	18	47	0	0	222
4:30 PM	12	79	0	0	0	33	58	0	0	0	0	0	23	58	0	0	263
4:45 PM	4	93	0	0	0	38	53	0	0	0	0	0	25	53	0	0	266
5:00 PM	10	86	0	0	0	39	63	0	0	0	0	0	31	40	0	0	269
5:15 PM	7	96	0	0	0	42	62	0	0	0	0	0	27	39	0	0	273
5:30 PM	5	80	0	0	0	23	44	0	0	0	0	0	23	38	0	0	213
5:45 PM	6	67	0	0	0	20	40	0	0	0	0	0	17	29	0	0	179
6:00 PM	5	55	0	0	0	34	39	0	0	0	0	0	9	32	0	0	174
6:15 PM	0	67	0	0	0	18	38	0	0	0	0	0	10	33	0	0	166
6:30 PM	2	51	0	0	0	30	47	0	0	0	0	0	12	30	0	0	172
6:45 PM	2	52	0	0	0	32	42	0	0	0	0	0	17	23	0	0	168
7:00 PM	4	42	0	0	0	21	26	0	0	0	0	0	7	30	0	0	130
7:15 PM	4	41	0	0	0	35	36	0	0	0	0	0	10	31	0	0	157
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	83	1117	0	0	0	485	735	0	0	0	0	0	291	630	0	0	3341
APPROACH %'s :	6.92%	93.08%	0.00%	0.00%	0.00%	39.75%	60.25%	0.00%					31.60%	68.40%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	33	354	0	0	0	152	236	0	0	0	0	0	106	190	0	0	1071
PEAK HR FACTOR :	0.69	0.922	0.000	0.000	0.000	0.905	0.937	0.000	0.000	0.000	0.000	0.000	0.855	0.819	0.000	0.000	0.981
		0.939				0.933								0.914			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Auburn St & Tinloy St/SR 49 On-Ramps
City: Grass Valley
Control: Signalized

Project ID: 19-07290-002
Date: 8/28/2019

HT

NS/EW Streets:	Auburn St				Auburn St				Tinloy St/SR 49 On-Ramps				Tinloy St/SR 49 On-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	2	0	0	0	1	0	0	0	0	0	0	0	2	0	0	5
6:45 AM	0	3	0	0	0	0	3	0	0	0	0	0	2	5	0	0	13
7:00 AM	0	3	0	0	0	2	0	0	0	0	0	0	3	9	0	0	17
7:15 AM	1	2	0	0	0	0	0	0	0	0	0	0	0	8	0	0	11
7:30 AM	0	0	0	0	0	0	2	0	0	0	0	0	2	4	0	0	8
7:45 AM	0	3	0	0	0	1	0	0	0	0	0	0	2	4	0	0	10
8:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	6
8:15 AM	1	1	0	0	0	0	1	0	0	0	0	0	2	5	0	0	10
8:30 AM	0	1	0	0	0	0	1	0	0	0	0	0	0	3	0	0	5
8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	3	16	0	0	0	4	7	0	0	0	0	0	14	44	0	0	88
APPROACH %'s :	15.79%	84.21%	0.00%	0.00%	0.00%	36.36%	63.64%	0.00%					24.14%	75.86%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	2	3	0	0	0	0	2	0	0	0	0	0	5	12	0	0	24
PEAK HR FACTOR :	0.500	0.750	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.625	0.600	0.000	0.000	0.600
	0.625				0.500								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	1	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	5
3:45 PM	0	1	0	0	0	0	1	0	0	0	0	0	1	1	0	0	4
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3
4:15 PM	0	2	0	0	0	1	0	0	0	0	0	0	0	3	0	0	6
4:30 PM	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3
4:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	4	0	0	5
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
5:30 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
6:45 PM	0	1	0	0	0	0	1	0	0	0	0	0	2	1	0	0	5
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	8	0	0	0	2	5	0	0	0	0	0	9	19	0	0	44
APPROACH %'s :	11.11%	88.89%	0.00%	0.00%	0.00%	28.57%	71.43%	0.00%					32.14%	67.86%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	2	0	0	0	0	1	0	0	0	0	0	3	7	0	0	13
PEAK HR FACTOR :	0.00	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.750	0.438	0.000	0.000	0.650
	0.250				0.250								0.625				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Auburn St & Tinloy St/SR 49 On-Ramps
City: Grass Valley
Control: Signalized

Project ID: 19-07290-002
Date: 8/28/2019

Bikes

NS/EW Streets:	Auburn St				Auburn St				Tinloy St/SR 49 On-Ramps				Tinloy St/SR 49 On-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	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
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	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	1	0	0	0	0	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 :	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
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	1	0	0	0	0	0	0	0	0	0	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
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
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	1	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	1	0	0	0	0	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 :	0	4	0	0	0	3	0	0	0	1	0	0	0	1	0	0	9
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	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	2	0	0	0	2	0	0	0	1	0	0	0	1	0	0	6
PEAK HR FACTOR :	0.00	0.500	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.750
		0.500				0.500				0.250				0.250			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Auburn St & Tinloy St/SR 49 On-Ramps
City: Grass Valley

Project ID: 19-07290-002
Date: 8/28/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Auburn St		Auburn St		Tinloy St/SR 49 On-Ramps		Tinloy St/SR 49 On-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	1	0	0	1	2
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	1	0	3	0	4
7:30 AM	0	0	1	0	1	1	5	2	10
7:45 AM	0	0	0	0	1	0	1	3	5
8:00 AM	0	0	0	0	0	0	3	3	6
8:15 AM	0	0	0	0	2	11	3	0	16
8:30 AM	0	0	0	0	1	2	0	1	4
8:45 AM	0	0	0	0	1	0	3	3	7
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	1	0	8	14	18	13	54
APPROACH %'s :			100.00%	0.00%	36.36%	63.64%	58.06%	41.94%	
PEAK HR :	**08:00 AM - 09:00 AM**								TOTAL
PEAK HR VOL :	0	0	0	0	4	13	9	7	33
PEAK HR FACTOR :					0.500	0.295	0.750	0.583	0.516
					0.327		0.667		

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	2	1	3
3:45 PM	0	0	0	0	0	0	2	0	2
4:00 PM	0	0	0	0	1	0	0	1	2
4:15 PM	0	0	0	0	0	1	1	0	2
4:30 PM	0	0	0	0	0	2	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	1	1	2	0	4
5:15 PM	0	0	0	0	0	0	0	1	1
5:30 PM	0	0	0	0	0	0	0	1	1
5:45 PM	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	1	0	3	4
6:15 PM	0	0	0	0	2	0	0	0	2
6:30 PM	0	0	0	0	0	0	0	1	1
6:45 PM	0	0	0	0	0	1	0	1	2
7:00 PM	0	0	0	0	0	0	0	1	1
7:15 PM	0	0	0	0	1	0	0	0	1
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	5	6	7	10	28
APPROACH %'s :					45.45%	54.55%	41.18%	58.82%	
PEAK HR :	**04:30 PM - 05:30 PM**								TOTAL
PEAK HR VOL :	0	0	0	0	1	3	2	1	7
PEAK HR FACTOR :					0.250	0.375	0.250	0.250	0.438
					0.500		0.375		

Prepared by National Data & Surveying Services

Bennett St & SR 49 WB Off Ramps/Tinloy St

Peak Hour Turning Movement Count

ID: 19-07290-003
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	108	242	0	0	358	AM
NOON	0	0	0	0	0	NOON
PM	195	322	0	0	321	PM

SR 49 WB Off Ramps/Tinloy St — EASTBOUND

AM	NOON	PM	
324	0	431	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
AM	NOON	PM	

SR 49 WB Off Ramps/Tinloy St — WESTBOUND

PM	NOON	AM	
160	0	141	0
217	0	205	0
174	0	136	0
0	0	0	0
0	0	0	
PM	NOON	AM	

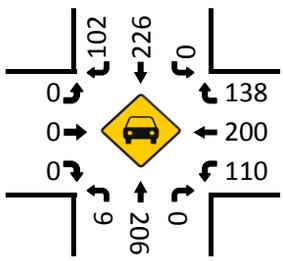
CONTROL: 1 Stop Sign (WB)

TEV	1060	0	1248
	AM	NOON	PM
PHF	0.99		0.95

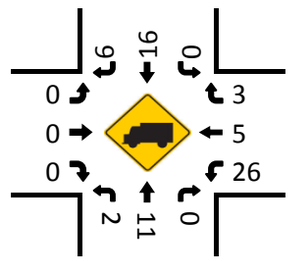
Bennett St — NORTHBOUND

PM	496	0	19	161	0	PM
NOON	0	0	0	0	0	NOON
AM	378	0	11	217	0	AM

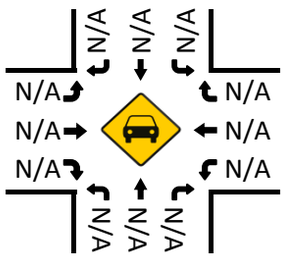
Cars (AM)



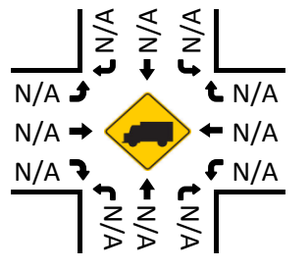
HT (AM)



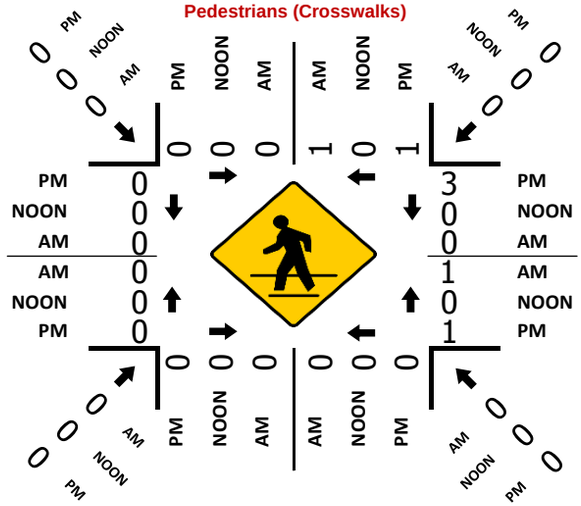
Cars (NOON)



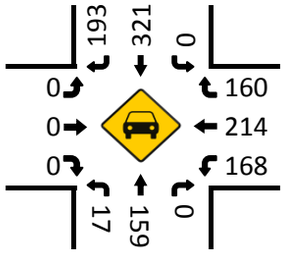
HT (NOON)



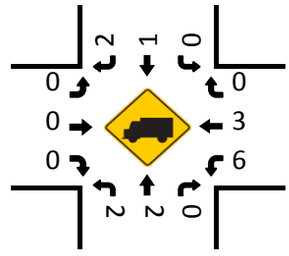
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Bennett St — NORTHBOUND

Bennett St

National Data & Surveying Services

Intersection Turning Movement Count

Location: Bennett St & SR 49 WB Off Ramps/Tinloy St
City: Grass Valley
Control: 1 Stop Sign (WB)

Project ID: 19-07290-003
Date: 8/28/2019

Total

NS/EW Streets:	Bennett St				Bennett St				SR 49 WB Off Ramps/Tinloy St				SR 49 WB Off Ramps/Tinloy St				
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	26	0	0	0	23	17	0	0	0	0	0	10	13	7	0	97
6:45 AM	2	17	0	0	0	36	9	0	0	0	0	0	7	18	10	0	99
7:00 AM	2	30	0	0	0	38	9	0	0	0	0	0	17	17	6	0	119
7:15 AM	2	18	0	0	0	37	16	0	0	0	0	0	16	19	10	0	118
7:30 AM	2	35	0	0	0	45	12	0	0	0	0	0	24	24	23	0	165
7:45 AM	2	40	0	0	0	66	25	0	0	0	0	0	26	64	33	0	256
8:00 AM	2	60	0	0	0	55	16	0	0	0	0	0	37	51	42	0	263
8:15 AM	4	45	0	0	0	56	20	0	0	0	0	0	39	64	39	0	267
8:30 AM	2	63	0	0	0	63	33	0	0	0	0	0	35	42	30	0	268
8:45 AM	3	49	0	0	0	68	39	0	0	0	0	0	25	48	30	0	262
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	22	383	0	0	0	487	196	0	0	0	0	0	236	360	230	0	1914
APPROACH %'s :	5.43%	94.57%	0.00%	0.00%	0.00%	71.30%	28.70%	0.00%					28.57%	43.58%	27.85%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	11	217	0	0	0	242	108	0	0	0	0	0	136	205	141	0	1060
PEAK HR FACTOR :	0.688	0.861	0.000	0.000	0.000	0.890	0.692	0.000	0.000	0.000	0.000	0.000	0.872	0.801	0.839	0.000	0.989
	0.877				0.818								0.849				

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	5	28	0	0	0	83	42	0	0	0	0	0	44	45	24	0	271
3:45 PM	8	32	0	0	0	71	46	0	0	0	0	0	40	60	32	0	289
4:00 PM	4	40	0	0	0	62	34	0	0	0	0	0	50	54	38	0	282
4:15 PM	2	21	0	0	0	71	48	0	0	0	0	0	38	49	31	0	260
4:30 PM	8	35	0	0	0	85	56	0	0	0	0	0	30	57	25	0	296
4:45 PM	5	35	0	0	0	80	44	0	0	0	0	0	34	57	41	0	296
5:00 PM	3	42	0	0	0	86	46	0	0	0	0	0	54	61	35	0	327
5:15 PM	3	49	0	0	0	71	49	0	0	0	0	0	56	42	59	0	329
5:30 PM	5	28	0	0	0	50	36	0	0	0	0	0	41	41	40	0	241
5:45 PM	2	35	0	0	0	54	20	0	0	0	0	0	28	61	27	0	227
6:00 PM	3	22	0	0	0	59	31	0	0	0	0	0	23	35	38	0	211
6:15 PM	2	31	0	0	0	51	33	0	0	0	0	0	36	21	26	0	200
6:30 PM	1	16	0	0	0	45	27	0	0	0	0	0	22	33	19	0	163
6:45 PM	4	19	0	0	0	51	26	0	0	0	0	0	34	30	17	0	181
7:00 PM	5	24	0	0	0	44	30	0	0	0	0	0	17	25	17	0	162
7:15 PM	1	18	0	0	0	60	17	0	0	0	0	0	29	17	20	0	162
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	61	475	0	0	0	1023	585	0	0	0	0	0	576	688	489	0	3897
APPROACH %'s :	11.38%	88.62%	0.00%	0.00%	0.00%	63.62%	36.38%	0.00%					32.86%	39.25%	27.90%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	19	161	0	0	0	322	195	0	0	0	0	0	174	217	160	0	1248
PEAK HR FACTOR :	0.594	0.821	0.000	0.000	0.000	0.936	0.871	0.000	0.000	0.000	0.000	0.000	0.777	0.889	0.678	0.000	0.948
	0.865				0.917								0.877				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Bennett St & SR 49 WB Off Ramps/Tinloy St
City: Grass Valley
Control: 1 Stop Sign (WB)

Project ID: 19-07290-003
Date: 8/28/2019

Cars

NS/EW Streets:	Bennett St				Bennett St				SR 49 WB Off Ramps/Tinloy St				SR 49 WB Off Ramps/Tinloy St				
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	1	23	0	0	0	23	14	0	0	0	0	0	10	12	7	0	90
6:45 AM	1	17	0	0	0	35	7	0	0	0	0	0	7	16	10	0	93
7:00 AM	2	29	0	0	0	38	8	0	0	0	0	0	17	15	6	0	115
7:15 AM	1	17	0	0	0	37	14	0	0	0	0	0	15	19	10	0	113
7:30 AM	2	34	0	0	0	45	12	0	0	0	0	0	24	24	23	0	164
7:45 AM	1	38	0	0	0	64	22	0	0	0	0	0	25	59	33	0	242
8:00 AM	2	57	0	0	0	54	16	0	0	0	0	0	34	49	42	0	254
8:15 AM	2	43	0	0	0	53	19	0	0	0	0	0	29	62	39	0	247
8:30 AM	2	61	0	0	0	59	32	0	0	0	0	0	26	42	28	0	250
8:45 AM	3	45	0	0	0	60	35	0	0	0	0	0	21	47	29	0	240
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	17	364	0	0	0	468	179	0	0	0	0	0	208	345	227	0	1808
APPROACH %'s :	4.46%	95.54%	0.00%	0.00%	0.00%	72.33%	27.67%	0.00%					26.67%	44.23%	29.10%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	9	206	0	0	0	226	102	0	0	0	0	0	110	200	138	0	991
PEAK HR FACTOR :	0.75	0.844	0.000	0.000	0.000	0.942	0.729	0.000	0.000	0.000	0.000	0.000	0.809	0.806	0.821	0.000	0.975
		0.853				0.863								0.862			

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	4	28	0	0	0	80	39	0	0	0	0	0	44	41	24	0	260
3:45 PM	7	32	0	0	0	70	44	0	0	0	0	0	39	59	32	0	283
4:00 PM	4	39	0	0	0	62	34	0	0	0	0	0	49	54	38	0	280
4:15 PM	1	19	0	0	0	70	48	0	0	0	0	0	36	49	31	0	254
4:30 PM	8	33	0	0	0	84	56	0	0	0	0	0	29	55	25	0	290
4:45 PM	3	35	0	0	0	80	44	0	0	0	0	0	33	57	41	0	293
5:00 PM	3	42	0	0	0	86	46	0	0	0	0	0	54	61	35	0	327
5:15 PM	3	49	0	0	0	71	47	0	0	0	0	0	52	41	59	0	322
5:30 PM	4	28	0	0	0	50	36	0	0	0	0	0	40	39	40	0	237
5:45 PM	2	34	0	0	0	54	18	0	0	0	0	0	27	60	27	0	222
6:00 PM	3	22	0	0	0	59	31	0	0	0	0	0	23	35	38	0	211
6:15 PM	1	31	0	0	0	51	29	0	0	0	0	0	36	21	26	0	195
6:30 PM	1	16	0	0	0	45	26	0	0	0	0	0	22	33	19	0	162
6:45 PM	3	18	0	0	0	51	23	0	0	0	0	0	34	29	17	0	175
7:00 PM	4	24	0	0	0	44	29	0	0	0	0	0	17	25	17	0	160
7:15 PM	0	18	0	0	0	60	16	0	0	0	0	0	29	17	20	0	160
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	51	468	0	0	0	1017	566	0	0	0	0	0	564	676	489	0	3831
APPROACH %'s :	9.83%	90.17%	0.00%	0.00%	0.00%	64.25%	35.75%	0.00%					32.62%	39.10%	28.28%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	17	159	0	0	0	321	193	0	0	0	0	0	168	214	160	0	1232
PEAK HR FACTOR :	0.53	0.811	0.000	0.000	0.000	0.933	0.862	0.000	0.000	0.000	0.000	0.000	0.778	0.877	0.678	0.000	0.942
		0.846				0.918								0.891			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Bennett St & SR 49 WB Off Ramps/Tinloy St
City: Grass Valley
Control: 1 Stop Sign (WB)

Project ID: 19-07290-003
Date: 8/28/2019

HT

NS/EW Streets:	Bennett St				Bennett St				SR 49 WB Off Ramps/Tinloy St				SR 49 WB Off Ramps/Tinloy St				
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	0	0	0	0	3	0	0	0	0	0	0	1	0	0	7
6:45 AM	1	0	0	0	0	1	2	0	0	0	0	0	0	2	0	0	6
7:00 AM	0	1	0	0	0	0	1	0	0	0	0	0	0	2	0	0	4
7:15 AM	1	1	0	0	0	0	2	0	0	0	0	0	1	0	0	0	5
7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	1	2	0	0	0	2	3	0	0	0	0	0	1	5	0	0	14
8:00 AM	0	3	0	0	0	1	0	0	0	0	0	0	3	2	0	0	9
8:15 AM	2	2	0	0	0	3	1	0	0	0	0	0	10	2	0	0	20
8:30 AM	0	2	0	0	0	4	1	0	0	0	0	0	9	0	2	0	18
8:45 AM	0	4	0	0	0	8	4	0	0	0	0	0	4	1	1	0	22
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	5	19	0	0	0	19	17	0	0	0	0	0	28	15	3	0	106
APPROACH %'s :	20.83%	79.17%	0.00%	0.00%	0.00%	52.78%	47.22%	0.00%					60.87%	32.61%	6.52%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	2	11	0	0	0	16	6	0	0	0	0	0	26	5	3	0	69
PEAK HR FACTOR :	0.250	0.688	0.000	0.000	0.000	0.500	0.375	0.000	0.000	0.000	0.000	0.000	0.650	0.625	0.375	0.000	0.784
	0.813				0.458								0.708				

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	3	3	0	0	0	0	0	0	4	0	0	11
3:45 PM	1	0	0	0	0	1	2	0	0	0	0	0	1	1	0	0	6
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
4:15 PM	1	2	0	0	0	1	0	0	0	0	0	0	2	0	0	0	6
4:30 PM	0	2	0	0	0	1	0	0	0	0	0	0	1	2	0	0	6
4:45 PM	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3
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	2	0	0	0	0	0	4	1	0	0	7
5:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	4
5:45 PM	0	1	0	0	0	0	2	0	0	0	0	0	1	1	0	0	5
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	1	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	5
6:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
6:45 PM	1	1	0	0	0	0	3	0	0	0	0	0	0	1	0	0	6
7:00 PM	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2
7:15 PM	1	0	0	0	0	0	1	0	0	0	0	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 :	10	7	0	0	0	6	19	0	0	0	0	0	12	12	0	0	66
APPROACH %'s :	58.82%	41.18%	0.00%	0.00%	0.00%	24.00%	76.00%	0.00%					50.00%	50.00%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	2	2	0	0	0	1	2	0	0	0	0	0	6	3	0	0	16
PEAK HR FACTOR :	0.25	0.250	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.375	0.375	0.000	0.000	0.571
	0.500				0.375								0.450				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Bennett St & SR 49 WB Off Ramps/Tinloy St
City: Grass Valley
Control: 1 Stop Sign (WB)

Project ID: 19-07290-003
Date: 8/28/2019

Bikes

NS/EW Streets:	Bennett St				Bennett St				SR 49 WB Off Ramps/Tinloy St				SR 49 WB Off Ramps/Tinloy St				
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	1	0	0	0	0	0	0	0	0	0	1
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	2	0	0	0	0	0	0	0	0	0	0	2
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	2	1	0	0	0	0	0	0	0	0	0	4
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	66.67%	33.33%	0.00%									
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
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	1	0	0	0	0	0	0	0	0	0	1
4:00 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	3
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	1	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	4
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
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	1	0	0	0	0	0	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
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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 :	1	2	0	0	0	5	3	0	1	0	1	0	1	1	0	0	15
APPROACH %'s :	33.33%	66.67%	0.00%	0.00%	0.00%	62.50%	37.50%	0.00%	50.00%	0.00%	50.00%	0.00%	50.00%	50.00%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	1	0	0	0	0	1	2	0	1	0	0	0	1	0	0	0	6
PEAK HR FACTOR :	0.25	0.000	0.000	0.000	0.000	0.250	0.500	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.375
		0.250				0.375				0.250				0.250			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Bennett St & SR 49 WB Off Ramps/Tinloy St
City: Grass Valley

Project ID: 19-07290-003
Date: 8/28/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Bennett St		Bennett St		SR 49 WB Off Ramps/Tinloy St		SR 49 WB Off Ramps/Tinloy St		
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	1	0	0	0	1	0	0	2
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	1	0	0	0	0	0	0	1
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	2	0	0	1	2	0	0	5
APPROACH %'s :	0.00%	100.00%			33.33%	66.67%			
PEAK HR :	**08:00 AM - 09:00 AM**								TOTAL
PEAK HR VOL :	0	1	0	0	1	0	0	0	2
PEAK HR FACTOR :		0.250			0.250				0.500
	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	2	0	0	0	2
3:45 PM	0	0	0	0	2	0	0	0	2
4:00 PM	0	0	0	0	0	2	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	0	2	0	0	3
4:45 PM	0	0	0	0	1	0	0	0	1
5:00 PM	0	0	0	0	0	1	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	1	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0
6:15 PM	1	0	0	0	0	0	0	0	1
6:30 PM	1	0	0	0	0	1	0	0	2
6:45 PM	0	0	0	1	1	2	0	0	4
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 :	2	1	0	1	6	12	0	0	22
APPROACH %'s :	66.67%	33.33%	0.00%	100.00%	33.33%	66.67%			
PEAK HR :	**04:30 PM - 05:30 PM**								TOTAL
PEAK HR VOL :	0	1	0	0	1	3	0	0	5
PEAK HR FACTOR :		0.250			0.250	0.375			0.417
	0.250				0.500				

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

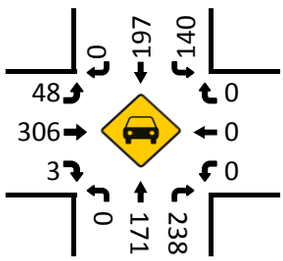
1 Stop Sign (EB)

TEV	1169	0	1097
	AM	NOON	PM
PHF	0.91		0.90

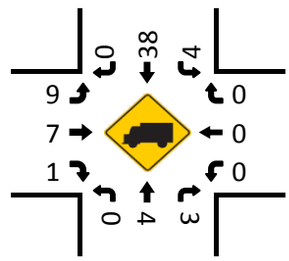
NORTHBOUND — Bennett St

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

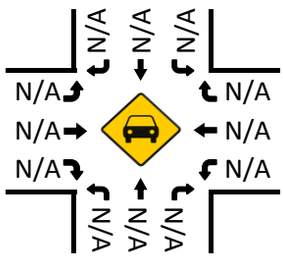
Cars (AM)



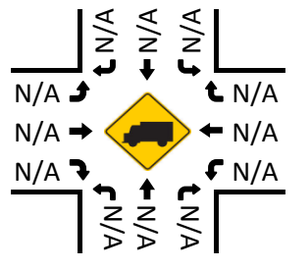
HT (AM)



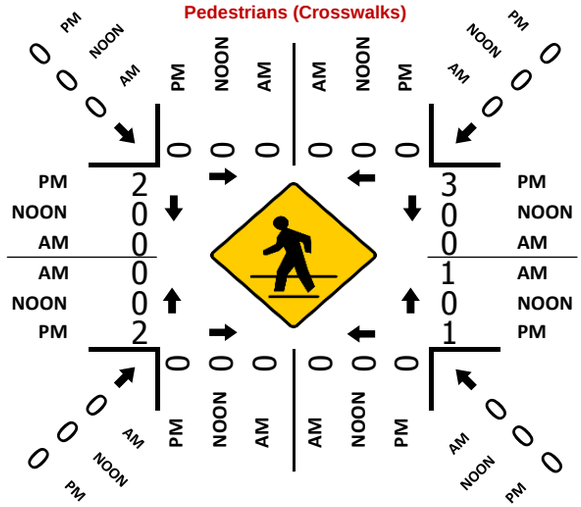
Cars (NOON)



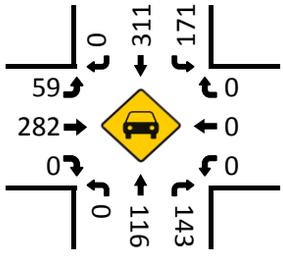
HT (NOON)



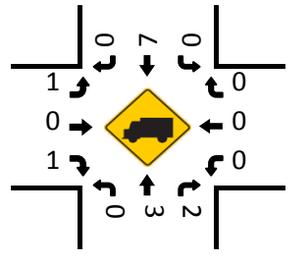
Pedestrians (Crosswalks)



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

SR 49 NB Ramps & Idaho Maryland Rd

Peak Hour Turning Movement Count

ID: 19-07290-005
City: Grass Valley

Day: Wednesday
Date: 08/28/2019

PEAK HOURS
AM: 07:45 AM - 08:45 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

SR 49 NB Ramps — 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		
594	0	856	⇦	
0	0	0	↶	0
0	0	0	↱	0
265	0	186	→	0
36	0	37	↴	0
AM	NOON	PM		

CONTROL

3 Way Stop Sign - NB/EB/WB

TEV	1357 AM	0 NOON	1332 PM
PHF	0.93		0.90

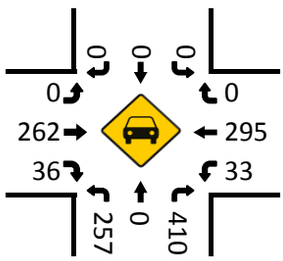
Idaho Maryland Rd — WESTBOUND

PM	NOON	AM		
0	0	0	↰	0
689	0	326	←	0
56	0	38	↰	0
0	0	0	↰	0
381	0	689	⇨	
PM	NOON	AM		

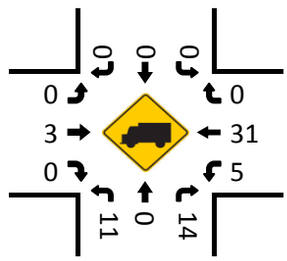
SR 49 NB Ramps — NORTHBOUND

PM	95	2	167	0	195	PM
NOON	0	0	0	0	0	NOON
AM	74	0	268	0	424	AM

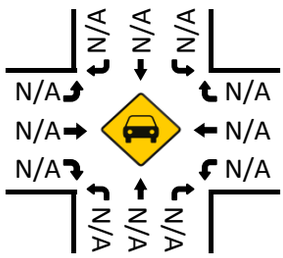
Cars (AM)



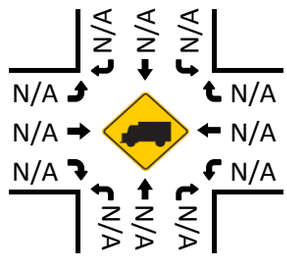
HT (AM)



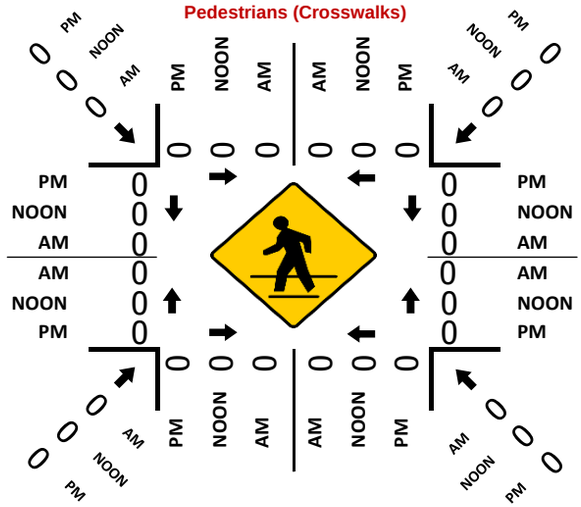
Cars (NOON)



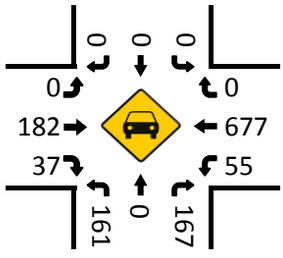
HT (NOON)



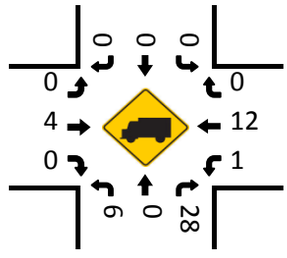
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49 NB Ramps & Idaho Maryland Rd
City: Grass Valley
Control: 3 Way Stop Sign - NB/EB/WB

Project ID: 19-07290-005
Date: 8/28/2019

Total

NS/EW Streets:	SR 49 NB Ramps				SR 49 NB Ramps				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	21	0	65	0	0	0	0	0	0	32	1	0	7	25	0	0	151
6:45 AM	31	0	128	0	0	0	0	0	0	59	3	0	7	36	0	0	264
7:00 AM	36	0	56	0	0	0	0	0	0	38	5	0	8	43	0	1	187
7:15 AM	37	0	74	1	0	0	0	0	0	40	4	0	7	45	0	0	208
7:30 AM	53	0	69	0	0	0	0	0	0	48	7	0	6	70	0	0	253
7:45 AM	73	0	131	0	0	0	0	0	0	64	7	0	7	72	0	0	354
8:00 AM	63	0	96	0	0	0	0	0	0	54	16	0	12	77	0	0	318
8:15 AM	77	0	107	0	0	0	0	0	0	79	7	0	9	87	0	0	366
8:30 AM	55	0	90	0	0	0	0	0	0	68	6	0	10	90	0	0	319
8:45 AM	40	0	109	0	0	0	0	0	0	70	9	0	8	82	0	0	318
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	486	0	925	1	0	0	0	0	0	552	65	0	81	627	0	1	2738
APPROACH %'s :	34.42%	0.00%	65.51%	0.07%					0.00%	89.47%	10.53%	0.00%	11.42%	88.43%	0.00%	0.14%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	268	0	424	0	0	0	0	0	0	265	36	0	38	326	0	0	1357
PEAK HR FACTOR :	0.870	0.000	0.809	0.000	0.000	0.000	0.000	0.000	0.000	0.839	0.563	0.000	0.792	0.906	0.000	0.000	0.927
	0.848								0.875				0.910				

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	54	0	42	2	0	0	0	0	0	58	13	0	10	173	0	0	352
3:45 PM	47	0	63	0	0	0	0	0	0	73	16	0	13	139	0	0	351
4:00 PM	58	0	43	0	0	0	0	0	0	58	12	0	15	137	0	0	323
4:15 PM	44	0	58	0	0	0	0	0	0	54	8	0	11	125	0	0	300
4:30 PM	49	0	35	0	0	0	0	0	0	58	15	0	12	170	0	0	339
4:45 PM	35	0	58	0	0	0	0	0	0	50	6	0	15	144	0	0	308
5:00 PM	38	0	49	0	0	0	0	0	0	35	9	0	15	225	0	0	371
5:15 PM	45	0	53	2	0	0	0	0	0	43	7	0	14	150	0	0	314
5:30 PM	36	0	41	0	0	0	0	0	0	39	7	0	8	145	0	0	276
5:45 PM	39	0	35	0	0	0	0	0	0	42	10	0	4	87	0	0	217
6:00 PM	25	0	36	0	0	0	0	0	0	23	7	0	9	90	0	0	190
6:15 PM	25	0	27	0	0	0	0	0	0	29	10	0	3	78	0	0	172
6:30 PM	24	0	18	0	0	0	0	0	0	28	11	0	2	82	0	0	165
6:45 PM	25	0	26	1	0	0	0	0	0	22	3	0	5	66	0	0	148
7:00 PM	18	0	10	0	0	0	0	0	0	24	7	0	7	55	0	0	121
7:15 PM	15	0	31	0	0	0	0	0	0	18	6	0	2	42	0	0	114
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	577	0	625	5	0	0	0	0	0	654	147	0	145	1908	0	0	4061
APPROACH %'s :	47.80%	0.00%	51.78%	0.41%					0.00%	81.65%	18.35%	0.00%	7.06%	92.94%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	167	0	195	2	0	0	0	0	0	186	37	0	56	689	0	0	1332
PEAK HR FACTOR :	0.852	0.000	0.841	0.250	0.000	0.000	0.000	0.000	0.000	0.802	0.617	0.000	0.933	0.766	0.000	0.000	0.898
	0.910								0.764				0.776				

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49 NB Ramps & Idaho Maryland Rd
City: Grass Valley
Control: 3 Way Stop Sign - NB/EB/WB

Project ID: 19-07290-005
Date: 8/28/2019

Cars

NS/EW Streets:	SR 49 NB Ramps				SR 49 NB Ramps				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	19	0	63	0	0	0	0	0	0	32	1	0	7	22	0	0	144
6:45 AM	31	0	124	0	0	0	0	0	0	59	3	0	5	29	0	0	251
7:00 AM	34	0	53	0	0	0	0	0	0	38	5	0	7	37	0	1	175
7:15 AM	36	0	70	1	0	0	0	0	0	40	4	0	6	40	0	0	197
7:30 AM	52	0	66	0	0	0	0	0	0	47	7	0	4	60	0	0	236
7:45 AM	73	0	130	0	0	0	0	0	0	64	7	0	6	59	0	0	339
8:00 AM	58	0	93	0	0	0	0	0	0	54	16	0	11	72	0	0	304
8:15 AM	72	0	104	0	0	0	0	0	0	77	7	0	7	80	0	0	347
8:30 AM	54	0	83	0	0	0	0	0	0	67	6	0	9	84	0	0	303
8:45 AM	40	0	109	0	0	0	0	0	0	68	8	0	8	75	0	0	308
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	469	0	895	1	0	0	0	0	0	546	64	0	70	558	0	1	2604
APPROACH %'s :	34.36%	0.00%	65.57%	0.07%					0.00%	89.51%	10.49%	0.00%	11.13%	88.71%	0.00%	0.16%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	257	0	410	0	0	0	0	0	0	262	36	0	33	295	0	0	1293
PEAK HR FACTOR :	0.88	0.000	0.788	0.000	0.000	0.000	0.000	0.000	0.000	0.851	0.563	0.000	0.750	0.878	0.000	0.000	0.932
	0.821								0.887				0.882				

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	53	0	37	2	0	0	0	0	0	58	13	0	10	170	0	0	343
3:45 PM	44	0	59	0	0	0	0	0	0	72	16	0	13	135	0	0	339
4:00 PM	58	0	43	0	0	0	0	0	0	50	12	0	15	135	0	0	313
4:15 PM	44	0	53	0	0	0	0	0	0	51	8	0	11	121	0	0	288
4:30 PM	48	0	31	0	0	0	0	0	0	57	15	0	12	167	0	0	330
4:45 PM	34	0	52	0	0	0	0	0	0	49	6	0	14	142	0	0	297
5:00 PM	37	0	37	0	0	0	0	0	0	34	9	0	15	220	0	0	352
5:15 PM	42	0	47	2	0	0	0	0	0	42	7	0	14	148	0	0	302
5:30 PM	36	0	34	0	0	0	0	0	0	39	7	0	8	143	0	0	267
5:45 PM	39	0	34	0	0	0	0	0	0	42	10	0	4	86	0	0	215
6:00 PM	25	0	35	0	0	0	0	0	0	23	7	0	8	90	0	0	188
6:15 PM	24	0	26	0	0	0	0	0	0	28	10	0	3	76	0	0	167
6:30 PM	24	0	18	0	0	0	0	0	0	27	11	0	2	80	0	0	162
6:45 PM	25	0	25	1	0	0	0	0	0	22	3	0	5	66	0	0	147
7:00 PM	18	0	10	0	0	0	0	0	0	24	7	0	7	55	0	0	121
7:15 PM	15	0	29	0	0	0	0	0	0	18	6	0	2	41	0	0	111
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	566	0	570	5	0	0	0	0	0	636	147	0	143	1875	0	0	3942
APPROACH %'s :	49.61%	0.00%	49.96%	0.44%					0.00%	81.23%	18.77%	0.00%	7.09%	92.91%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	161	0	167	2	0	0	0	0	0	182	37	0	55	677	0	0	1281
PEAK HR FACTOR :	0.84	0.000	0.803	0.250	0.000	0.000	0.000	0.000	0.000	0.798	0.617	0.000	0.917	0.769	0.000	0.000	0.910
	0.907								0.760				0.779				

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49 NB Ramps & Idaho Maryland Rd
City: Grass Valley
Control: 3 Way Stop Sign - NB/EB/WB

Project ID: 19-07290-005
Date: 8/28/2019

HT

NS/EW Streets:	SR 49 NB Ramps				SR 49 NB Ramps				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	2	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	7
6:45 AM	0	0	4	0	0	0	0	0	0	0	0	0	2	7	0	0	13
7:00 AM	2	0	3	0	0	0	0	0	0	0	0	0	1	6	0	0	12
7:15 AM	1	0	4	0	0	0	0	0	0	0	0	0	1	5	0	0	11
7:30 AM	1	0	3	0	0	0	0	0	0	1	0	0	2	10	0	0	17
7:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	13	0	0	15
8:00 AM	5	0	3	0	0	0	0	0	0	0	0	0	1	5	0	0	14
8:15 AM	5	0	3	0	0	0	0	0	0	2	0	0	2	7	0	0	19
8:30 AM	1	0	7	0	0	0	0	0	0	1	0	0	1	6	0	0	16
8:45 AM	0	0	0	0	0	0	0	0	0	2	1	0	0	7	0	0	10
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	17	0	30	0	0	0	0	0	0	6	1	0	11	69	0	0	134
APPROACH %'s :	36.17%	0.00%	63.83%	0.00%					0.00%	85.71%	14.29%	0.00%	13.75%	86.25%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	11	0	14	0	0	0	0	0	0	3	0	0	5	31	0	0	64
PEAK HR FACTOR :	0.550	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.625	0.596	0.000	0.000	0.842
	0.781								0.375				0.643				

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	5	0	0	0	0	0	0	0	0	0	0	3	0	0	9
3:45 PM	3	0	4	0	0	0	0	0	0	1	0	0	0	4	0	0	12
4:00 PM	0	0	0	0	0	0	0	0	0	8	0	0	0	2	0	0	10
4:15 PM	0	0	5	0	0	0	0	0	0	3	0	0	0	4	0	0	12
4:30 PM	1	0	4	0	0	0	0	0	0	1	0	0	0	3	0	0	9
4:45 PM	1	0	6	0	0	0	0	0	0	1	0	0	1	2	0	0	11
5:00 PM	1	0	12	0	0	0	0	0	0	1	0	0	0	5	0	0	19
5:15 PM	3	0	6	0	0	0	0	0	0	1	0	0	0	2	0	0	12
5:30 PM	0	0	7	0	0	0	0	0	0	0	0	0	0	2	0	0	9
5:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2
6:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	2
6:15 PM	1	0	1	0	0	0	0	0	0	1	0	0	0	2	0	0	5
6:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
6:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	2	0	0	0	0	0	0	0	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 :	11	0	55	0	0	0	0	0	0	18	0	0	2	33	0	0	119
APPROACH %'s :	16.67%	0.00%	83.33%	0.00%					0.00%	100.00%	0.00%	0.00%	5.71%	94.29%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	6	0	28	0	0	0	0	0	0	4	0	0	1	12	0	0	51
PEAK HR FACTOR :	0.50	0.000	0.583	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.250	0.600	0.000	0.000	0.671
	0.654								1.000				0.650				

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49 NB Ramps & Idaho Maryland Rd
City: Grass Valley
Control: 3 Way Stop Sign - NB/EB/WB

Project ID: 19-07290-005
Date: 8/28/2019

Bikes

NS/EW Streets:	SR 49 NB Ramps				SR 49 NB Ramps				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 :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.500
										0.500							

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	1	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	1	0	0	0	1	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	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
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	0	3	1	0	0	2	0	0	6
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	0	0	0	0	2	0	0	2
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	0	0	0	0	0	0	0	0	5	1	0	0	10	0	0	16
APPROACH %'s :									0.00%	83.33%	16.67%	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	1	0	0	0	3	0	0	4
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.375	0.000	0.000	0.500
										0.250				0.375			

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49 NB Ramps & Idaho Maryland Rd
City: Grass Valley

Project ID: 19-07290-005
Date: 8/28/2019

Pedestrians (Crosswalks)

NS/EW Streets:	SR 49 NB Ramps		SR 49 NB Ramps		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	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 :	**07:45 AM - 08:45 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	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	0	0	0	0	0	0
APPROACH %'s :									
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

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

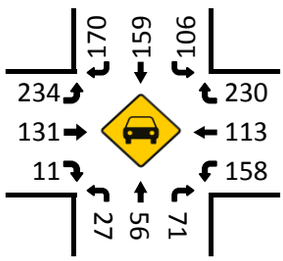
0

	AM	NOON	PM
TEV	1566	0	1853
PHF	0.90		0.95

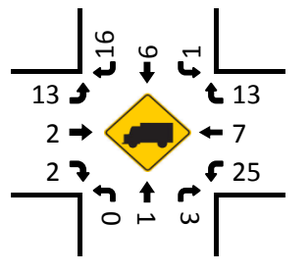
SR 49 SB Ramps — NORTHBOUND

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

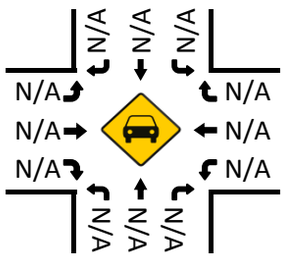
Cars (AM)



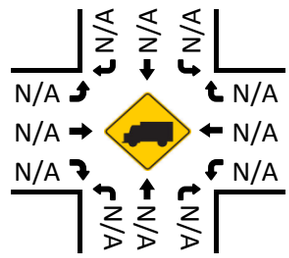
HT (AM)



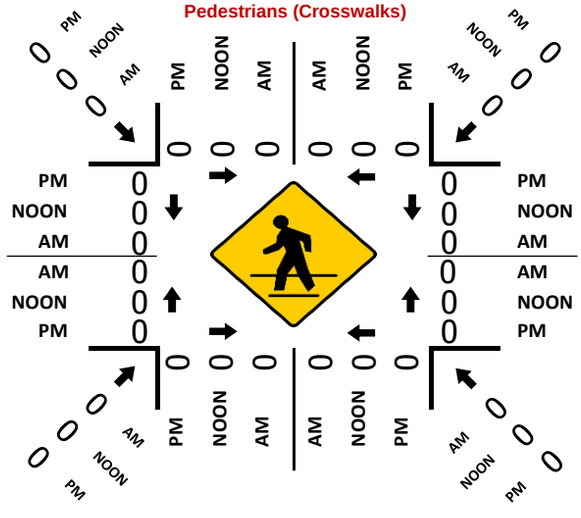
Cars (NOON)



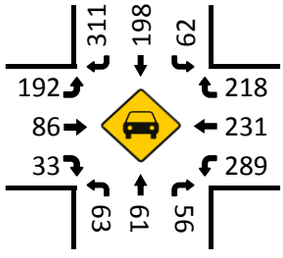
HT (NOON)



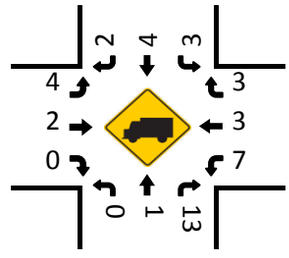
Pedestrians (Crosswalks)



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

E Main St/Nevada City Hwy & Brunswick Rd

Peak Hour Turning Movement Count

ID: 19-07290-007
City: Grass Valley

Day: Wednesday
Date: 08/28/2019

PEAK HOURS

AM	08:00 AM - 09:00 AM
NOON	NONE
PM	03:30 PM - 04:30 PM

COUNT PERIODS

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

E Main St/Nevada City Hwy — SOUTHBOUND

AM	0	183	289	0	487	AM
NOON	0	0	0	0	0	NOON
PM	3	209	485	0	715	PM

Brunswick Rd — EASTBOUND

AM	NOON	PM	
4	0	18	
0	0	0	0
6	0	5	0
7	0	5	0
12	0	7	0
AM	NOON	PM	

WESTBOUND — Brunswick Rd

PM	NOON	AM	
476	0	325	0
12	0	4	0
200	0	237	0
6	0	4	0
666	0	416	
PM	NOON	AM	

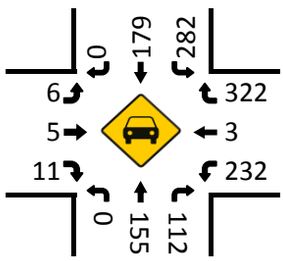
CONTROL: Signalized

TEV	1339 AM	0 NOON	1815 PM
PHF	0.89		0.94

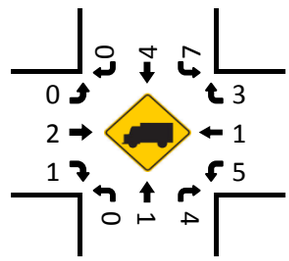
E Main St/Nevada City Hwy — NORTHBOUND

PM	416	0	3	234	170	PM
NOON	0	0	0	0	0	NOON
AM	432	0	0	156	116	AM

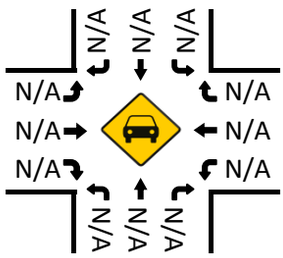
Cars (AM)



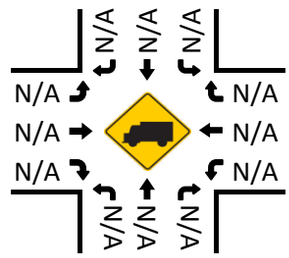
HT (AM)



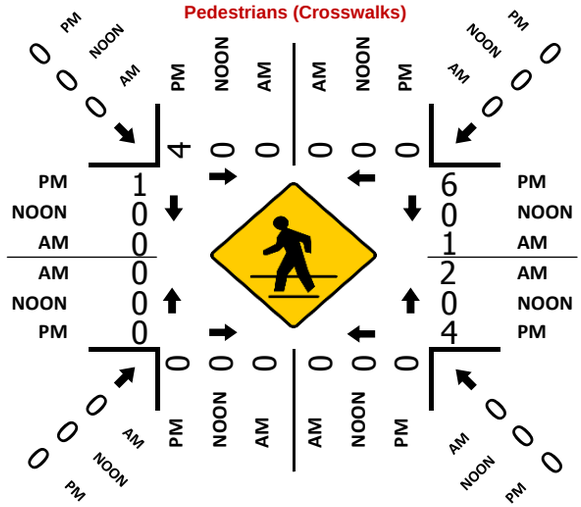
Cars (NOON)



HT (NOON)



Pedestrians (Crosswalks)


PM
NOON
AM
0
4
0
0
0
0
1
0
0
0
0

National Data & Surveying Services

Intersection Turning Movement Count

Location: E Main St/Nevada City Hwy & Brunswick Rd
City: Grass Valley
Control: Signalized

Project ID: 19-07290-007
Date: 8/28/2019

Total

NS/EW Streets:	E Main St/Nevada City Hwy				E Main St/Nevada City Hwy				Brunswick Rd				Brunswick 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	5	5	0	27	10	0	0	0	2	1	0	14	1	29	0	94
6:45 AM	1	17	7	0	32	16	0	0	0	1	0	0	26	2	36	0	138
7:00 AM	0	18	12	0	35	13	0	0	0	2	0	0	11	1	44	0	136
7:15 AM	2	26	11	0	45	16	1	0	0	0	2	0	25	1	46	0	175
7:30 AM	1	30	16	0	31	31	0	0	2	1	0	0	39	0	50	1	202
7:45 AM	2	30	26	0	40	41	1	0	1	1	2	0	60	1	64	1	270
8:00 AM	0	28	22	0	50	60	0	0	2	4	4	0	72	1	53	3	299
8:15 AM	0	42	27	0	74	43	0	0	1	0	1	0	58	0	76	1	323
8:30 AM	0	56	32	0	84	39	0	0	1	2	5	0	58	1	97	0	375
8:45 AM	0	30	35	0	81	41	0	0	2	1	2	0	49	2	99	0	342
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	6	282	193	0	499	310	2	0	9	14	17	0	412	10	594	6	2354
APPROACH %'s :	1.25%	58.63%	40.12%	0.00%	61.53%	38.22%	0.25%	0.00%	22.50%	35.00%	42.50%	0.00%	40.31%	0.98%	58.12%	0.59%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	156	116	0	289	183	0	0	6	7	12	0	237	4	325	4	1339
PEAK HR FACTOR :	0.000	0.696	0.829	0.000	0.860	0.763	0.000	0.000	0.750	0.438	0.600	0.000	0.823	0.500	0.821	0.333	0.893
		0.773				0.959				0.625				0.913			

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	2	61	36	0	125	56	1	0	2	1	4	0	49	5	125	1	468
3:45 PM	0	66	34	0	115	59	1	0	1	0	1	0	51	1	111	3	443
4:00 PM	1	56	48	0	134	49	0	0	1	3	0	0	50	4	134	1	481
4:15 PM	0	51	52	0	111	45	1	0	1	1	2	0	50	2	106	1	423
4:30 PM	0	47	51	0	112	41	0	0	1	1	2	0	62	3	113	0	433
4:45 PM	0	65	41	0	108	43	1	0	1	1	2	0	45	7	108	1	423
5:00 PM	0	55	39	0	122	51	3	0	2	2	0	0	48	6	115	0	443
5:15 PM	0	72	40	0	106	46	0	0	3	4	2	0	50	1	86	1	411
5:30 PM	0	56	35	0	100	51	0	0	2	3	1	0	50	1	83	0	382
5:45 PM	3	36	28	0	92	42	1	0	6	4	0	0	43	2	84	0	341
6:00 PM	0	39	32	0	111	41	0	0	0	2	2	0	35	3	67	1	333
6:15 PM	1	34	25	0	103	36	0	0	0	6	0	0	31	0	57	0	293
6:30 PM	0	27	16	0	73	40	0	0	1	0	0	0	38	2	62	1	260
6:45 PM	1	37	22	0	75	21	0	0	3	4	1	0	26	5	54	0	249
7:00 PM	0	30	20	0	86	27	0	0	5	1	1	0	29	4	56	1	260
7:15 PM	0	25	21	0	50	28	1	0	2	3	0	0	20	4	39	0	193
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	8	757	540	0	1623	676	9	0	31	36	18	0	677	50	1400	11	5836
APPROACH %'s :	0.61%	58.01%	41.38%	0.00%	70.32%	29.29%	0.39%	0.00%	36.47%	42.35%	21.18%	0.00%	31.67%	2.34%	65.48%	0.51%	
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	3	234	170	0	485	209	3	0	5	5	7	0	200	12	476	6	1815
PEAK HR FACTOR :	0.375	0.886	0.817	0.000	0.905	0.886	0.750	0.000	0.625	0.417	0.438	0.000	0.980	0.600	0.888	0.500	0.943
		0.969				0.952				0.607				0.918			

National Data & Surveying Services

Intersection Turning Movement Count

Location: E Main St/Nevada City Hwy & Brunswick Rd
City: Grass Valley
Control: Signalized

Project ID: 19-07290-007
Date: 8/28/2019

Cars

NS/EW Streets:	E Main St/Nevada City Hwy				E Main St/Nevada City Hwy				Brunswick Rd				Brunswick 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	5	5	0	27	10	0	0	0	2	1	0	14	1	26	0	91
6:45 AM	1	16	7	0	30	15	0	0	0	1	0	0	26	2	35	0	133
7:00 AM	0	16	12	0	34	12	0	0	0	2	0	0	11	1	42	0	130
7:15 AM	1	25	11	0	42	16	0	0	0	0	2	0	25	1	44	0	167
7:30 AM	1	30	16	0	30	30	0	0	2	1	0	0	38	0	48	1	197
7:45 AM	2	30	26	0	37	41	1	0	1	1	2	0	60	1	62	1	265
8:00 AM	0	27	20	0	49	59	0	0	2	2	3	0	70	0	53	3	288
8:15 AM	0	42	26	0	71	41	0	0	1	0	1	0	56	0	74	1	313
8:30 AM	0	56	32	0	83	38	0	0	1	2	5	0	57	1	96	0	371
8:45 AM	0	30	34	0	79	41	0	0	2	1	2	0	49	2	99	0	339
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	5	277	189	0	482	303	1	0	9	12	16	0	406	9	579	6	2294
APPROACH %'s :	1.06%	58.81%	40.13%	0.00%	61.32%	38.55%	0.13%	0.00%	24.32%	32.43%	43.24%	0.00%	40.60%	0.90%	57.90%	0.60%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	155	112	0	282	179	0	0	6	5	11	0	232	3	322	4	1311
PEAK HR FACTOR :	0.00	0.692	0.824	0.000	0.849	0.758	0.000	0.000	0.750	0.625	0.550	0.000	0.829	0.375	0.813	0.333	0.883
		0.759				0.952				0.688				0.911			

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	2	59	36	0	125	55	1	0	2	1	4	0	48	5	123	1	462
3:45 PM	0	65	34	0	115	58	1	0	1	0	1	0	51	1	110	3	440
4:00 PM	1	55	48	0	130	48	0	0	1	3	0	0	49	4	132	1	472
4:15 PM	0	50	52	0	110	45	1	0	1	1	2	0	50	2	106	1	421
4:30 PM	0	47	51	0	112	40	0	0	1	1	2	0	62	3	113	0	432
4:45 PM	0	65	40	0	108	42	1	0	1	1	2	0	45	7	107	1	420
5:00 PM	0	54	39	0	120	51	3	0	2	2	0	0	48	6	115	0	440
5:15 PM	0	72	40	0	106	46	0	0	3	4	2	0	49	1	86	1	410
5:30 PM	0	56	34	0	99	50	0	0	2	3	1	0	50	1	83	0	379
5:45 PM	3	36	28	0	92	41	1	0	6	4	0	0	43	2	84	0	340
6:00 PM	0	38	32	0	108	40	0	0	0	2	2	0	35	3	67	1	328
6:15 PM	1	34	25	0	103	36	0	0	0	6	0	0	31	0	57	0	293
6:30 PM	0	27	16	0	73	38	0	0	1	0	0	0	36	2	61	1	255
6:45 PM	1	37	22	0	74	21	0	0	3	4	1	0	25	5	53	0	246
7:00 PM	0	29	18	0	85	27	0	0	5	1	1	0	29	4	55	1	255
7:15 PM	0	25	21	0	50	27	1	0	2	3	0	0	20	4	39	0	192
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	8	749	536	0	1610	665	9	0	31	36	18	0	671	50	1391	11	5785
APPROACH %'s :	0.62%	57.93%	41.45%	0.00%	70.49%	29.12%	0.39%	0.00%	36.47%	42.35%	21.18%	0.00%	31.61%	2.36%	65.52%	0.52%	
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	3	229	170	0	480	206	3	0	5	5	7	0	198	12	471	6	1795
PEAK HR FACTOR :	0.38	0.881	0.817	0.000	0.923	0.888	0.750	0.000	0.625	0.417	0.438	0.000	0.971	0.600	0.892	0.500	0.951
		0.966				0.952				0.607				0.923			

National Data & Surveying Services

Intersection Turning Movement Count

Location: E Main St/Nevada City Hwy & Brunswick Rd
City: Grass Valley
Control: Signalized

Project ID: 19-07290-007
Date: 8/28/2019

HT

NS/EW Streets:	E Main St/Nevada City Hwy				E Main St/Nevada City Hwy				Brunswick Rd				Brunswick 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	3	0	3
6:45 AM	0	1	0	0	2	1	0	0	0	0	0	0	0	0	1	0	5
7:00 AM	0	2	0	0	1	1	0	0	0	0	0	0	0	0	2	0	6
7:15 AM	1	1	0	0	3	0	1	0	0	0	0	0	0	0	2	0	8
7:30 AM	0	0	0	0	1	1	0	0	0	0	0	0	1	0	2	0	5
7:45 AM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	2	0	5
8:00 AM	0	1	2	0	1	1	0	0	0	2	1	0	2	1	0	0	11
8:15 AM	0	0	1	0	3	2	0	0	0	0	0	0	2	0	2	0	10
8:30 AM	0	0	0	0	1	1	0	0	0	0	0	0	1	0	1	0	4
8:45 AM	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	5	4	0	17	7	1	0	0	2	1	0	6	1	15	0	60
APPROACH %'s :	10.00%	50.00%	40.00%	0.00%	68.00%	28.00%	4.00%	0.00%	0.00%	66.67%	33.33%	0.00%	27.27%	4.55%	68.18%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	1	4	0	7	4	0	0	0	2	1	0	5	1	3	0	28
PEAK HR FACTOR :	0.000	0.250	0.500	0.000	0.583	0.500	0.000	0.000	0.000	0.250	0.250	0.000	0.625	0.250	0.375	0.000	0.636
		0.417				0.550				0.250				0.563			

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	2	0	0	0	1	0	0	0	0	0	0	1	0	2	0	6
3:45 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	3
4:00 PM	0	1	0	0	4	1	0	0	0	0	0	0	1	0	2	0	9
4:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	3
5:00 PM	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
5:30 PM	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	3
5:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:00 PM	0	1	0	0	3	1	0	0	0	0	0	0	0	0	0	0	5
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	2	0	0	0	0	0	0	2	0	1	0	5
6:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	3
7:00 PM	0	1	2	0	1	0	0	0	0	0	0	0	0	0	1	0	5
7:15 PM	0	0	0	0	0	1	0	0	0	0	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 :	0	8	4	0	13	11	0	0	0	0	0	0	6	0	9	0	51
APPROACH %'s :	0.00%	66.67%	33.33%	0.00%	54.17%	45.83%	0.00%	0.00%					40.00%	0.00%	60.00%	0.00%	
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	0	5	0	0	5	3	0	0	0	0	0	0	2	0	5	0	20
PEAK HR FACTOR :	0.00	0.625	0.000	0.000	0.313	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.625	0.000	0.556
		0.625				0.400								0.583			

National Data & Surveying Services

Intersection Turning Movement Count

Location: E Main St/Nevada City Hwy & Brunswick Rd
City: Grass Valley
Control: Signalized

Project ID: 19-07290-007
Date: 8/28/2019

Bikes

NS/EW Streets:	E Main St/Nevada City Hwy				E Main St/Nevada City Hwy				Brunswick Rd				Brunswick 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	2	0	0	0	0	0	0	0	0	0	0	2
7:30 AM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
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	1	4	0	0	0	0	2	0	0	0	0	0	8
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	20.00%	80.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%					
PEAK HR :	**08:00 AM - 09:00 AM**																TOTAL
PEAK HR VOL :	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	2
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.500
						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	1	0	0	0	0	0	0	0	0	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	1	0	0	1	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	0	0	0	0
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	3
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	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
6:30 PM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
6:45 PM	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	3
7:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
7:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	6	1	0	3	2	0	0	0	0	3	0	3	0	1	0	19
APPROACH %'s :	0.00%	85.71%	14.29%	0.00%	60.00%	40.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	75.00%	0.00%	25.00%	0.00%	
PEAK HR :	**03:30 PM - 04:30 PM**																TOTAL
PEAK HR VOL :	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3
PEAK HR FACTOR :	0.00	0.500	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	0.000	0.375
		0.500				0.250											

National Data & Surveying Services

Intersection Turning Movement Count

Location: E Main St/Nevada City Hwy & Brunswick Rd
City: Grass Valley

Project ID: 19-07290-007
Date: 8/28/2019

Pedestrians (Crosswalks)

NS/EW Streets:	E Main St/Nevada City Hwy		E Main St/Nevada City Hwy		Brunswick Rd		Brunswick Rd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:30 AM	0	1	0	0	1	0	0	0	2
6:45 AM	0	0	0	0	1	0	0	0	1
7:00 AM	0	0	0	0	1	0	0	0	1
7:15 AM	0	0	0	0	1	1	0	0	2
7:30 AM	1	0	0	0	1	2	0	0	4
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	1	0	0	0	1
8:30 AM	0	0	0	0	1	1	0	0	2
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	1	1	0	0	7	4	0	0	13
APPROACH %'s :	50.00%	50.00%			63.64%	36.36%			
PEAK HR :	**08:00 AM - 09:00 AM**								TOTAL
PEAK HR VOL :	0	0	0	0	2	1	0	0	3
PEAK HR FACTOR :					0.500	0.250			0.375
					0.375				

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
3:30 PM	1	0	0	0	0	1	0	0	2
3:45 PM	2	0	0	0	1	1	0	0	4
4:00 PM	1	0	0	0	0	2	0	1	4
4:15 PM	0	0	0	0	3	2	0	0	5
4:30 PM	1	0	0	0	1	0	0	0	2
4:45 PM	1	0	0	0	1	2	0	0	4
5:00 PM	1	0	0	0	2	1	0	0	4
5:15 PM	2	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	2	0	0	2
5:45 PM	1	0	0	0	0	1	0	0	2
6:00 PM	1	0	0	0	0	1	1	0	3
6:15 PM	0	0	0	0	0	0	0	1	1
6:30 PM	1	1	0	0	0	1	0	0	3
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 :	12	1	0	0	8	14	1	2	38
APPROACH %'s :	92.31%	7.69%			36.36%	63.64%	33.33%	66.67%	
PEAK HR :	**03:30 PM - 04:30 PM**								TOTAL
PEAK HR VOL :	4	0	0	0	4	6	0	1	15
PEAK HR FACTOR :	0.500				0.333	0.750		0.250	0.750
	0.500				0.500		0.250		

Prepared by National Data & Surveying Services

SR 49 SB Ramps & Brunswick Rd

Peak Hour Turning Movement Count

ID: 19-07290-008
City: Grass Valley

Day: Wednesday
Date: 08/28/2019

PEAK HOURS

AM: 08:00 AM - 09:00 AM
NOON: NONE
PM: 04:15 PM - 05:15 PM

COUNT PERIODS

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

SR 49 SB Ramps — SOUTHBOUND

AM	121	40	249	0	207	AM
NOON	0	0	0	0	0	NOON
PM	124	53	354	0	484	PM

EASTBOUND — Brunswick Rd

AM	NOON	PM	
608	0	697	⇦
0	0	0	↶ 0
0	0	0	↱ 0
274	0	362	→ 0
21	0	50	↴ 0
AM	NOON	PM	

WESTBOUND — Brunswick Rd

PM	NOON	AM	
484	0	207	0 ↰
542	0	469	0 ←
112	0	102	0 ↰
0	0	0	0 ↶
859	0	614	⇨
PM	NOON	AM	

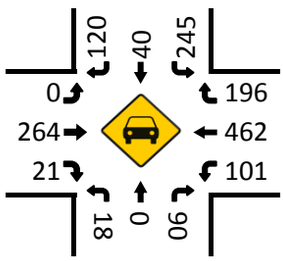
CONTROL: Signalized

TEV	1592	0	2255
	AM	NOON	PM
PHF	0.93		0.92

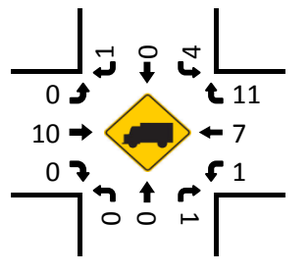
SR 49 SB Ramps — NORTHBOUND

PM	215	0	31	0	143	PM
NOON	0	0	0	0	0	NOON
AM	163	0	18	0	91	AM

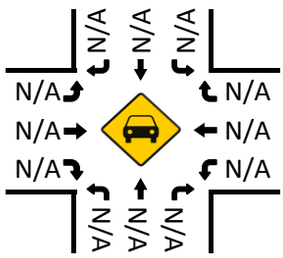
Cars (AM)



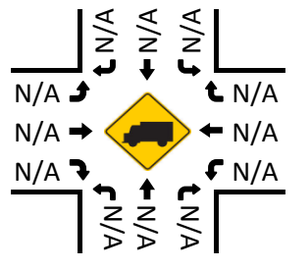
HT (AM)



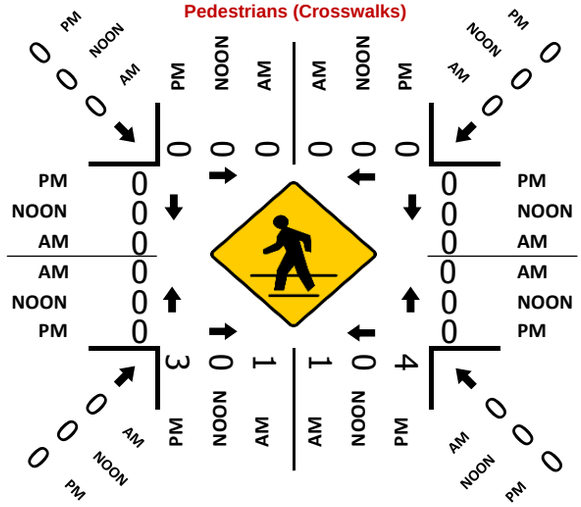
Cars (NOON)



HT (NOON)



Pedestrians (Crosswalks)


PM
NOON
AM
0
0
0

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49 SB Ramps & Brunswick Rd
City: Grass Valley
Control: Signalized

Project ID: 19-07290-008
Date: 8/28/2019

Total

NS/EW Streets:	SR 49 SB Ramps					SR 49 SB Ramps					Brunswick Rd					Brunswick Rd				
AM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	SL2	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
6:30 AM	1	0	2	0	1	18	2	8	0	0	0	26	2	0	11	6	35	25	0	137
6:45 AM	1	0	1	0	2	42	2	13	0	0	0	13	0	0	19	10	57	33	0	193
7:00 AM	2	0	2	0	4	32	8	6	0	1	0	34	4	0	17	10	56	36	0	212
7:15 AM	1	0	6	0	7	42	4	15	0	0	0	29	4	0	20	12	61	23	0	224
7:30 AM	2	0	10	0	2	32	7	18	0	0	0	35	2	0	18	17	83	55	0	281
7:45 AM	2	0	9	0	7	36	9	34	0	0	0	61	5	0	18	15	95	59	0	350
8:00 AM	4	0	23	0	7	62	14	27	0	1	0	48	3	0	31	25	110	40	0	395
8:15 AM	4	0	23	0	12	68	11	24	0	0	0	61	1	0	42	35	108	58	0	447
8:30 AM	5	0	17	0	10	49	8	41	0	0	0	85	9	0	32	15	129	50	0	450
8:45 AM	5	0	28	0	8	70	7	29	0	0	0	80	8	0	34	27	122	59	0	477
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	SL2	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	27	0	121	0	60	451	72	215	0	2	0	472	38	0	242	172	856	438	0	3166
APPROACH %'s :	12.98%	0.00%	58.17%	0.00%	28.85%	60.95%	9.73%	29.05%	0.00%	0.27%	0.00%	62.77%	5.05%	0.00%	32.18%	11.73%	58.39%	29.88%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																			TOTAL
PEAK HR VOL :	18	0	91	0	37	249	40	121	0	1	0	274	21	0	139	102	469	207	0	1769
PEAK HR FACTOR :	0.900	0.000	0.813	0.000	0.771	0.889	0.714	0.738	0.000	0.250	0.000	0.806	0.583	0.000	0.827	0.729	0.909	0.877	0.000	0.927
			0.890					0.969					0.861					0.935		

PM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	SL2	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
3:30 PM	9	0	39	0	22	74	5	33	0	0	0	98	12	0	46	35	145	95	0	613
3:45 PM	11	0	30	0	16	65	8	39	0	0	0	72	11	0	71	28	133	95	0	579
4:00 PM	10	0	27	0	15	98	8	28	0	0	0	114	6	0	55	31	166	98	0	656
4:15 PM	3	0	35	0	21	86	12	28	0	0	0	85	21	0	67	31	143	107	0	639
4:30 PM	7	0	37	0	20	80	22	30	0	0	0	84	13	0	60	25	131	117	0	626
4:45 PM	13	0	24	0	21	77	10	28	0	0	0	96	5	0	58	28	136	120	0	616
5:00 PM	8	0	47	0	28	111	9	38	0	1	0	97	11	0	49	28	132	140	0	699
5:15 PM	7	0	27	0	27	64	14	23	0	0	0	77	8	0	68	31	127	107	0	580
5:30 PM	12	0	28	0	17	46	8	33	0	0	0	89	9	0	55	26	109	105	0	537
5:45 PM	5	0	15	0	22	54	6	30	0	0	0	74	6	0	42	14	99	100	0	467
6:00 PM	4	0	30	0	15	55	9	21	0	0	0	84	13	0	55	27	90	78	0	481
6:15 PM	6	0	23	0	21	53	11	14	0	1	0	67	6	0	58	21	79	60	0	420
6:30 PM	6	0	27	0	25	46	3	27	0	0	0	53	5	0	32	20	69	63	0	376
6:45 PM	4	0	12	0	16	44	6	21	0	0	0	58	9	0	34	18	66	50	0	338
7:00 PM	6	0	18	0	8	39	4	9	0	0	0	65	7	0	42	23	91	43	0	355
7:15 PM	4	0	16	0	19	41	8	11	0	1	0	57	2	0	27	24	53	39	0	302
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	SL2	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	115	0	435	0	313	1033	143	413	0	3	0	1270	144	0	819	410	1769	1417	0	8284
APPROACH %'s :	13.33%	0.00%	50.41%	0.00%	36.27%	64.89%	8.98%	25.94%	0.00%	0.19%	0.00%	56.87%	6.45%	0.00%	36.68%	11.40%	49.19%	39.40%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																			TOTAL
PEAK HR VOL :	31	0	143	0	90	354	53	124	0	1	0	362	50	0	234	112	542	484	0	2580
PEAK HR FACTOR :	0.596	0.000	0.761	0.000	0.804	0.797	0.602	0.816	0.000	0.250	0.000	0.933	0.595	0.000	0.873	0.903	0.948	0.864	0.000	0.923
			0.795					0.836					0.934					0.948		

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49 SB Ramps & Brunswick Rd
City: Grass Valley
Control: Signalized

Project ID: 19-07290-008
Date: 8/28/2019

Cars

AM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND				
NS/EW Streets:	SR 49 SB Ramps					SR 49 SB Ramps					Brunswick Rd					Brunswick Rd				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	SL2	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
6:30 AM	1	0	2	0	1	18	2	8	0	0	0	26	2	0	11	6	32	24	0	133
6:45 AM	1	0	1	0	2	41	2	13	0	0	0	12	0	0	18	10	56	25	0	181
7:00 AM	2	0	2	0	4	29	8	6	0	1	0	33	4	0	17	10	54	33	0	203
7:15 AM	1	0	6	0	7	42	4	15	0	0	0	28	4	0	18	12	59	22	0	218
7:30 AM	2	0	10	0	1	30	7	18	0	0	0	34	2	0	18	17	81	48	0	268
7:45 AM	2	0	9	0	7	36	9	34	0	0	0	60	5	0	17	15	92	58	0	344
8:00 AM	4	0	23	0	7	61	14	26	0	1	0	43	3	0	30	25	109	37	0	383
8:15 AM	4	0	23	0	11	66	11	24	0	0	0	58	1	0	41	35	104	55	0	433
8:30 AM	5	0	17	0	10	49	8	41	0	0	0	85	9	0	31	14	127	48	0	444
8:45 AM	5	0	27	0	8	69	7	29	0	0	0	78	8	0	33	27	122	56	0	469
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	SL2	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	27	0	120	0	58	441	72	214	0	2	0	457	38	0	234	171	836	406	0	3076
APPROACH %'s :	13.17%	0.00%	58.54%	0.00%	28.29%	60.49%	9.88%	29.36%	0.00%	0.27%	0.00%	62.69%	5.21%	0.00%	32.10%	12.10%	59.16%	28.73%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																			TOTAL
PEAK HR VOL :	18	0	90	0	36	245	40	120	0	1	0	264	21	0	135	101	462	196	0	1729
PEAK HR FACTOR :	0.90	0.000	0.833	0.000	0.818	0.888	0.714	0.732	0.000	0.250	0.000	0.776	0.583	0.000	0.823	0.721	0.909	0.875	0.000	0.922
			0.900					0.967					0.840					0.926		

PM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	SL2	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
3:30 PM	8	0	38	0	22	73	5	32	0	0	0	98	12	0	46	35	143	91	0	603
3:45 PM	11	0	30	0	16	63	8	39	0	0	0	72	11	0	71	28	132	94	0	575
4:00 PM	10	0	27	0	15	94	8	28	0	0	0	111	6	0	54	31	165	97	0	646
4:15 PM	3	0	35	0	21	82	12	28	0	0	0	85	21	0	67	30	143	106	0	633
4:30 PM	7	0	35	0	20	79	21	30	0	0	0	84	13	0	60	25	131	115	0	620
4:45 PM	13	0	24	0	21	75	10	28	0	0	0	96	5	0	58	28	136	118	0	612
5:00 PM	8	0	47	0	27	110	9	38	0	1	0	96	11	0	48	28	132	140	0	695
5:15 PM	7	0	27	0	27	62	13	23	0	0	0	77	8	0	68	31	125	105	0	573
5:30 PM	11	0	28	0	16	45	8	33	0	0	0	88	8	0	55	26	108	105	0	531
5:45 PM	5	0	15	0	21	53	6	30	0	0	0	73	6	0	42	14	98	100	0	463
6:00 PM	4	0	30	0	15	53	9	21	0	0	0	82	13	0	55	27	90	78	0	477
6:15 PM	6	0	23	0	21	52	11	14	0	1	0	67	6	0	58	21	79	60	0	419
6:30 PM	6	0	27	0	25	45	3	26	0	0	0	53	5	0	32	19	67	63	0	371
6:45 PM	3	0	12	0	16	42	6	21	0	0	0	58	9	0	34	18	66	50	0	335
7:00 PM	6	0	18	0	8	37	4	9	0	0	0	60	7	0	42	23	90	43	0	347
7:15 PM	4	0	16	0	19	40	8	11	0	1	0	57	2	0	27	24	53	39	0	301
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	SL2	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	112	0	432	0	310	1005	141	411	0	3	0	1257	143	0	817	408	1758	1404	0	8201
APPROACH %'s :	13.11%	0.00%	50.59%	0.00%	36.30%	64.42%	9.04%	26.35%	0.00%	0.19%	0.00%	56.70%	6.45%	0.00%	36.85%	11.43%	49.24%	39.33%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																			TOTAL
PEAK HR VOL :	31	0	141	0	89	346	52	124	0	1	0	361	50	0	233	111	542	479	0	2560
PEAK HR FACTOR :	0.60	0.000	0.750	0.000	0.824	0.786	0.619	0.816	0.000	0.250	0.000	0.940	0.595	0.000	0.869	0.925	0.948	0.855	0.000	0.921
			0.796					0.828					0.931					0.943		

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49 SB Ramps & Brunswick Rd
City: Grass Valley
Control: Signalized

Project ID: 19-07290-008
Date: 8/28/2019

HT

NS/EW Streets:	SR 49 SB Ramps					SR 49 SB Ramps					Brunswick Rd					Brunswick Rd				
AM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	SL2	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	4
6:45 AM	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	1	8	0	12
7:00 AM	0	0	0	0	0	3	0	0	0	0	0	1	0	0	0	0	2	3	0	9
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	2	1	0	6
7:30 AM	0	0	0	0	1	2	0	0	0	0	0	1	0	0	0	0	2	7	0	13
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	3	1	0	6
8:00 AM	0	0	0	0	0	1	0	1	0	0	0	5	0	0	1	0	1	3	0	12
8:15 AM	0	0	0	0	1	2	0	0	0	0	0	3	0	0	1	0	4	3	0	14
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	0	6
8:45 AM	0	0	1	0	0	1	0	0	0	0	0	2	0	0	1	0	0	3	0	8
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	SL2	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	1	0	2	10	0	1	0	0	0	15	0	0	8	1	20	32	0	90
APPROACH %'s :	0.00%	0.00%	33.33%	0.00%	66.67%	90.91%	0.00%	9.09%	0.00%	0.00%	0.00%	65.22%	0.00%	0.00%	34.78%	1.89%	37.74%	60.38%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																			TOTAL
PEAK HR VOL :	0	0	1	0	1	4	0	1	0	0	0	10	0	0	4	1	7	11	0	40
PEAK HR FACTOR :	0.000	0.000	0.250	0.000	0.250	0.500	0.000	0.250	0.000	0.000	0.000	0.500	0.000	0.000	1.000	0.250	0.438	0.917	0.000	0.714
			0.500					0.625					0.583					0.679		

PM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	SL2	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
3:30 PM	1	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	2	4	0	10
3:45 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	1	0	4
4:00 PM	0	0	0	0	0	4	0	0	0	0	0	3	0	0	1	0	1	1	0	10
4:15 PM	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	1	0	1	0	6
4:30 PM	0	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	0	6
4:45 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	4
5:00 PM	0	0	0	0	1	1	0	0	0	0	0	1	0	0	1	0	0	0	0	4
5:15 PM	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	2	2	0	7
5:30 PM	1	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	1	0	0	6
5:45 PM	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	1	0	0	4
6:00 PM	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	4
6:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	2	0	0	5
6:45 PM	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3
7:00 PM	0	0	0	0	0	2	0	0	0	0	0	5	0	0	0	0	1	0	0	8
7:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	SL2	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	3	0	3	0	3	28	2	2	0	0	0	13	1	0	2	2	11	13	0	83
APPROACH %'s :	33.33%	0.00%	33.33%	0.00%	33.33%	87.50%	6.25%	6.25%	0.00%	0.00%	0.00%	81.25%	6.25%	0.00%	12.50%	7.69%	42.31%	50.00%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																			TOTAL
PEAK HR VOL :	0	0	2	0	1	8	1	0	0	0	0	1	0	0	1	1	0	5	0	20
PEAK HR FACTOR :	0.00	0.000	0.250	0.000	0.250	0.500	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.250	0.000	0.625	0.000	0.833
			0.375					0.563					0.250					0.750		

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49 SB Ramps & Brunswick Rd
City: Grass Valley
Control: Signalized

Project ID: 19-07290-008
Date: 8/28/2019

Bikes

NS/EW Streets:	SR 49 SB Ramps					SR 49 SB Ramps					Brunswick Rd					Brunswick Rd				
AM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	SL2	EL	ET	ER	EU	ET2	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	0	0	0
6:45 AM	0	0	0	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	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	1	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	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	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	NR2	SL	ST	SR	SU	SL2	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
APPROACH %'s :											0.00%	100.00%	0.00%	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	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	SL2	EL	ET	ER	EU	ET2	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	0	0	0
3:45 PM	0	0	0	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	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	1	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	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	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
6:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2
6:15 PM	0	0	0	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	0	0	1	0	0	0	0	0	0	0	1
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	SL2	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0	1	3	0	0	8
APPROACH %'s :						0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	25.00%	75.00%	0.00%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																			TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
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	0.250	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: SR 49 SB Ramps & Brunswick Rd
City: Grass Valley

Project ID: 19-07290-008
Date: 8/28/2019

Pedestrians (Crosswalks)

NS/EW Streets:	SR 49 SB Ramps		SR 49 SB Ramps		Brunswick Rd		Brunswick Rd				
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		EAST LEG 2		
	EB	WB	EB	WB	NB	SB	NB	SB	NB	SB	TOTAL
6:30 AM	0	0	0	0	0	0	0	0	1	0	1
6:45 AM	0	0	0	1	0	0	0	0	0	0	1
7:00 AM	0	0	0	0	0	0	0	0	0	1	1
7:15 AM	0	0	1	1	0	0	0	0	1	1	4
7:30 AM	0	0	0	1	0	0	0	0	0	1	2
7:45 AM	0	0	0	0	0	0	0	0	1	1	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	1	1	0	0	0	0	2	0	4
8:30 AM	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
	EB	WB	EB	WB	NB	SB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	2	4	0	0	0	0	5	4	15
APPROACH %'s :			33.33%	66.67%					55.56%	44.44%	
PEAK HR :	**08:00 AM - 09:00 AM**										TOTAL
PEAK HR VOL :	0	0	1	1	0	0	0	0	2	0	4
PEAK HR FACTOR :			0.250	0.250					0.250		0.250
			0.250						0.250		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		EAST LEG 2		
	EB	WB	EB	WB	NB	SB	NB	SB	NB	SB	TOTAL
3:30 PM	1	0	1	0	0	0	0	0	0	0	2
3:45 PM	0	0	1	0	0	0	0	0	0	1	2
4:00 PM	0	0	2	0	0	0	0	0	0	0	2
4:15 PM	0	0	0	1	0	0	0	0	0	0	1
4:30 PM	0	0	2	1	0	0	0	0	2	0	5
4:45 PM	0	0	1	1	0	0	0	0	0	0	2
5:00 PM	0	0	0	1	0	0	0	0	0	0	1
5:15 PM	0	0	3	0	0	0	0	0	0	0	3
5:30 PM	0	0	2	2	0	0	0	0	0	0	4
5:45 PM	0	1	0	0	0	0	0	0	0	0	1
6:00 PM	1	0	1	0	0	0	0	0	0	1	3
6:15 PM	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	1	0	0	0	0	0	0	1
	EB	WB	EB	WB	NB	SB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	2	1	13	7	0	0	0	0	2	2	27
APPROACH %'s :	66.67%	33.33%	65.00%	35.00%					50.00%	50.00%	
PEAK HR :	**04:15 PM - 05:15 PM**										TOTAL
PEAK HR VOL :	0	0	3	4	0	0	0	0	2	0	9
PEAK HR FACTOR :			0.375	1.000					0.250		0.450
			0.583						0.250		

Prepared by National Data & Surveying Services

SR 49 NB Ramps & Brunswick Rd

Peak Hour Turning Movement Count

ID: 19-07290-009
City: Grass Valley

Day: Wednesday
Date: 08/28/2019

PEAK HOURS

AM: 08:00 AM - 09:00 AM
NOON: NONE
PM: 03:45 PM - 04:45 PM

COUNT PERIODS

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

SR 49 NB Ramps — SOUTHBOUND

AM	0	0	0	0	230	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	461	PM

Brunswick Rd — EASTBOUND

AM	NOON	PM	
783	0	1111	⇦
0	0	0	↶ 0
0	0	0	↱ 0
541	0	721	→ 0
80	0	105	↴ 0
AM	NOON	PM	

WESTBOUND — Brunswick Rd

PM	NOON	AM	
461	0	230	0 ↰
877	0	531	0 ←
0	0	0	0 ↰
0	0	0	0 ↰
1195	0	956	⇨
PM	NOON	AM	

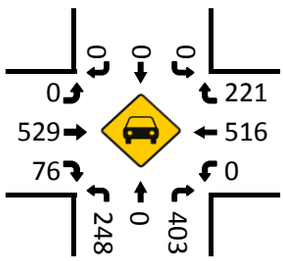
CONTROL: Signalized

TEV	2049 AM	0 NOON	2872 PM
PHF	0.92		0.97

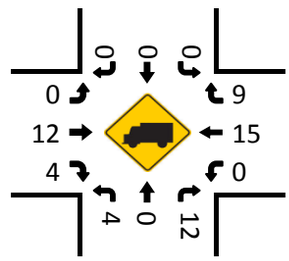
NORTHBOUND — SR 49 NB Ramps

PM	105	0	234	0	474	PM
NOON	0	0	0	0	0	NOON
AM	80	0	252	0	415	AM

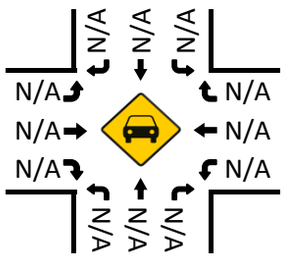
Cars (AM)



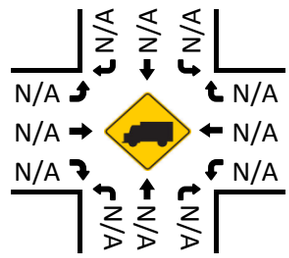
HT (AM)



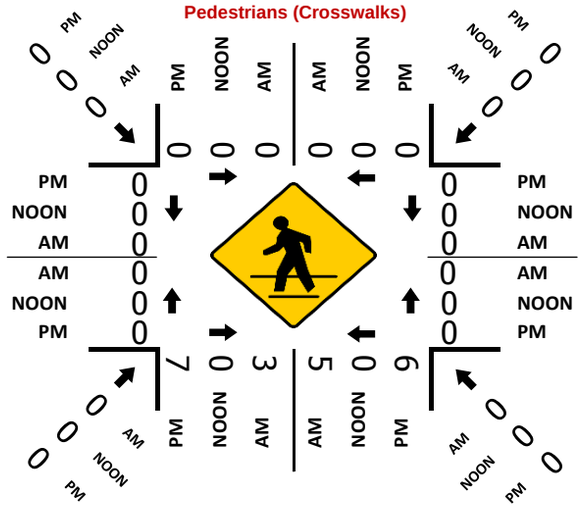
Cars (NOON)



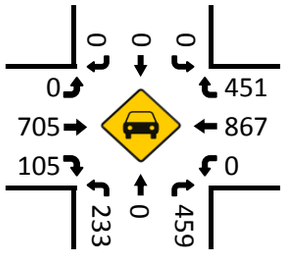
HT (NOON)



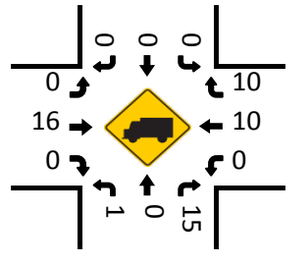
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49 NB Ramps & Brunswick Rd
City: Grass Valley
Control: Signalized

Project ID: 19-07290-009
Date: 8/28/2019

Total

NS/EW Streets:	SR 49 NB Ramps				SR 49 NB Ramps				Brunswick Rd				Brunswick 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	22	0	38	0	0	0	0	0	0	38	6	0	0	45	26	0	175
6:45 AM	33	0	64	0	0	0	0	0	0	62	3	0	0	66	50	0	278
7:00 AM	28	0	48	0	0	0	0	0	0	54	6	0	0	71	34	0	241
7:15 AM	31	0	62	0	0	0	0	0	0	68	10	0	0	64	29	0	264
7:30 AM	36	0	77	0	0	0	0	0	0	72	9	0	0	125	42	0	361
7:45 AM	44	0	111	0	0	0	0	0	0	92	11	0	0	122	68	0	448
8:00 AM	60	0	90	0	0	0	0	0	0	118	17	0	0	118	59	0	462
8:15 AM	64	0	115	0	0	0	0	0	0	132	25	0	0	138	63	0	537
8:30 AM	55	0	99	0	0	0	0	0	0	127	19	0	0	138	54	0	492
8:45 AM	73	0	111	0	0	0	0	0	0	164	19	0	0	137	54	0	558
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	446	0	815	0	0	0	0	0	0	927	125	0	0	1024	479	0	3816
APPROACH %'s :	35.37%	0.00%	64.63%	0.00%					0.00%	88.12%	11.88%	0.00%	0.00%	68.13%	31.87%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	252	0	415	0	0	0	0	0	0	541	80	0	0	531	230	0	2049
PEAK HR FACTOR :	0.863	0.000	0.902	0.000	0.000	0.000	0.000	0.000	0.000	0.825	0.800	0.000	0.000	0.962	0.913	0.000	0.918
	0.906								0.848				0.947				

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	64	0	127	0	0	0	0	0	0	172	25	0	0	206	92	0	686
3:45 PM	51	0	139	0	0	0	0	0	0	152	30	0	0	211	121	0	704
4:00 PM	74	0	117	0	0	0	0	0	0	204	23	0	0	216	110	0	744
4:15 PM	51	0	97	0	0	0	0	0	0	195	25	0	0	237	112	0	717
4:30 PM	58	0	121	0	0	0	0	0	0	170	27	0	0	213	118	0	707
4:45 PM	59	0	98	0	0	0	0	0	0	172	30	0	0	213	86	0	658
5:00 PM	47	0	92	0	0	0	0	0	0	202	50	0	0	256	98	0	745
5:15 PM	57	0	109	0	0	0	0	0	0	157	19	0	0	220	92	0	654
5:30 PM	44	0	90	0	0	0	0	0	0	135	26	0	0	182	85	0	562
5:45 PM	37	0	97	0	0	0	0	0	0	124	18	0	0	185	74	0	535
6:00 PM	42	0	61	0	0	0	0	0	0	134	24	0	0	149	65	0	475
6:15 PM	34	0	70	0	0	0	0	0	0	124	26	0	0	127	66	0	447
6:30 PM	34	0	49	0	0	0	0	0	0	101	20	0	0	110	59	0	373
6:45 PM	44	0	54	0	0	0	0	0	0	101	19	0	0	95	57	0	370
7:00 PM	37	0	49	0	0	0	0	0	0	109	16	0	0	118	45	0	374
7:15 PM	29	0	45	0	0	0	0	0	0	92	14	0	0	91	41	0	312
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	762	0	1415	0	0	0	0	0	0	2344	392	0	0	2829	1321	0	9063
APPROACH %'s :	35.00%	0.00%	65.00%	0.00%					0.00%	85.67%	14.33%	0.00%	0.00%	68.17%	31.83%	0.00%	
PEAK HR :	03:45 PM - 04:45 PM																TOTAL
PEAK HR VOL :	234	0	474	0	0	0	0	0	0	721	105	0	0	877	461	0	2872
PEAK HR FACTOR :	0.791	0.000	0.853	0.000	0.000	0.000	0.000	0.000	0.000	0.884	0.875	0.000	0.000	0.925	0.952	0.000	0.965
	0.927								0.910				0.958				

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49 NB Ramps & Brunswick Rd
City: Grass Valley
Control: Signalized

Project ID: 19-07290-009
Date: 8/28/2019

Cars

NS/EW Streets:	SR 49 NB Ramps				SR 49 NB Ramps				Brunswick Rd				Brunswick 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	20	0	36	0	0	0	0	0	0	38	6	0	0	42	24	0	166
6:45 AM	32	0	63	0	0	0	0	0	0	60	3	0	0	59	48	0	265
7:00 AM	28	0	45	0	0	0	0	0	0	50	6	0	0	66	33	0	228
7:15 AM	30	0	62	0	0	0	0	0	0	67	10	0	0	61	28	0	258
7:30 AM	34	0	75	0	0	0	0	0	0	69	9	0	0	119	42	0	348
7:45 AM	42	0	108	0	0	0	0	0	0	92	10	0	0	120	62	0	434
8:00 AM	60	0	88	0	0	0	0	0	0	112	17	0	0	114	57	0	448
8:15 AM	62	0	108	0	0	0	0	0	0	128	23	0	0	134	61	0	516
8:30 AM	54	0	97	0	0	0	0	0	0	126	19	0	0	132	50	0	478
8:45 AM	72	0	110	0	0	0	0	0	0	163	17	0	0	136	53	0	551
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	434	0	792	0	0	0	0	0	0	905	120	0	0	983	458	0	3692
APPROACH %'s :	35.40%	0.00%	64.60%	0.00%					0.00%	88.29%	11.71%	0.00%	0.00%	68.22%	31.78%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	248	0	403	0	0	0	0	0	0	529	76	0	0	516	221	0	1993
PEAK HR FACTOR :	0.86	0.000	0.916	0.000	0.000	0.000	0.000	0.000	0.000	0.811	0.826	0.000	0.000	0.949	0.906	0.000	0.904
	0.894								0.840				0.945				

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	63	0	124	0	0	0	0	0	0	170	25	0	0	202	92	0	676
3:45 PM	51	0	135	0	0	0	0	0	0	150	30	0	0	209	119	0	694
4:00 PM	73	0	110	0	0	0	0	0	0	197	23	0	0	214	109	0	726
4:15 PM	51	0	96	0	0	0	0	0	0	191	25	0	0	234	111	0	708
4:30 PM	58	0	118	0	0	0	0	0	0	167	27	0	0	210	112	0	692
4:45 PM	59	0	97	0	0	0	0	0	0	170	30	0	0	213	86	0	655
5:00 PM	47	0	91	0	0	0	0	0	0	200	50	0	0	256	96	0	740
5:15 PM	56	0	109	0	0	0	0	0	0	155	19	0	0	217	92	0	648
5:30 PM	44	0	90	0	0	0	0	0	0	134	26	0	0	181	83	0	558
5:45 PM	37	0	97	0	0	0	0	0	0	121	18	0	0	184	72	0	529
6:00 PM	42	0	61	0	0	0	0	0	0	130	24	0	0	149	65	0	471
6:15 PM	34	0	70	0	0	0	0	0	0	123	26	0	0	127	66	0	446
6:30 PM	32	0	49	0	0	0	0	0	0	100	20	0	0	109	59	0	369
6:45 PM	44	0	51	0	0	0	0	0	0	98	19	0	0	95	56	0	363
7:00 PM	36	0	48	0	0	0	0	0	0	103	16	0	0	118	42	0	363
7:15 PM	29	0	43	0	0	0	0	0	0	91	14	0	0	91	41	0	309
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	756	0	1389	0	0	0	0	0	0	2300	392	0	0	2809	1301	0	8947
APPROACH %'s :	35.24%	0.00%	64.76%	0.00%					0.00%	85.44%	14.56%	0.00%	0.00%	68.35%	31.65%	0.00%	
PEAK HR :	03:45 PM - 04:45 PM																TOTAL
PEAK HR VOL :	233	0	459	0	0	0	0	0	0	705	105	0	0	867	451	0	2820
PEAK HR FACTOR :	0.80	0.000	0.850	0.000	0.000	0.000	0.000	0.000	0.000	0.895	0.875	0.000	0.000	0.926	0.947	0.000	0.971
	0.930								0.920				0.955				

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49 NB Ramps & Brunswick Rd
City: Grass Valley
Control: Signalized

Project ID: 19-07290-009
Date: 8/28/2019

HT

NS/EW Streets:	SR 49 NB Ramps				SR 49 NB Ramps				Brunswick Rd				Brunswick 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	2	0	2	0	0	0	0	0	0	0	0	0	0	3	2	0	9
6:45 AM	1	0	1	0	0	0	0	0	0	2	0	0	0	7	2	0	13
7:00 AM	0	0	3	0	0	0	0	0	0	4	0	0	0	5	1	0	13
7:15 AM	1	0	0	0	0	0	0	0	0	1	0	0	0	3	1	0	6
7:30 AM	2	0	2	0	0	0	0	0	0	3	0	0	0	6	0	0	13
7:45 AM	2	0	3	0	0	0	0	0	0	0	1	0	0	2	6	0	14
8:00 AM	0	0	2	0	0	0	0	0	0	6	0	0	0	4	2	0	14
8:15 AM	2	0	7	0	0	0	0	0	0	4	2	0	0	4	2	0	21
8:30 AM	1	0	2	0	0	0	0	0	0	1	0	0	0	6	4	0	14
8:45 AM	1	0	1	0	0	0	0	0	0	1	2	0	0	1	1	0	7
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	12	0	23	0	0	0	0	0	0	22	5	0	0	41	21	0	124
APPROACH %'s :	34.29%	0.00%	65.71%	0.00%					0.00%	81.48%	18.52%	0.00%	0.00%	66.13%	33.87%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	4	0	12	0	0	0	0	0	0	12	4	0	0	15	9	0	56
PEAK HR FACTOR :	0.500	0.000	0.429	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.500	0.000	0.000	0.625	0.563	0.000	0.667
		0.444								0.667				0.600			

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	3	0	0	0	0	0	0	2	0	0	0	4	0	0	10
3:45 PM	0	0	4	0	0	0	0	0	0	2	0	0	0	2	2	0	10
4:00 PM	1	0	7	0	0	0	0	0	0	7	0	0	0	2	1	0	18
4:15 PM	0	0	1	0	0	0	0	0	0	4	0	0	0	3	1	0	9
4:30 PM	0	0	3	0	0	0	0	0	0	3	0	0	0	3	6	0	15
4:45 PM	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	3
5:00 PM	0	0	1	0	0	0	0	0	0	2	0	0	0	0	2	0	5
5:15 PM	1	0	0	0	0	0	0	0	0	2	0	0	0	3	0	0	6
5:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2	0	4
5:45 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	1	2	0	6
6:00 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
6:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6:30 PM	2	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	4
6:45 PM	0	0	3	0	0	0	0	0	0	3	0	0	0	0	1	0	7
7:00 PM	1	0	1	0	0	0	0	0	0	6	0	0	0	0	3	0	11
7:15 PM	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	6	0	26	0	0	0	0	0	0	44	0	0	0	20	20	0	116
APPROACH %'s :	18.75%	0.00%	81.25%	0.00%					0.00%	100.00%	0.00%	0.00%	0.00%	50.00%	50.00%	0.00%	
PEAK HR :	03:45 PM - 04:45 PM																TOTAL
PEAK HR VOL :	1	0	15	0	0	0	0	0	0	16	0	0	0	10	10	0	52
PEAK HR FACTOR :	0.25	0.000	0.536	0.000	0.000	0.000	0.000	0.000	0.000	0.571	0.000	0.000	0.000	0.833	0.417	0.000	0.722
		0.500								0.571				0.556			

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49 NB Ramps & Brunswick Rd
City: Grass Valley
Control: Signalized

Project ID: 19-07290-009
Date: 8/28/2019

Bikes

NS/EW Streets:	SR 49 NB Ramps				SR 49 NB Ramps				Brunswick Rd				Brunswick 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	1	0	0	0	0	0	0	1
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	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	1	0	0	0	0	1	0	2
	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	3	0	0	0	0	1	0	4
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2
PEAK HR FACTOR :	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	0.000	0.250
										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	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	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	1	0	0	0	0	0	0	1
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
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	1	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0	1	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	0	0	0	0	0	0	0	1	1	0	2
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	3	0	0	0	4	1	0	8
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	80.00%	20.00%	0.00%	
PEAK HR :	03:45 PM - 04:45 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49 NB Ramps & Brunswick Rd
City: Grass Valley
Project ID: 19-07290-009
Date: 8/28/2019

Pedestrians (Crosswalks)

NS/EW Streets:	SR 49 NB Ramps		SR 49 NB Ramps		Brunswick Rd		Brunswick 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	2	0	0	0	0	2
7:00 AM	0	0	0	3	0	0	0	0	3
7:15 AM	0	0	1	0	0	0	0	0	1
7:30 AM	0	0	0	2	0	0	0	0	2
7:45 AM	0	0	1	1	0	0	0	0	2
8:00 AM	0	0	0	1	0	0	0	0	1
8:15 AM	0	0	2	1	0	0	0	0	3
8:30 AM	0	0	1	1	0	0	0	0	2
8:45 AM	0	0	0	2	0	0	0	0	2
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	5	13	0	0	0	0	18
APPROACH %'s :			27.78%	72.22%					
PEAK HR :	**08:00 AM - 09:00 AM**								TOTAL
PEAK HR VOL :	0	0	3	5	0	0	0	0	8
PEAK HR FACTOR :			0.375	0.625					0.667
			0.667						

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
3:30 PM	0	0	3	0	0	0	0	0	3
3:45 PM	0	0	1	2	0	0	0	0	3
4:00 PM	0	0	4	0	0	0	0	0	4
4:15 PM	0	0	0	4	0	0	0	0	4
4:30 PM	0	0	2	0	0	0	0	0	2
4:45 PM	0	0	3	1	0	0	0	0	4
5:00 PM	0	0	0	1	0	0	0	0	1
5:15 PM	0	0	2	2	0	0	1	0	5
5:30 PM	0	0	2	0	0	0	0	0	2
5:45 PM	0	0	0	2	0	0	0	0	2
6:00 PM	0	0	0	1	0	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	0	0	0	0	0
7:00 PM	0	0	0	2	0	0	0	0	2
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	17	15	0	0	1	0	33
APPROACH %'s :			53.13%	46.88%			100.00%	0.00%	
PEAK HR :	**03:45 PM - 04:45 PM**								TOTAL
PEAK HR VOL :	0	0	7	6	0	0	0	0	13
PEAK HR FACTOR :			0.438	0.375					0.813
			0.813						

Prepared by National Data & Surveying Services

Sutton Way & Brunswick Rd

Peak Hour Turning Movement Count

ID: 19-07290-010
City: Grass Valley

Day: Wednesday
Date: 08/28/2019

PEAK HOURS

AM: 08:00 AM - 09:00 AM
NOON: NONE
PM: 03:45 PM - 04:45 PM

COUNT PERIODS

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

SOUTHBOUND (Sutton Way)

AM	150	45	47	0	276	AM
NOON	0	0	0	0	0	NOON
PM	322	73	92	0	378	PM

EASTBOUND (Brunswick Rd)

AM	NOON	PM		
765	0	1346	⇦	
0	0	0	↶	0
195	0	257	↱	0
489	0	525	→	0
273	0	427	↴	0
AM	NOON	PM		

WESTBOUND (Brunswick Rd)

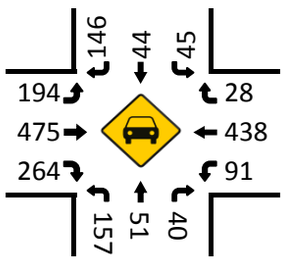
PM	NOON	AM		
33	0	28	↰	0
566	0	453	←	0
129	0	93	↰	0
16	0	5	↶	0
751	0	582	⇨	
PM	NOON	AM		

NORTHBOUND (Sutton Way)

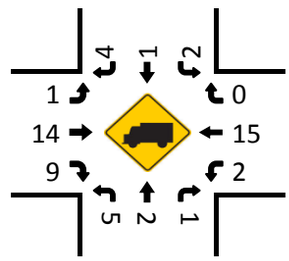
PM	629	0	458	88	118	PM
NOON	0	0	0	0	0	NOON
AM	411	0	162	53	41	AM

CONTROL			
Signalized			
TEV	2034 AM	0 NOON	3104 PM
PHF	0.92		0.98

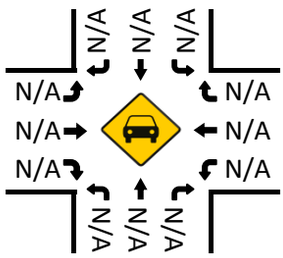
Cars (AM)



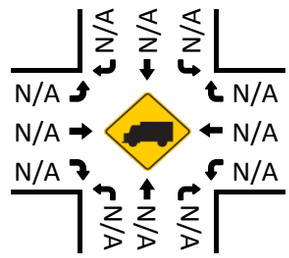
HT (AM)



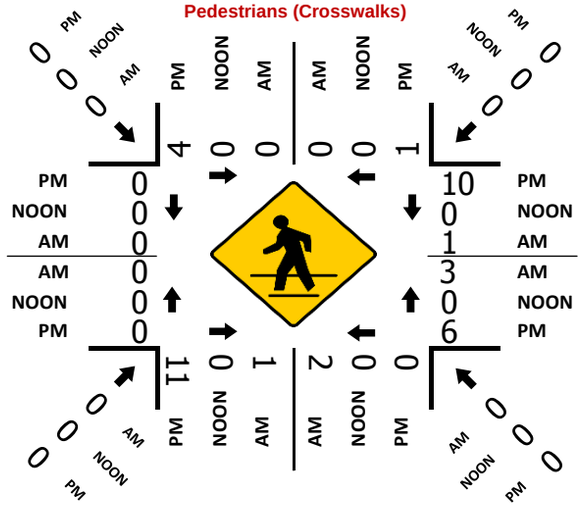
Cars (NOON)



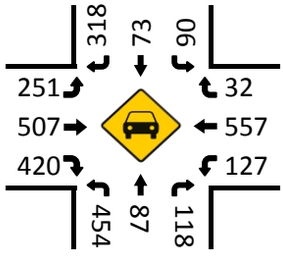
HT (NOON)



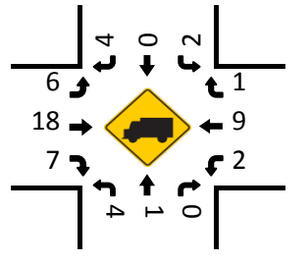
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Sutton Way & Brunswick Rd
City: Grass Valley
Control: Signalized

Project ID: 19-07290-010
Date: 8/28/2019

Total

NS/EW Streets:	Sutton Way				Sutton Way				Brunswick Rd				Brunswick 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	9	2	6	0	0	0	20	0	13	51	9	0	6	40	0	1	157
6:45 AM	17	3	1	0	6	3	24	0	26	80	19	0	6	75	3	1	264
7:00 AM	13	4	6	0	2	2	19	0	18	67	16	0	6	71	2	1	227
7:15 AM	15	3	7	0	7	1	14	0	28	85	23	0	7	65	3	2	260
7:30 AM	25	2	11	0	6	6	38	0	29	83	33	0	9	104	6	7	359
7:45 AM	40	6	12	0	9	7	30	0	41	121	38	0	12	118	9	2	445
8:00 AM	30	7	5	0	11	6	30	0	49	106	57	0	27	121	4	2	455
8:15 AM	42	15	11	0	11	18	43	0	50	128	71	0	19	115	5	2	530
8:30 AM	44	12	15	0	12	11	32	0	46	121	57	0	22	114	10	0	496
8:45 AM	46	19	10	0	13	10	45	0	50	134	88	0	25	103	9	1	553
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	281	73	84	0	77	64	295	0	350	976	411	0	139	926	51	19	3746
APPROACH %'s :	64.16%	16.67%	19.18%	0.00%	17.66%	14.68%	67.66%	0.00%	20.15%	56.19%	23.66%	0.00%	12.25%	81.59%	4.49%	1.67%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	162	53	41	0	47	45	150	0	195	489	273	0	93	453	28	5	2034
PEAK HR FACTOR :	0.880	0.697	0.683	0.000	0.904	0.625	0.833	0.000	0.975	0.912	0.776	0.000	0.861	0.936	0.700	0.625	0.920
	0.853				0.840				0.880				0.940				

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	115	35	28	0	16	13	60	0	75	124	105	0	28	132	6	2	739
3:45 PM	111	28	19	0	20	16	77	0	54	134	104	0	30	134	9	3	739
4:00 PM	134	18	33	0	28	17	76	0	58	140	117	0	25	134	8	6	794
4:15 PM	90	20	39	0	21	19	82	0	76	136	90	0	38	156	13	5	785
4:30 PM	123	22	27	0	23	21	87	0	69	115	116	0	36	142	3	2	786
4:45 PM	109	11	33	0	21	10	67	0	76	107	87	0	39	134	7	3	704
5:00 PM	117	21	27	0	16	13	75	0	60	124	96	0	22	152	1	3	727
5:15 PM	101	18	28	0	16	19	55	0	55	121	97	0	31	149	4	3	697
5:30 PM	95	11	30	0	13	14	62	0	47	110	74	0	28	109	3	2	598
5:45 PM	95	16	33	0	11	10	59	0	41	96	85	0	14	104	2	3	569
6:00 PM	81	9	24	0	16	7	46	0	36	95	67	0	30	86	3	2	502
6:15 PM	68	16	27	0	5	13	39	0	39	87	67	0	14	88	2	3	468
6:30 PM	67	17	28	0	9	9	35	0	27	70	53	0	20	68	3	1	407
6:45 PM	51	10	21	0	12	9	39	0	20	74	64	0	15	63	4	0	382
7:00 PM	67	10	20	0	4	8	34	0	27	59	62	0	17	57	0	3	368
7:15 PM	47	12	20	0	4	8	31	0	22	64	49	0	14	53	1	0	325
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1471	274	437	0	235	206	924	0	782	1656	1333	0	401	1761	69	41	9590
APPROACH %'s :	67.42%	12.56%	20.03%	0.00%	17.22%	15.09%	67.69%	0.00%	20.74%	43.91%	35.35%	0.00%	17.65%	77.51%	3.04%	1.80%	
PEAK HR :	03:45 PM - 04:45 PM																TOTAL
PEAK HR VOL :	458	88	118	0	92	73	322	0	257	525	427	0	129	566	33	16	3104
PEAK HR FACTOR :	0.854	0.786	0.756	0.000	0.821	0.869	0.925	0.000	0.845	0.938	0.912	0.000	0.849	0.907	0.635	0.667	0.977
	0.897				0.929				0.960				0.877				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Sutton Way & Brunswick Rd
City: Grass Valley
Control: Signalized

Project ID: 19-07290-010
Date: 8/28/2019

Cars

NS/EW Streets:	Sutton Way				Sutton Way				Brunswick Rd				Brunswick 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	9	2	6	0	0	0	17	0	11	51	9	0	6	38	0	1	150
6:45 AM	17	2	1	0	5	3	24	0	25	79	18	0	6	66	3	1	250
7:00 AM	12	4	6	0	2	1	17	0	17	62	15	0	6	68	0	1	211
7:15 AM	15	3	7	0	6	1	12	0	28	84	23	0	7	63	3	2	254
7:30 AM	25	2	11	0	6	6	35	0	28	80	32	0	9	101	6	7	348
7:45 AM	39	5	12	0	8	7	28	0	41	119	37	0	10	113	8	2	429
8:00 AM	29	7	4	0	11	6	29	0	48	102	54	0	25	117	4	2	438
8:15 AM	41	15	11	0	11	17	43	0	50	120	68	0	19	110	5	2	512
8:30 AM	42	11	15	0	11	11	30	0	46	119	56	0	22	109	10	0	482
8:45 AM	45	18	10	0	12	10	44	0	50	134	86	0	25	102	9	1	546
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	274	69	83	0	72	62	279	0	344	950	398	0	135	887	48	19	3620
APPROACH %'s :	64.32%	16.20%	19.48%	0.00%	17.43%	15.01%	67.55%	0.00%	20.33%	56.15%	23.52%	0.00%	12.40%	81.45%	4.41%	1.74%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	157	51	40	0	45	44	146	0	194	475	264	0	91	438	28	5	1978
PEAK HR FACTOR :	0.87	0.708	0.667	0.000	0.938	0.647	0.830	0.000	0.970	0.886	0.767	0.000	0.910	0.936	0.700	0.625	0.906
		0.849				0.827				0.864				0.949			

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	112	35	28	0	16	13	60	0	73	120	104	0	26	129	6	2	724
3:45 PM	111	27	19	0	19	16	76	0	54	126	102	0	30	131	8	3	722
4:00 PM	134	18	33	0	27	17	76	0	57	134	115	0	25	132	8	6	782
4:15 PM	90	20	39	0	21	19	79	0	72	133	88	0	37	156	13	5	772
4:30 PM	119	22	27	0	23	21	87	0	68	114	115	0	35	138	3	2	774
4:45 PM	109	10	33	0	21	10	67	0	75	106	85	0	38	134	7	3	698
5:00 PM	116	21	27	0	15	13	75	0	60	122	95	0	22	150	1	3	720
5:15 PM	100	18	28	0	16	18	55	0	54	120	97	0	31	146	4	3	690
5:30 PM	95	11	30	0	13	14	62	0	47	109	73	0	28	106	3	2	593
5:45 PM	95	15	33	0	10	10	59	0	40	96	85	0	14	103	2	3	565
6:00 PM	81	9	24	0	16	7	46	0	36	93	65	0	30	86	3	2	498
6:15 PM	68	16	27	0	5	13	38	0	39	87	66	0	14	88	2	3	466
6:30 PM	67	17	28	0	9	9	34	0	27	69	53	0	20	68	3	1	405
6:45 PM	51	9	21	0	11	9	39	0	19	73	62	0	15	63	4	0	376
7:00 PM	65	10	20	0	4	8	34	0	25	55	60	0	17	56	0	3	357
7:15 PM	47	12	20	0	4	7	31	0	22	61	49	0	14	53	1	0	321
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1460	270	437	0	230	204	918	0	768	1618	1314	0	396	1739	68	41	9463
APPROACH %'s :	67.37%	12.46%	20.17%	0.00%	17.01%	15.09%	67.90%	0.00%	20.76%	43.73%	35.51%	0.00%	17.65%	77.50%	3.03%	1.83%	
PEAK HR :	03:45 PM - 04:45 PM																TOTAL
PEAK HR VOL :	454	87	118	0	90	73	318	0	251	507	420	0	127	557	32	16	3050
PEAK HR FACTOR :	0.85	0.806	0.756	0.000	0.833	0.869	0.914	0.000	0.872	0.946	0.913	0.000	0.858	0.893	0.615	0.667	0.975
		0.891				0.918				0.962				0.867			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Sutton Way & Brunswick Rd
City: Grass Valley
Control: Signalized

Project ID: 19-07290-010
Date: 8/28/2019

HT

NS/EW Streets:	Sutton Way				Sutton Way				Brunswick Rd				Brunswick 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	3	0	2	0	0	0	0	2	0	0	7
6:45 AM	0	1	0	0	1	0	0	0	1	1	1	0	0	9	0	0	14
7:00 AM	1	0	0	0	0	1	2	0	1	5	1	0	0	3	2	0	16
7:15 AM	0	0	0	0	1	0	2	0	0	1	0	0	0	2	0	0	6
7:30 AM	0	0	0	0	0	0	3	0	1	3	1	0	0	3	0	0	11
7:45 AM	1	1	0	0	1	0	2	0	0	2	1	0	2	5	1	0	16
8:00 AM	1	0	1	0	0	0	1	0	1	4	3	0	2	4	0	0	17
8:15 AM	1	0	0	0	0	1	0	0	0	8	3	0	0	5	0	0	18
8:30 AM	2	1	0	0	1	0	2	0	0	2	1	0	0	5	0	0	14
8:45 AM	1	1	0	0	1	0	1	0	0	0	2	0	0	1	0	0	7
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	7	4	1	0	5	2	16	0	6	26	13	0	4	39	3	0	126
APPROACH %'s :	58.33%	33.33%	8.33%	0.00%	21.74%	8.70%	69.57%	0.00%	13.33%	57.78%	28.89%	0.00%	8.70%	84.78%	6.52%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	5	2	1	0	2	1	4	0	1	14	9	0	2	15	0	0	56
PEAK HR FACTOR :	0.625	0.500	0.250	0.000	0.500	0.250	0.500	0.000	0.250	0.438	0.750	0.000	0.250	0.750	0.000	0.000	0.778
	0.667				0.583				0.545				0.708				

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	3	0	0	0	0	0	0	0	2	4	1	0	2	3	0	0	15
3:45 PM	0	1	0	0	1	0	1	0	0	8	2	0	0	3	1	0	17
4:00 PM	0	0	0	0	1	0	0	0	1	6	2	0	0	2	0	0	12
4:15 PM	0	0	0	0	0	0	3	0	4	3	2	0	1	0	0	0	13
4:30 PM	4	0	0	0	0	0	0	0	1	1	1	0	1	4	0	0	12
4:45 PM	0	1	0	0	0	0	0	0	1	1	2	0	1	0	0	0	6
5:00 PM	1	0	0	0	1	0	0	0	0	2	1	0	0	2	0	0	7
5:15 PM	1	0	0	0	0	1	0	0	1	1	0	0	0	3	0	0	7
5:30 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	3	0	0	5
5:45 PM	0	1	0	0	1	0	0	0	1	0	0	0	0	1	0	0	4
6:00 PM	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	4
6:15 PM	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
6:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
6:45 PM	0	1	0	0	1	0	0	0	1	1	2	0	0	0	0	0	6
7:00 PM	2	0	0	0	0	0	0	0	2	4	2	0	0	1	0	0	11
7:15 PM	0	0	0	0	0	1	0	0	0	3	0	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 :	11	4	0	0	5	2	6	0	14	38	19	0	5	22	1	0	127
APPROACH %'s :	73.33%	26.67%	0.00%	0.00%	38.46%	15.38%	46.15%	0.00%	19.72%	53.52%	26.76%	0.00%	17.86%	78.57%	3.57%	0.00%	
PEAK HR :	03:45 PM - 04:45 PM																TOTAL
PEAK HR VOL :	4	1	0	0	2	0	4	0	6	18	7	0	2	9	1	0	54
PEAK HR FACTOR :	0.25	0.250	0.000	0.000	0.500	0.000	0.333	0.000	0.375	0.563	0.875	0.000	0.500	0.563	0.250	0.000	0.794
	0.313				0.500				0.775				0.600				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Sutton Way & Brunswick Rd
City: Grass Valley
Control: Signalized

Project ID: 19-07290-010
Date: 8/28/2019

Bikes

NS/EW Streets:	Sutton Way				Sutton Way				Brunswick Rd				Brunswick 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	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	1	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
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	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	1	0	0	0	1	1	0	0	0	0	0	3
APPROACH %'s :					0.00%	100.00%	0.00%	0.00%	0.00%	50.00%	50.00%	0.00%					
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	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	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
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	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
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
6:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
7:00 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3
7:15 PM	0	0	0	0	0	0	1	0	0	0	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 :	1	3	1	0	0	0	4	0	0	0	2	0	0	0	0	0	11
APPROACH %'s :	20.00%	60.00%	20.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%					
PEAK HR :	**03:45 PM - 04:45 PM**																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services

Intersection Turning Movement Count

Location: Sutton Way & Brunswick Rd
City: Grass Valley

Project ID: 19-07290-010
Date: 8/28/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Sutton Way		Sutton Way		Brunswick Rd		Brunswick 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	1	0	0	0	0	1
6:45 AM	0	0	0	1	0	2	0	0	3
7:00 AM	0	0	0	2	0	4	0	0	6
7:15 AM	0	0	0	0	0	1	0	0	1
7:30 AM	0	0	0	2	2	2	0	0	6
7:45 AM	0	0	1	0	2	1	0	0	4
8:00 AM	0	0	1	0	2	0	0	0	3
8:15 AM	0	0	0	1	1	0	0	0	2
8:30 AM	0	0	0	1	0	1	0	0	2
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	2	8	7	11	0	0	28
APPROACH %'s :			20.00%	80.00%	38.89%	61.11%			
PEAK HR :	**08:00 AM - 09:00 AM**								TOTAL
PEAK HR VOL :	0	0	1	2	3	1	0	0	7
PEAK HR FACTOR :			0.250	0.500	0.375	0.250			0.583
			0.750		0.500				

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
3:30 PM	0	0	0	2	0	2	0	0	4
3:45 PM	3	1	2	0	1	3	0	0	10
4:00 PM	0	0	1	0	2	4	0	0	7
4:15 PM	0	0	2	0	2	2	0	0	6
4:30 PM	1	0	6	0	1	1	0	0	9
4:45 PM	0	0	0	1	2	0	0	0	3
5:00 PM	0	0	0	2	2	2	0	0	6
5:15 PM	0	0	0	2	2	1	0	0	5
5:30 PM	0	0	2	0	3	1	0	0	6
5:45 PM	1	0	0	0	0	1	0	0	2
6:00 PM	1	0	0	0	0	0	0	0	1
6:15 PM	0	0	1	0	1	2	0	0	4
6:30 PM	0	0	4	1	4	1	0	0	10
6:45 PM	0	0	0	0	0	2	0	0	2
7:00 PM	0	0	0	0	1	1	0	0	2
7:15 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	6	1	18	8	21	23	0	0	77
APPROACH %'s :	85.71%	14.29%	69.23%	30.77%	47.73%	52.27%			
PEAK HR :	**03:45 PM - 04:45 PM**								TOTAL
PEAK HR VOL :	4	1	11	0	6	10	0	0	32
PEAK HR FACTOR :	0.333	0.250	0.458		0.750	0.625			0.800
	0.313		0.458		0.667				

Prepared by National Data & Surveying Services

Brunswick Rd & Idaho Maryland Rd

Peak Hour Turning Movement Count

ID: 19-07290-011
City: Grass Valley

Day: Wednesday
Date: 08/28/2019

PEAK HOURS

AM: 07:45 AM - 08:45 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

Brunswick Rd — SOUTHBOUND

AM	8	311	37	0	553	AM
NOON	0	0	0	0	0	NOON
PM	14	445	90	0	532	PM

Idaho Maryland Rd — EASTBOUND

AM	NOON	PM	
227	0	253	
0	0	0	0
1	0	0	0
3	0	1	0
154	0	195	0
AM	NOON	PM	

Idaho Maryland Rd — WESTBOUND

PM	NOON	AM	
72	0	103	0
5	0	11	0
18	0	50	0
0	0	0	0
143	0	58	
PM	NOON	AM	

CONTROL

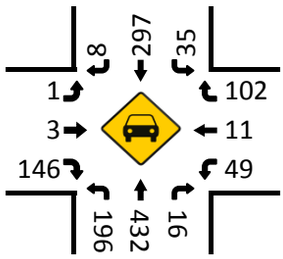
0

TEV	1354 AM	0 NOON	1586 PM
PHF	0.94		0.97

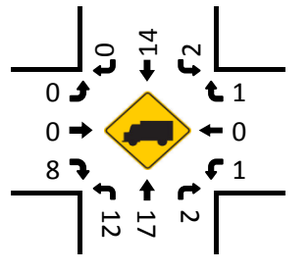
Brunswick Rd — NORTHBOUND

PM	658	0	234	460	52	PM
NOON	0	0	0	0	0	NOON
AM	516	1	208	449	18	AM

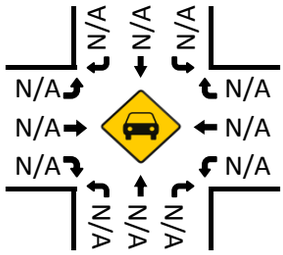
Cars (AM)



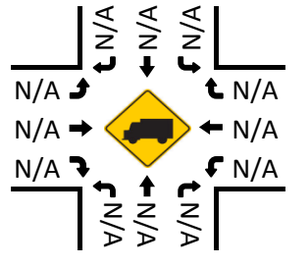
HT (AM)



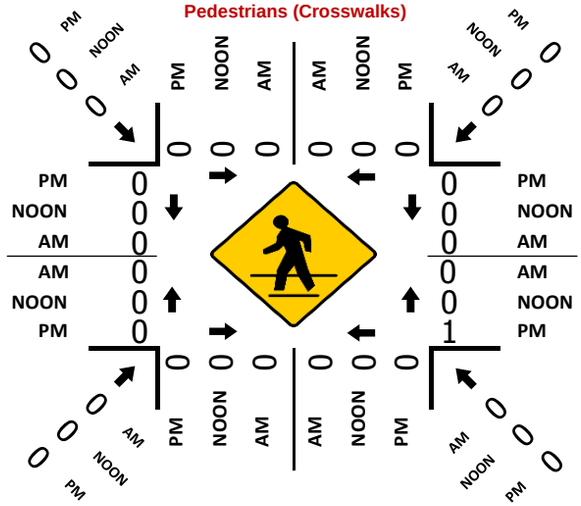
Cars (NOON)



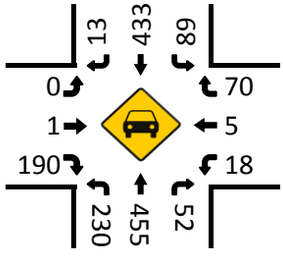
HT (NOON)



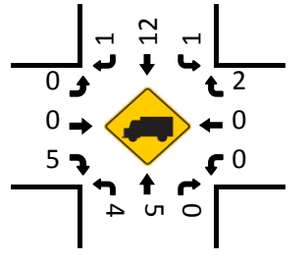
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Brunswick Rd & Idaho Maryland Rd
City: Grass Valley
Control:

Project ID: 19-07290-011
Date: 8/28/2019

Total

NS/EW Streets:	Brunswick Rd				Brunswick Rd				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	18	35	1	0	6	35	0	0	0	1	20	0	2	2	10	0	130
6:45 AM	28	65	5	0	4	65	2	0	0	0	36	0	11	1	6	0	223
7:00 AM	22	63	2	0	1	42	0	0	0	2	21	0	14	1	15	0	183
7:15 AM	28	47	2	0	7	55	1	0	0	0	26	0	10	4	22	0	202
7:30 AM	45	102	4	0	5	60	2	0	1	0	24	0	11	0	21	0	275
7:45 AM	59	118	7	1	6	67	2	0	0	1	46	0	10	2	38	0	357
8:00 AM	49	112	3	0	5	70	2	0	1	2	30	0	15	7	29	0	325
8:15 AM	52	120	2	0	10	95	2	0	0	0	44	0	14	2	18	0	359
8:30 AM	48	99	6	0	16	79	2	0	0	0	34	0	11	0	18	0	313
8:45 AM	57	88	4	0	5	89	1	0	0	1	28	0	9	3	24	0	309
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	406	849	36	1	65	657	14	0	2	7	309	0	107	22	201	0	2676
APPROACH %'s :	31.42%	65.71%	2.79%	0.08%	8.83%	89.27%	1.90%	0.00%	0.63%	2.20%	97.17%	0.00%	32.42%	6.67%	60.91%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	208	449	18	1	37	311	8	0	1	3	154	0	50	11	103	0	1354
PEAK HR FACTOR :	0.881	0.935	0.643	0.250	0.578	0.818	1.000	0.000	0.250	0.375	0.837	0.000	0.833	0.393	0.678	0.000	0.943
	0.914				0.832				0.840				0.804				

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	60	125	9	0	24	98	5	0	0	0	46	0	4	2	13	0	386
3:45 PM	42	103	15	0	16	97	2	0	0	0	54	0	8	1	15	0	353
4:00 PM	46	120	8	0	21	112	4	0	1	0	40	0	6	0	8	0	366
4:15 PM	33	104	15	0	23	110	2	0	0	1	49	0	4	1	11	0	353
4:30 PM	67	122	9	0	22	112	4	0	0	0	39	0	3	2	19	0	399
4:45 PM	50	117	10	0	28	111	5	0	0	0	66	0	6	1	13	0	407
5:00 PM	59	121	18	0	18	104	4	0	0	1	56	0	3	0	17	0	401
5:15 PM	58	100	15	0	22	118	1	0	0	0	34	0	6	2	23	0	379
5:30 PM	31	70	7	0	29	88	2	0	0	0	46	0	4	2	10	0	289
5:45 PM	33	60	5	0	28	83	2	0	1	0	37	0	5	1	10	0	265
6:00 PM	14	64	9	0	24	88	0	0	0	2	37	0	5	2	12	0	257
6:15 PM	20	63	2	0	27	73	0	0	1	1	24	0	5	4	8	0	228
6:30 PM	10	48	7	0	14	78	0	0	1	0	26	0	7	0	14	0	205
6:45 PM	14	52	9	0	17	64	0	0	0	1	21	0	5	1	5	0	189
7:00 PM	27	52	3	0	21	42	1	0	0	1	23	0	4	0	9	0	183
7:15 PM	13	30	5	0	9	68	0	0	0	0	28	0	3	1	6	0	163
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	577	1351	146	0	343	1446	32	0	4	7	626	0	78	20	193	0	4823
APPROACH %'s :	27.82%	65.14%	7.04%	0.00%	18.84%	79.41%	1.76%	0.00%	0.63%	1.10%	98.27%	0.00%	26.80%	6.87%	66.32%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	234	460	52	0	90	445	14	0	0	1	195	0	18	5	72	0	1586
PEAK HR FACTOR :	0.873	0.943	0.722	0.000	0.804	0.943	0.700	0.000	0.000	0.250	0.739	0.000	0.750	0.625	0.783	0.000	0.974
	0.942				0.953				0.742				0.766				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Brunswick Rd & Idaho Maryland Rd
City: Grass Valley
Control: 0

Project ID: 19-07290-011
Date: 8/28/2019

Cars

NS/EW Streets:	Brunswick Rd				Brunswick Rd				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	17	32	1	0	6	35	0	0	0	1	19	0	2	2	10	0	125
6:45 AM	25	55	5	0	4	64	2	0	0	0	35	0	11	1	6	0	208
7:00 AM	20	54	2	0	1	39	0	0	0	2	20	0	13	0	15	0	166
7:15 AM	28	44	2	0	7	54	1	0	0	0	24	0	10	4	22	0	196
7:30 AM	45	98	3	0	5	56	2	0	1	0	24	0	10	0	21	0	265
7:45 AM	57	113	6	1	5	66	2	0	0	1	44	0	10	2	38	0	345
8:00 AM	45	107	3	0	5	66	2	0	1	2	28	0	14	7	28	0	308
8:15 AM	49	117	2	0	9	88	2	0	0	0	42	0	14	2	18	0	343
8:30 AM	45	95	5	0	16	77	2	0	0	0	32	0	11	0	18	0	301
8:45 AM	55	86	4	0	5	88	1	0	0	1	26	0	9	2	24	0	301
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	386	801	33	1	63	633	14	0	2	7	294	0	104	20	200	0	2558
APPROACH %'s :	31.61%	65.60%	2.70%	0.08%	8.87%	89.15%	1.97%	0.00%	0.66%	2.31%	97.03%	0.00%	32.10%	6.17%	61.73%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	196	432	16	1	35	297	8	0	1	3	146	0	49	11	102	0	1297
PEAK HR FACTOR :	0.86	0.923	0.667	0.250	0.547	0.844	1.000	0.000	0.250	0.375	0.830	0.000	0.875	0.393	0.671	0.000	0.940
		0.911				0.859				0.833				0.810			

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	59	122	9	0	24	94	5	0	0	0	45	0	4	2	12	0	376
3:45 PM	42	99	15	0	16	94	2	0	0	0	54	0	8	1	15	0	346
4:00 PM	46	118	8	0	20	104	4	0	1	0	40	0	5	0	8	0	354
4:15 PM	31	101	15	0	23	105	2	0	0	1	48	0	4	1	11	0	342
4:30 PM	66	121	9	0	22	106	4	0	0	0	38	0	3	2	19	0	390
4:45 PM	49	116	10	0	27	107	4	0	0	0	64	0	6	1	12	0	396
5:00 PM	58	119	18	0	18	103	4	0	0	1	54	0	3	0	17	0	395
5:15 PM	57	99	15	0	22	117	1	0	0	0	34	0	6	2	22	0	375
5:30 PM	31	67	7	0	29	88	2	0	0	0	44	0	4	2	10	0	284
5:45 PM	33	58	5	0	28	81	2	0	1	0	36	0	5	1	10	0	260
6:00 PM	14	64	9	0	24	86	0	0	0	2	35	0	5	2	12	0	253
6:15 PM	19	63	2	0	27	73	0	0	1	1	24	0	5	4	8	0	227
6:30 PM	10	47	7	0	14	78	0	0	1	0	25	0	7	0	14	0	203
6:45 PM	14	51	9	0	17	62	0	0	0	1	21	0	5	1	5	0	186
7:00 PM	27	50	3	0	21	41	1	0	0	1	21	0	4	0	9	0	178
7:15 PM	13	29	5	0	9	66	0	0	0	0	27	0	3	1	6	0	159
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	569	1324	146	0	341	1405	31	0	4	7	610	0	77	20	190	0	4724
APPROACH %'s :	27.91%	64.93%	7.16%	0.00%	19.19%	79.07%	1.74%	0.00%	0.64%	1.13%	98.23%	0.00%	26.83%	6.97%	66.20%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	230	455	52	0	89	433	13	0	0	1	190	0	18	5	70	0	1556
PEAK HR FACTOR :	0.87	0.940	0.722	0.000	0.824	0.925	0.813	0.000	0.000	0.250	0.742	0.000	0.750	0.625	0.795	0.000	0.982
		0.940				0.955				0.746				0.775			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Brunswick Rd & Idaho Maryland Rd
City: Grass Valley
Control: 0

Project ID: 19-07290-011
Date: 8/28/2019

HT

NS/EW Streets:	Brunswick Rd				Brunswick Rd				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	3	0	0	0	0	0	0	0	0	1	0	0	0	0	0	5
6:45 AM	3	10	0	0	0	1	0	0	0	0	1	0	0	0	0	0	15
7:00 AM	2	9	0	0	0	3	0	0	0	0	1	0	1	1	0	0	17
7:15 AM	0	3	0	0	0	1	0	0	0	0	2	0	0	0	0	0	6
7:30 AM	0	4	1	0	0	4	0	0	0	0	0	0	1	0	0	0	10
7:45 AM	2	5	1	0	1	1	0	0	0	0	2	0	0	0	0	0	12
8:00 AM	4	5	0	0	0	4	0	0	0	0	2	0	1	0	1	0	17
8:15 AM	3	3	0	0	1	7	0	0	0	0	2	0	0	0	0	0	16
8:30 AM	3	4	1	0	0	2	0	0	0	0	2	0	0	0	0	0	12
8:45 AM	2	2	0	0	0	1	0	0	0	0	2	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 :	20	48	3	0	2	24	0	0	0	0	15	0	3	2	1	0	118
APPROACH %'s :	28.17%	67.61%	4.23%	0.00%	7.69%	92.31%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	50.00%	33.33%	16.67%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	12	17	2	0	2	14	0	0	0	0	8	0	1	0	1	0	57
PEAK HR FACTOR :	0.750	0.850	0.500	0.000	0.500	0.500	0.000	0.000	0.000	0.000	1.000	0.000	0.250	0.000	0.250	0.000	0.838
		0.861				0.500				1.000				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	1	3	0	0	0	4	0	0	0	0	1	0	0	0	1	0	10
3:45 PM	0	4	0	0	0	3	0	0	0	0	0	0	0	0	0	0	7
4:00 PM	0	2	0	0	1	8	0	0	0	0	0	0	1	0	0	0	12
4:15 PM	2	3	0	0	0	5	0	0	0	0	1	0	0	0	0	0	11
4:30 PM	1	1	0	0	0	6	0	0	0	0	1	0	0	0	0	0	9
4:45 PM	1	1	0	0	1	4	1	0	0	0	2	0	0	0	1	0	11
5:00 PM	1	2	0	0	0	1	0	0	0	0	2	0	0	0	0	0	6
5:15 PM	1	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	4
5:30 PM	0	3	0	0	0	0	0	0	0	0	2	0	0	0	0	0	5
5:45 PM	0	2	0	0	0	2	0	0	0	0	1	0	0	0	0	0	5
6:00 PM	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	4
6:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:30 PM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
6:45 PM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
7:00 PM	0	2	0	0	0	1	0	0	0	0	2	0	0	0	0	0	5
7:15 PM	0	1	0	0	0	2	0	0	0	0	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 :	8	27	0	0	2	41	1	0	0	0	16	0	1	0	3	0	99
APPROACH %'s :	22.86%	77.14%	0.00%	0.00%	4.55%	93.18%	2.27%	0.00%	0.00%	0.00%	100.00%	0.00%	25.00%	0.00%	75.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	4	5	0	0	1	12	1	0	0	0	5	0	0	0	2	0	30
PEAK HR FACTOR :	1.00	0.625	0.000	0.000	0.250	0.500	0.250	0.000	0.000	0.000	0.625	0.000	0.000	0.000	0.500	0.000	0.682
		0.750				0.583				0.625				0.500			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Brunswick Rd & Idaho Maryland Rd
City: Grass Valley
Control: 0

Project ID: 19-07290-011
Date: 8/28/2019

Bikes

NS/EW Streets:	Brunswick Rd				Brunswick Rd				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	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
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	1	1	0	0	0	0	0	0	2
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	1	0	0	0	0	0	0	1	1	0	0	1	1	0	0	5
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%					50.00%	50.00%	0.00%	0.00%	50.00%	50.00%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	1	0	0	0	0	0	0	1	1	0	0	1	0	0	0	4
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.500
		0.250							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	1	0	0	0	0	0	0	0	0	0	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	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	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	3
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
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	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	0	0	0	0	0	0	0	0	1
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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 :	1	2	1	1	0	0	0	0	0	0	1	0	0	0	0	0	6
APPROACH %'s :	20.00%	40.00%	20.00%	20.00%					0.00%	0.00%	100.00%	0.00%					
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	4
PEAK HR FACTOR :	0.00	0.250	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.333
		0.375							0.250								

National Data & Surveying Services

Intersection Turning Movement Count

Location: Brunswick Rd & Idaho Maryland Rd
City: Grass Valley

Project ID: 19-07290-011
Date: 8/28/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Brunswick Rd		Brunswick Rd		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	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 :	07:45 AM - 08:45 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	1	0	0	0	1
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	0	1	0	0	0	1
APPROACH %'s :					100.00%	0.00%			
PEAK HR :	04:30 PM - 05:30 PM								TOTAL
PEAK HR VOL :	0	0	0	0	1	0	0	0	1
PEAK HR FACTOR :					0.250				0.250
					0.250				

Prepared by National Data & Surveying Services

Brunswick Rd & Whispering Pines Ln

Peak Hour Turning Movement Count

ID: 19-07290-012
City: Grass Valley

Day: Wednesday
Date: 08/28/2019

PEAK HOURS

AM: 07:45 AM - 08:45 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

Brunswick Rd — SOUTHBOUND

AM	86	426	0	1	679	AM
NOON	0	0	0	0	0	NOON
PM	40	618	0	0	743	PM

Whispering Pines Ln — EASTBOUND

AM	NOON	PM	
149	0	63	
0	0	0	0
21	0	85	0
0	0	0	0
44	0	53	0
AM	NOON	PM	

CONTROL

1 Way Stop Sign - EB

TEV	1299	0	1477
	AM	NOON	PM
PHF	0.90		0.95

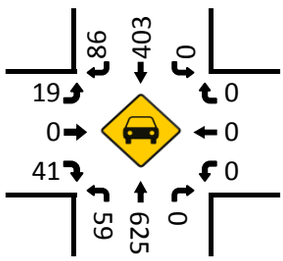
Whispering Pines Ln — WESTBOUND

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

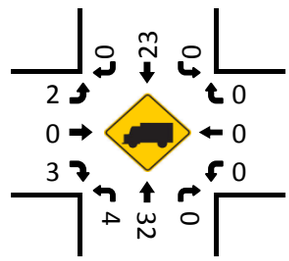
Brunswick Rd — NORTHBOUND

PM	671	0	23	658	0	PM
NOON	0	0	0	0	0	NOON
AM	471	1	63	657	0	AM

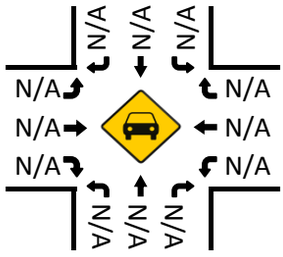
Cars (AM)



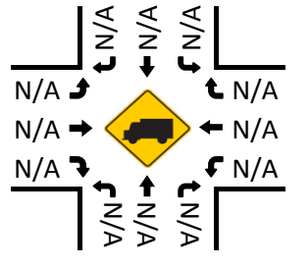
HT (AM)



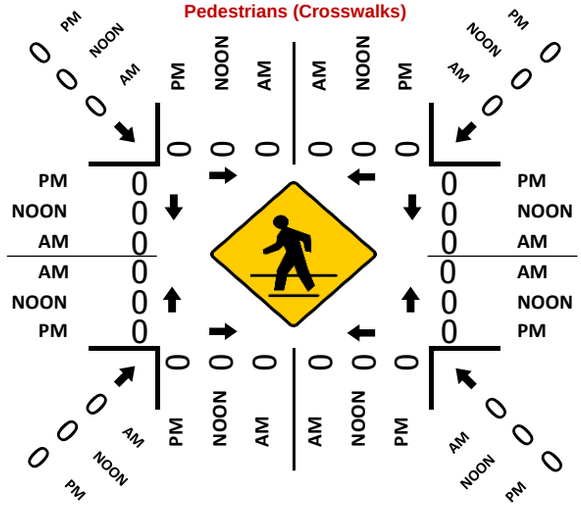
Cars (NOON)



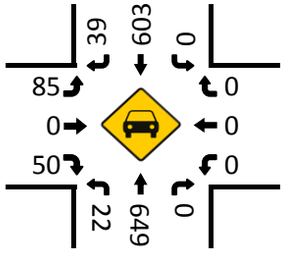
HT (NOON)



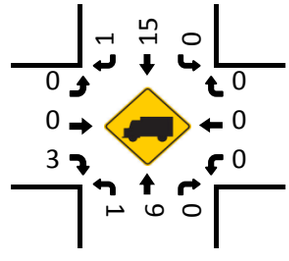
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Brunswick Rd & Whispering Pines Ln
City: Grass Valley
Control: 1 Way Stop Sign - EB

Project ID: 19-07290-012
Date: 8/28/2019

Total

NS/EW Streets:	Brunswick Rd				Brunswick Rd				Whispering Pines Ln				Whispering Pines Ln				
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	5	53	0	1	0	50	3	0	0	0	2	0	0	0	0	0	114
6:45 AM	13	91	0	0	0	98	15	0	4	0	13	0	0	0	0	0	234
7:00 AM	7	81	0	0	0	69	10	0	6	0	7	0	0	0	0	0	180
7:15 AM	7	77	0	1	0	73	15	0	3	0	6	0	0	0	0	0	182
7:30 AM	14	149	0	0	0	81	15	0	0	0	8	0	0	0	0	0	267
7:45 AM	10	183	0	0	0	101	21	1	5	0	5	0	0	0	0	0	326
8:00 AM	18	159	0	0	0	100	12	0	3	0	13	0	0	0	0	0	305
8:15 AM	19	172	0	0	0	118	32	0	5	0	14	0	0	0	0	0	360
8:30 AM	16	143	0	1	0	107	21	0	8	0	12	0	0	0	0	0	308
8:45 AM	7	146	0	0	0	107	21	0	8	0	13	0	0	0	0	0	302
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	116	1254	0	3	0	904	165	1	42	0	93	0	0	0	0	0	2578
APPROACH %'s :	8.45%	91.33%	0.00%	0.22%	0.00%	84.49%	15.42%	0.09%	31.11%	0.00%	68.89%	0.00%					
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	63	657	0	1	0	426	86	1	21	0	44	0	0	0	0	0	1299
PEAK HR FACTOR :	0.829	0.898	0.000	0.250	0.000	0.903	0.672	0.250	0.656	0.000	0.786	0.000	0.000	0.000	0.000	0.000	0.902
		0.934				0.855				0.813							

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	9	180	0	0	0	137	6	0	15	0	16	0	0	0	0	0	363
3:45 PM	11	144	0	0	0	147	10	0	16	0	22	0	0	0	0	0	350
4:00 PM	13	155	0	0	0	155	10	0	17	0	14	0	0	0	0	0	364
4:15 PM	6	142	0	0	0	153	6	0	14	0	15	0	0	0	0	0	336
4:30 PM	9	180	0	0	0	138	11	0	14	0	17	0	0	0	0	0	369
4:45 PM	8	156	0	0	0	178	13	0	23	0	9	0	0	0	0	0	387
5:00 PM	0	170	0	0	0	145	10	0	27	0	18	0	0	0	0	0	370
5:15 PM	6	152	0	0	0	157	6	0	21	0	9	0	0	0	0	0	351
5:30 PM	4	100	0	0	0	128	5	0	10	0	12	0	0	0	0	0	259
5:45 PM	4	95	0	0	0	118	3	0	4	0	9	0	0	0	0	0	233
6:00 PM	2	76	0	0	0	118	4	0	10	0	8	0	0	0	0	0	218
6:15 PM	2	83	0	0	0	103	1	0	5	0	9	0	0	0	0	0	203
6:30 PM	3	80	0	0	0	103	1	0	4	0	11	0	0	0	0	0	202
6:45 PM	0	60	0	0	0	100	4	0	2	0	9	0	0	0	0	0	175
7:00 PM	2	63	0	0	0	77	6	0	5	0	5	0	0	0	0	0	158
7:15 PM	3	50	0	0	0	91	2	0	4	0	8	0	0	0	0	0	158
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	82	1886	0	0	0	2048	98	0	191	0	191	0	0	0	0	0	4496
APPROACH %'s :	4.17%	95.83%	0.00%	0.00%	0.00%	95.43%	4.57%	0.00%	50.00%	0.00%	50.00%	0.00%					
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	23	658	0	0	0	618	40	0	85	0	53	0	0	0	0	0	1477
PEAK HR FACTOR :	0.639	0.914	0.000	0.000	0.000	0.868	0.769	0.000	0.787	0.000	0.736	0.000	0.000	0.000	0.000	0.000	0.954
		0.901				0.861				0.767							

National Data & Surveying Services

Intersection Turning Movement Count

Location: Brunswick Rd & Whispering Pines Ln
City: Grass Valley
Control: 1 Way Stop Sign - EB

Project ID: 19-07290-012
Date: 8/28/2019

Cars

NS/EW Streets:	Brunswick Rd				Brunswick Rd				Whispering Pines Ln				Whispering Pines Ln				
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	5	49	0	1	0	49	3	0	0	0	2	0	0	0	0	0	109
6:45 AM	13	78	0	0	0	97	15	0	4	0	12	0	0	0	0	0	219
7:00 AM	7	72	0	0	0	64	10	0	6	0	7	0	0	0	0	0	166
7:15 AM	7	74	0	1	0	70	15	0	3	0	6	0	0	0	0	0	176
7:30 AM	14	144	0	0	0	76	15	0	0	0	6	0	0	0	0	0	255
7:45 AM	9	176	0	0	0	98	21	1	4	0	5	0	0	0	0	0	314
8:00 AM	17	149	0	0	0	94	12	0	3	0	11	0	0	0	0	0	286
8:15 AM	18	165	0	0	0	108	32	0	5	0	14	0	0	0	0	0	342
8:30 AM	15	135	0	0	0	103	21	0	7	0	11	0	0	0	0	0	292
8:45 AM	6	142	0	0	0	104	21	0	8	0	12	0	0	0	0	0	293
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	111	1184	0	2	0	863	165	1	40	0	86	0	0	0	0	0	2452
APPROACH %'s :	8.56%	91.29%	0.00%	0.15%	0.00%	83.87%	16.03%	0.10%	31.75%	0.00%	68.25%	0.00%					
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	59	625	0	0	0	403	86	1	19	0	41	0	0	0	0	0	1234
PEAK HR FACTOR :	0.82	0.888	0.000	0.000	0.000	0.933	0.672	0.250	0.679	0.000	0.732	0.000	0.000	0.000	0.000	0.000	0.902
		0.924				0.875				0.789							

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	8	176	0	0	0	132	6	0	15	0	15	0	0	0	0	0	352
3:45 PM	10	141	0	0	0	144	10	0	15	0	20	0	0	0	0	0	340
4:00 PM	12	153	0	0	0	146	10	0	17	0	14	0	0	0	0	0	352
4:15 PM	6	137	0	0	0	146	6	0	14	0	15	0	0	0	0	0	324
4:30 PM	9	178	0	0	0	132	11	0	14	0	16	0	0	0	0	0	360
4:45 PM	8	154	0	0	0	173	12	0	23	0	9	0	0	0	0	0	379
5:00 PM	0	166	0	0	0	142	10	0	27	0	16	0	0	0	0	0	361
5:15 PM	5	151	0	0	0	156	6	0	21	0	9	0	0	0	0	0	348
5:30 PM	4	97	0	0	0	126	5	0	10	0	10	0	0	0	0	0	252
5:45 PM	2	93	0	0	0	114	3	0	4	0	9	0	0	0	0	0	225
6:00 PM	2	75	0	0	0	115	4	0	10	0	8	0	0	0	0	0	214
6:15 PM	2	82	0	0	0	103	1	0	5	0	8	0	0	0	0	0	201
6:30 PM	3	79	0	0	0	102	1	0	4	0	11	0	0	0	0	0	200
6:45 PM	0	60	0	0	0	98	4	0	2	0	9	0	0	0	0	0	173
7:00 PM	2	60	0	0	0	75	5	0	5	0	4	0	0	0	0	0	151
7:15 PM	3	50	0	0	0	89	2	0	4	0	8	0	0	0	0	0	156
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	76	1852	0	0	0	1993	96	0	190	0	181	0	0	0	0	0	4388
APPROACH %'s :	3.94%	96.06%	0.00%	0.00%	0.00%	95.40%	4.60%	0.00%	51.21%	0.00%	48.79%	0.00%					
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	22	649	0	0	0	603	39	0	85	0	50	0	0	0	0	0	1448
PEAK HR FACTOR :	0.61	0.912	0.000	0.000	0.000	0.871	0.813	0.000	0.787	0.000	0.781	0.000	0.000	0.000	0.000	0.000	0.955
		0.897				0.868				0.785							

National Data & Surveying Services

Intersection Turning Movement Count

Location: Brunswick Rd & Whispering Pines Ln
City: Grass Valley
Control: 1 Way Stop Sign - EB

Project ID: 19-07290-012
Date: 8/28/2019

HT

NS/EW Streets:	Brunswick Rd				Brunswick Rd				Whispering Pines Ln				Whispering Pines Ln				
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	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5
6:45 AM	0	13	0	0	0	1	0	0	0	0	1	0	0	0	0	0	15
7:00 AM	0	9	0	0	0	5	0	0	0	0	0	0	0	0	0	0	14
7:15 AM	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	6
7:30 AM	0	5	0	0	0	5	0	0	0	0	2	0	0	0	0	0	12
7:45 AM	1	7	0	0	0	3	0	0	1	0	0	0	0	0	0	0	12
8:00 AM	1	10	0	0	0	6	0	0	0	0	2	0	0	0	0	0	19
8:15 AM	1	7	0	0	0	10	0	0	0	0	0	0	0	0	0	0	18
8:30 AM	1	8	0	1	0	4	0	0	1	0	1	0	0	0	0	0	16
8:45 AM	1	4	0	0	0	3	0	0	0	0	1	0	0	0	0	0	9
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	5	70	0	1	0	41	0	0	2	0	7	0	0	0	0	0	126
APPROACH %'s :	6.58%	92.11%	0.00%	1.32%	0.00%	100.00%	0.00%	0.00%	22.22%	0.00%	77.78%	0.00%					
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	4	32	0	1	0	23	0	0	2	0	3	0	0	0	0	0	65
PEAK HR FACTOR :	1.000	0.800	0.000	0.250	0.000	0.575	0.000	0.000	0.500	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.855
	0.841				0.575				0.625								

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	4	0	0	0	5	0	0	0	0	1	0	0	0	0	0	11
3:45 PM	1	3	0	0	0	3	0	0	1	0	2	0	0	0	0	0	10
4:00 PM	1	2	0	0	0	9	0	0	0	0	0	0	0	0	0	0	12
4:15 PM	0	5	0	0	0	7	0	0	0	0	0	0	0	0	0	0	12
4:30 PM	0	2	0	0	0	6	0	0	0	0	1	0	0	0	0	0	9
4:45 PM	0	2	0	0	0	5	1	0	0	0	0	0	0	0	0	0	8
5:00 PM	0	4	0	0	0	3	0	0	0	0	2	0	0	0	0	0	9
5:15 PM	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
5:30 PM	0	3	0	0	0	2	0	0	0	0	2	0	0	0	0	0	7
5:45 PM	2	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	8
6:00 PM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4
6:15 PM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
6:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
6:45 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
7:00 PM	0	3	0	0	0	2	1	0	0	0	1	0	0	0	0	0	7
7:15 PM	0	0	0	0	0	2	0	0	0	0	0	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 :	6	34	0	0	0	55	2	0	1	0	10	0	0	0	0	0	108
APPROACH %'s :	15.00%	85.00%	0.00%	0.00%	0.00%	96.49%	3.51%	0.00%	9.09%	0.00%	90.91%	0.00%					
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	1	9	0	0	0	15	1	0	0	0	3	0	0	0	0	0	29
PEAK HR FACTOR :	0.25	0.563	0.000	0.000	0.000	0.625	0.250	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.806
	0.625				0.667				0.375								

National Data & Surveying Services

Intersection Turning Movement Count

Location: Brunswick Rd & Whispering Pines Ln
City: Grass Valley
Control: 1 Way Stop Sign - EB

Project ID: 19-07290-012
Date: 8/28/2019

Bikes

NS/EW Streets:	Brunswick Rd				Brunswick Rd				Whispering Pines Ln				Whispering Pines Ln				
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	1	0	0	0	0	0	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 :	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%													
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	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	0.000	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	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	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	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
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	1	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	4	0	0	0	2	0	0	1	0	2	0	0	0	0	0	9
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	33.33%	0.00%	66.67%	0.00%					
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	3	0	0	0	2	0	0	0	0	1	0	0	0	0	0	6
PEAK HR FACTOR :	0.00	0.750	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.750
	0.750				0.250				0.250								

National Data & Surveying Services

Intersection Turning Movement Count

Location: Brunswick Rd & Whispering Pines Ln
City: Grass Valley

Project ID: 19-07290-012
Date: 8/28/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Brunswick Rd		Brunswick Rd		Whispering Pines Ln		Whispering Pines Ln		
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 :	07:45 AM - 08:45 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	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	1	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	0	0	0	1	1
APPROACH %'s :							0.00%	100.00%	
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

Brunswick Rd & E Bennett Rd/Greenhorn Rd

Peak Hour Turning Movement Count

ID: 19-07290-013
City: Grass Valley

Day: Wednesday
Date: 08/28/2019

PEAK HOURS

AM: 07:45 AM - 08:45 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

Brunswick Rd — SOUTHBOUND

AM	26	191	51	0	675	AM
NOON	0	0	0	0	0	NOON
PM	30	483	138	0	404	PM

E Bennett Rd/Greenhorn Rd — EASTBOUND

AM	NOON	PM	
91	0	76	
0	0	0	0
29	0	18	0
21	0	21	0
12	0	19	0
AM	NOON	PM	

E Bennett Rd/Greenhorn Rd — WESTBOUND

PM	NOON	AM	
75	0	171	0
37	0	45	0
23	0	25	0
1	0	0	0
194	0	84	
PM	NOON	AM	

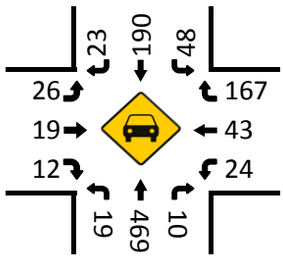
CONTROL: 0

	AM	NOON	PM
TEV	1078	0	1199
PHF	0.93		0.99

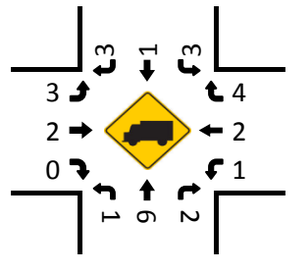
Brunswick Rd — NORTHBOUND

PM	525	0	9	311	34	PM
NOON	0	0	0	0	0	NOON
AM	228	0	20	475	12	AM

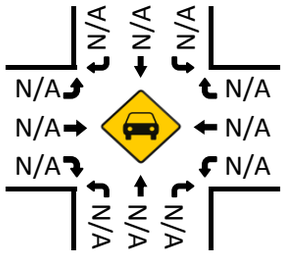
Cars (AM)



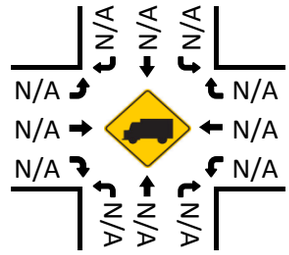
HT (AM)



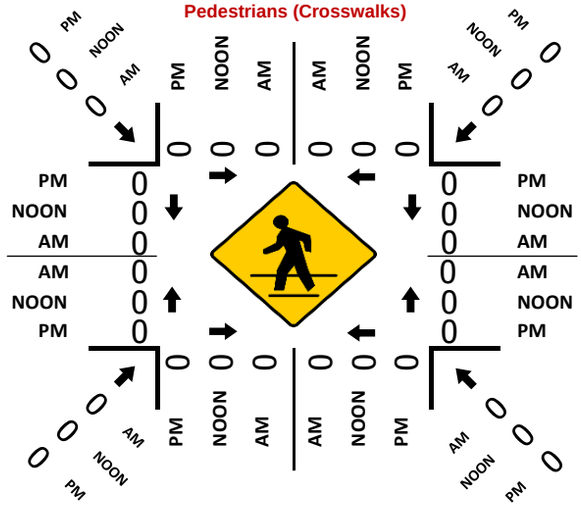
Cars (NOON)



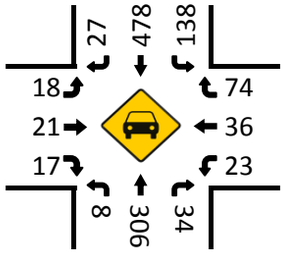
HT (NOON)



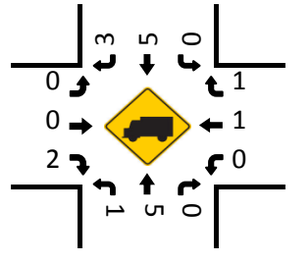
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Brunswick Rd & E Bennett Rd/Greenhorn Rd
City: Grass Valley
Control:

Project ID: 19-07290-013
Date: 8/28/2019

Total

NS/EW Streets:	Brunswick Rd				Brunswick Rd				E Bennett Rd/Greenhorn Rd				E Bennett Rd/Greenhorn 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	7	53	1	0	3	23	2	0	2	9	1	0	9	6	12	0	128
6:45 AM	3	86	3	0	4	23	2	0	4	0	0	0	6	5	19	0	155
7:00 AM	3	65	2	0	8	21	6	0	1	0	5	0	4	1	28	0	144
7:15 AM	3	77	0	0	10	30	1	0	3	1	2	0	9	11	17	0	164
7:30 AM	3	123	1	0	7	34	2	0	6	3	3	0	7	11	32	0	232
7:45 AM	5	132	2	0	14	37	6	0	8	8	4	0	4	13	55	0	288
8:00 AM	4	127	1	0	10	48	6	0	9	4	4	0	14	16	48	0	291
8:15 AM	3	120	4	0	11	58	6	0	11	4	1	0	3	5	32	0	258
8:30 AM	8	96	5	0	16	48	8	0	1	5	3	0	4	11	36	0	241
8:45 AM	6	97	0	0	22	55	2	0	9	8	0	0	8	12	29	0	248
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	45	976	19	0	105	377	41	0	54	42	23	0	68	91	308	0	2149
APPROACH %'s :	4.33%	93.85%	1.83%	0.00%	20.08%	72.08%	7.84%	0.00%	45.38%	35.29%	19.33%	0.00%	14.56%	19.49%	65.95%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	20	475	12	0	51	191	26	0	29	21	12	0	25	45	171	0	1078
PEAK HR FACTOR :	0.625	0.900	0.600	0.000	0.797	0.823	0.813	0.000	0.659	0.656	0.750	0.000	0.446	0.703	0.777	0.000	0.926
	0.912				0.893				0.775				0.772				

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	74	3	0	25	116	7	0	5	8	4	0	3	7	20	0	273
3:45 PM	1	81	7	0	24	110	11	0	8	6	2	0	8	10	23	0	291
4:00 PM	3	84	7	0	36	106	5	0	2	9	3	0	1	3	16	0	275
4:15 PM	2	87	6	0	33	93	1	0	7	6	1	0	5	3	14	0	258
4:30 PM	4	81	7	0	29	129	6	0	6	4	5	0	6	6	20	0	303
4:45 PM	3	80	6	0	36	116	6	0	4	5	6	0	9	12	20	1	304
5:00 PM	1	70	12	0	32	130	5	0	4	10	6	0	4	7	12	0	293
5:15 PM	1	80	9	0	41	108	13	0	4	2	2	0	4	12	23	0	299
5:30 PM	4	55	11	0	26	100	8	0	2	4	3	0	4	5	18	0	240
5:45 PM	3	56	2	0	37	84	1	0	4	6	1	0	5	8	18	0	225
6:00 PM	2	47	6	0	26	81	2	0	2	7	2	0	3	4	10	0	192
6:15 PM	2	52	4	0	27	76	4	0	3	6	1	0	3	3	15	0	196
6:30 PM	1	53	2	0	23	76	3	0	1	4	2	0	2	7	12	0	186
6:45 PM	0	44	2	0	18	80	6	0	3	6	0	0	4	3	7	0	173
7:00 PM	1	39	3	0	17	64	4	0	5	8	0	0	1	2	6	0	150
7:15 PM	1	34	4	0	24	48	3	0	2	4	0	0	4	2	13	0	139
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	30	1017	91	0	454	1517	85	0	62	95	38	0	66	94	247	1	3797
APPROACH %'s :	2.64%	89.37%	8.00%	0.00%	22.08%	73.78%	4.13%	0.00%	31.79%	48.72%	19.49%	0.00%	16.18%	23.04%	60.54%	0.25%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	9	311	34	0	138	483	30	0	18	21	19	0	23	37	75	1	1199
PEAK HR FACTOR :	0.563	0.960	0.708	0.000	0.841	0.929	0.577	0.000	0.750	0.525	0.792	0.000	0.639	0.771	0.815	0.250	0.986
	0.962				0.975				0.725				0.810				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Brunswick Rd & E Bennett Rd/Greenhorn Rd
City: Grass Valley
Control: 0

Project ID: 19-07290-013
Date: 8/28/2019

Cars

NS/EW Streets:	Brunswick Rd				Brunswick Rd				E Bennett Rd/Greenhorn Rd				E Bennett Rd/Greenhorn 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	7	50	1	0	3	22	2	0	2	9	1	0	8	6	12	0	123
6:45 AM	3	82	3	0	4	20	2	0	4	0	0	0	6	5	17	0	146
7:00 AM	3	57	1	0	7	20	6	0	1	0	4	0	4	1	28	0	132
7:15 AM	3	77	0	0	9	30	0	0	2	1	2	0	9	10	15	0	158
7:30 AM	3	122	1	0	7	32	2	0	6	3	1	0	7	11	31	0	226
7:45 AM	4	130	2	0	13	36	6	0	7	6	4	0	4	13	53	0	278
8:00 AM	4	123	0	0	9	48	6	0	7	4	4	0	14	14	47	0	280
8:15 AM	3	120	3	0	11	58	5	0	11	4	1	0	3	5	31	0	255
8:30 AM	8	96	5	0	15	48	6	0	1	5	3	0	3	11	36	0	237
8:45 AM	6	95	0	0	22	53	2	0	7	8	0	0	8	12	29	0	242
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	44	952	16	0	100	367	37	0	48	40	20	0	66	88	299	0	2077
APPROACH %'s :	4.35%	94.07%	1.58%	0.00%	19.84%	72.82%	7.34%	0.00%	44.44%	37.04%	18.52%	0.00%	14.57%	19.43%	66.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	19	469	10	0	48	190	23	0	26	19	12	0	24	43	167	0	1050
PEAK HR FACTOR :	0.59	0.902	0.500	0.000	0.800	0.819	0.958	0.000	0.591	0.792	0.750	0.000	0.429	0.768	0.788	0.000	0.938
		0.915				0.882				0.838				0.780			

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	72	2	0	24	115	7	0	4	7	3	0	2	7	20	0	263
3:45 PM	1	78	7	0	24	108	11	0	8	6	1	0	8	9	23	0	284
4:00 PM	2	81	7	0	35	104	5	0	2	9	3	0	1	3	16	0	268
4:15 PM	1	86	5	0	33	91	1	0	6	6	1	0	4	3	14	0	251
4:30 PM	3	81	7	0	29	125	4	0	6	4	5	0	6	6	20	0	296
4:45 PM	3	78	6	0	36	116	6	0	4	5	5	0	9	11	19	1	299
5:00 PM	1	68	12	0	32	129	4	0	4	10	5	0	4	7	12	0	288
5:15 PM	1	79	9	0	41	108	13	0	4	2	2	0	4	12	23	0	298
5:30 PM	3	54	11	0	26	100	8	0	2	4	3	0	4	5	17	0	237
5:45 PM	3	56	2	0	35	84	1	0	4	6	1	0	5	8	18	0	223
6:00 PM	2	47	6	0	26	81	2	0	2	7	2	0	3	4	10	0	192
6:15 PM	2	51	4	0	27	76	4	0	3	6	1	0	3	3	15	0	195
6:30 PM	1	53	2	0	22	76	3	0	1	4	2	0	2	7	12	0	185
6:45 PM	0	44	2	0	18	79	6	0	3	6	0	0	4	3	7	0	172
7:00 PM	1	39	3	0	17	62	4	0	5	8	0	0	1	2	6	0	148
7:15 PM	1	32	4	0	24	48	3	0	2	4	0	0	4	2	13	0	137
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	25	999	89	0	449	1502	82	0	60	94	34	0	64	92	245	1	3736
APPROACH %'s :	2.25%	89.76%	8.00%	0.00%	22.09%	73.88%	4.03%	0.00%	31.91%	50.00%	18.09%	0.00%	15.92%	22.89%	60.95%	0.25%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	8	306	34	0	138	478	27	0	18	21	17	0	23	36	74	1	1181
PEAK HR FACTOR :	0.67	0.944	0.708	0.000	0.841	0.926	0.519	0.000	0.750	0.525	0.850	0.000	0.639	0.750	0.804	0.250	0.987
		0.956				0.974				0.737				0.838			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Brunswick Rd & E Bennett Rd/Greenhorn Rd
City: Grass Valley
Control: 0

Project ID: 19-07290-013
Date: 8/28/2019

HT

NS/EW Streets:	Brunswick Rd				Brunswick Rd				E Bennett Rd/Greenhorn Rd				E Bennett Rd/Greenhorn 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	3	0	0	0	1	0	0	0	0	0	0	1	0	0	0	5
6:45 AM	0	4	0	0	0	3	0	0	0	0	0	0	0	0	2	0	9
7:00 AM	0	8	1	0	1	1	0	0	0	0	1	0	0	0	0	0	12
7:15 AM	0	0	0	0	1	0	1	0	1	0	0	0	0	1	2	0	6
7:30 AM	0	1	0	0	0	2	0	0	0	0	2	0	0	0	1	0	6
7:45 AM	1	2	0	0	1	1	0	0	1	2	0	0	0	0	2	0	10
8:00 AM	0	4	1	0	1	0	0	0	2	0	0	0	0	2	1	0	11
8:15 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	3
8:30 AM	0	0	0	0	1	0	2	0	0	0	0	0	1	0	0	0	4
8:45 AM	0	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	6
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	24	3	0	5	10	4	0	6	2	3	0	2	3	9	0	72
APPROACH %'s :	3.57%	85.71%	10.71%	0.00%	26.32%	52.63%	21.05%	0.00%	54.55%	18.18%	27.27%	0.00%	14.29%	21.43%	64.29%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	1	6	2	0	3	1	3	0	3	2	0	0	1	2	4	0	28
PEAK HR FACTOR :	0.250	0.375	0.500	0.000	0.750	0.250	0.375	0.000	0.375	0.250	0.000	0.000	0.250	0.250	0.500	0.000	0.636
		0.450				0.583				0.417				0.583			

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	2	1	0	1	1	0	0	1	1	1	0	1	0	0	0	10
3:45 PM	0	3	0	0	0	2	0	0	0	0	1	0	0	1	0	0	7
4:00 PM	1	3	0	0	1	2	0	0	0	0	0	0	0	0	0	0	7
4:15 PM	1	1	1	0	0	2	0	0	1	0	0	0	1	0	0	0	7
4:30 PM	1	0	0	0	0	4	2	0	0	0	0	0	0	0	0	0	7
4:45 PM	0	2	0	0	0	0	0	0	0	0	1	0	0	1	1	0	5
5:00 PM	0	2	0	0	0	1	1	0	0	0	1	0	0	0	0	0	5
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3
5:45 PM	0	0	0	0	2	0	0	0	0	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	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
6:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:00 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
7:15 PM	0	2	0	0	0	0	0	0	0	0	0	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	18	2	0	5	15	3	0	2	1	4	0	2	2	2	0	61
APPROACH %'s :	20.00%	72.00%	8.00%	0.00%	21.74%	65.22%	13.04%	0.00%	28.57%	14.29%	57.14%	0.00%	33.33%	33.33%	33.33%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	1	5	0	0	0	5	3	0	0	0	2	0	0	1	1	0	18
PEAK HR FACTOR :	0.25	0.625	0.000	0.000	0.000	0.313	0.375	0.000	0.000	0.000	0.500	0.000	0.000	0.250	0.250	0.000	0.643
		0.750				0.333				0.500				0.250			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Brunswick Rd & E Bennett Rd/Greenhorn Rd
City: Grass Valley
Control: 0

Project ID: 19-07290-013
Date: 8/28/2019

Bikes

NS/EW Streets:	Brunswick Rd				Brunswick Rd				E Bennett Rd/Greenhorn Rd				E Bennett Rd/Greenhorn 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	1	0	0	0	0	0	0	0	0	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 :	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%					0.00%	0.00%	100.00%	0.00%					
PEAK HR :	07:45 AM - 08:45 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	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
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	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
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	1	0	0	0	0	0	0	0	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0
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	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	3
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%					0.00%	0.00%	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	0	0	0	0	0	0	0	0
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	0.000	0.000	0.000	

National Data & Surveying Services

Intersection Turning Movement Count

Location: Brunswick Rd & E Bennett Rd/Greenhorn Rd
City: Grass Valley

Project ID: 19-07290-013
Date: 8/28/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Brunswick Rd		Brunswick Rd		E Bennett Rd/Greenhorn Rd		E Bennett Rd/Greenhorn 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 :	07:45 AM - 08:45 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	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	0	0	0	0	0	0
APPROACH %'s :									
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

SR 174 & Brunswick Rd

Peak Hour Turning Movement Count

ID: 19-07290-014
City: Grass Valley

Day: Wednesday
Date: 08/28/2019

PEAK HOURS

AM: 07:45 AM - 08:45 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 174 — SOUTHBOUND

AM	95	140	1	0	480	AM
NOON	0	0	0	0	0	NOON
PM	107	385	2	0	331	PM

EASTBOUND (Brunswick Rd)

AM	NOON	PM	
360	0	346	
0	0	0	0
101	0	72	0
9	0	0	0
160	0	226	0

WESTBOUND (Brunswick Rd)

	PM	NOON	AM
0	5	0	4
0	0	0	2
0	0	0	1
0	0	0	0
	2	0	16

CONTROL

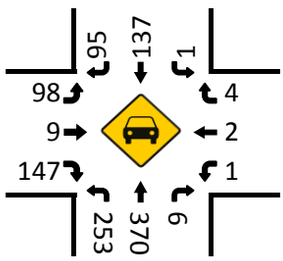
0

TEV	1157	0	1290
	AM	NOON	PM
PHF	0.94		0.92

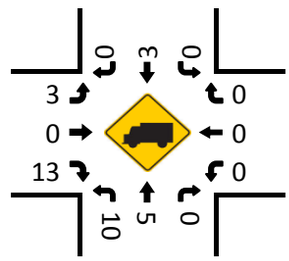
NORTHBOUND — SR 174

PM	611	0	239	254	0	PM
NOON	0	0	0	0	0	NOON
AM	301	0	263	375	6	AM

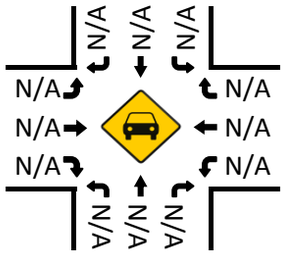
Cars (AM)



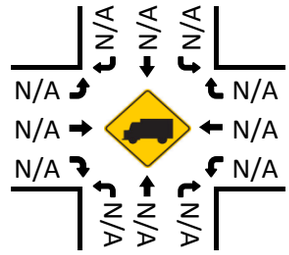
HT (AM)



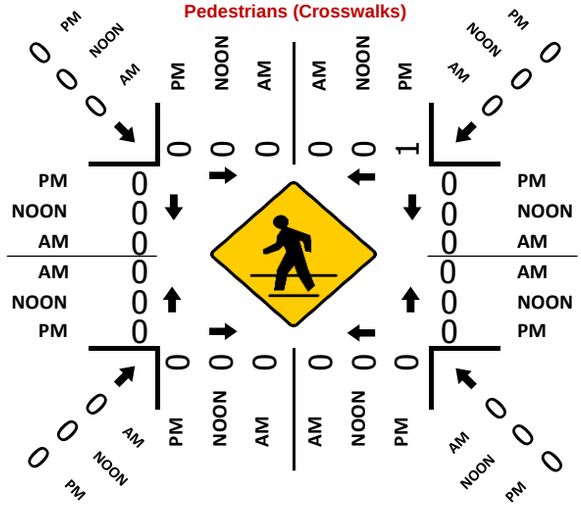
Cars (NOON)



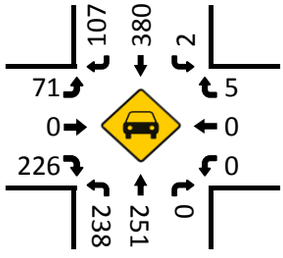
HT (NOON)



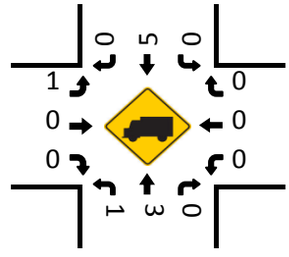
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 174 & Brunswick Rd
City: Grass Valley
Control:

Project ID: 19-07290-014
Date: 8/28/2019

Total

NS/EW Streets:	SR 174				SR 174				Brunswick Rd				Brunswick 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	20	60	0	0	0	29	7	0	8	0	27	0	0	0	0	0	151
6:45 AM	30	60	0	0	0	27	14	0	14	0	25	0	0	0	0	0	170
7:00 AM	36	40	0	0	0	26	5	0	11	0	26	0	0	0	0	0	144
7:15 AM	41	67	0	0	1	31	15	0	12	0	45	0	0	0	0	0	212
7:30 AM	61	88	0	0	1	24	18	0	29	0	29	0	0	0	0	0	250
7:45 AM	63	113	0	0	0	29	15	0	31	3	39	0	0	1	0	0	294
8:00 AM	81	86	2	0	0	34	34	0	25	1	44	0	0	0	2	0	309
8:15 AM	81	94	3	0	0	40	31	0	21	1	31	0	0	0	1	0	303
8:30 AM	38	82	1	0	1	37	15	0	24	4	46	0	1	1	1	0	251
8:45 AM	48	81	2	0	1	40	8	0	18	2	33	0	0	0	1	0	234
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	499	771	8	0	4	317	162	0	193	11	345	0	1	2	5	0	2318
APPROACH %'s :	39.05%	60.33%	0.63%	0.00%	0.83%	65.63%	33.54%	0.00%	35.15%	2.00%	62.84%	0.00%	12.50%	25.00%	62.50%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	263	375	6	0	1	140	95	0	101	9	160	0	1	2	4	0	1157
PEAK HR FACTOR :	0.812	0.830	0.500	0.000	0.250	0.875	0.699	0.000	0.815	0.563	0.870	0.000	0.250	0.500	0.500	0.000	0.936
	0.904				0.831				0.912				0.583				

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	43	57	0	0	2	81	28	0	13	0	48	0	0	0	0	0	272
3:45 PM	61	65	1	0	1	88	28	0	20	3	52	0	0	0	1	0	320
4:00 PM	45	80	1	0	0	90	20	0	22	1	61	0	0	1	4	0	325
4:15 PM	37	68	0	0	1	68	27	0	20	0	44	0	0	0	1	0	266
4:30 PM	47	70	0	0	1	105	22	0	18	0	53	0	0	0	1	0	317
4:45 PM	71	58	0	0	0	94	30	0	16	0	60	0	0	0	1	0	330
5:00 PM	66	68	0	0	1	84	39	0	21	0	70	0	0	0	3	0	352
5:15 PM	55	58	0	0	0	102	16	0	17	0	43	0	0	0	0	0	291
5:30 PM	45	51	0	0	0	79	12	0	20	1	42	0	0	1	0	0	251
5:45 PM	36	51	0	0	0	74	15	0	8	0	43	0	0	0	0	0	227
6:00 PM	32	40	0	0	0	67	13	0	15	0	36	0	0	0	0	0	203
6:15 PM	27	40	1	0	0	64	14	0	15	1	35	0	0	0	1	0	198
6:30 PM	20	42	1	0	1	58	11	0	7	0	27	0	0	1	0	0	168
6:45 PM	20	38	0	0	0	73	12	0	6	0	36	0	0	0	0	0	185
7:00 PM	20	46	0	0	0	53	11	0	4	0	30	0	0	0	0	0	164
7:15 PM	19	30	0	0	0	41	8	0	5	0	41	0	0	0	0	0	144
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	644	862	4	0	7	1221	306	0	227	6	721	0	0	3	12	0	4013
APPROACH %'s :	42.65%	57.09%	0.26%	0.00%	0.46%	79.60%	19.95%	0.00%	23.79%	0.63%	75.58%	0.00%	0.00%	20.00%	80.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	239	254	0	0	2	385	107	0	72	0	226	0	0	0	5	0	1290
PEAK HR FACTOR :	0.842	0.907	0.000	0.000	0.500	0.917	0.686	0.000	0.857	0.000	0.807	0.000	0.000	0.000	0.417	0.000	0.916
	0.920				0.965				0.819				0.417				

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 174 & Brunswick Rd
City: Grass Valley
Control: 0

Project ID: 19-07290-014
Date: 8/28/2019

Cars

NS/EW Streets:	SR 174				SR 174				Brunswick Rd				Brunswick 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	20	58	0	0	0	29	6	0	8	0	26	0	0	0	0	0	147
6:45 AM	30	60	0	0	0	21	14	0	13	0	23	0	0	0	0	0	161
7:00 AM	34	40	0	0	0	23	4	0	10	0	26	0	0	0	0	0	137
7:15 AM	39	67	0	0	1	31	15	0	12	0	41	0	0	0	0	0	206
7:30 AM	59	88	0	0	1	20	18	0	29	0	28	0	0	0	0	0	243
7:45 AM	61	111	0	0	0	27	15	0	30	3	37	0	0	1	0	0	285
8:00 AM	78	83	2	0	0	34	34	0	24	1	41	0	0	0	2	0	299
8:15 AM	77	94	3	0	0	39	31	0	20	1	28	0	0	0	1	0	294
8:30 AM	37	82	1	0	1	37	15	0	24	4	41	0	1	1	1	0	245
8:45 AM	48	79	2	0	1	38	8	0	18	2	33	0	0	0	1	0	230
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	483	762	8	0	4	299	160	0	188	11	324	0	1	2	5	0	2247
APPROACH %'s :	38.55%	60.81%	0.64%	0.00%	0.86%	64.58%	34.56%	0.00%	35.95%	2.10%	61.95%	0.00%	12.50%	25.00%	62.50%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	253	370	6	0	1	137	95	0	98	9	147	0	1	2	4	0	1123
PEAK HR FACTOR :	0.81	0.833	0.500	0.000	0.250	0.878	0.699	0.000	0.817	0.563	0.896	0.000	0.250	0.500	0.500	0.000	0.939
		0.904				0.832				0.907				0.583			

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	40	56	0	0	1	80	28	0	11	0	46	0	0	0	0	0	262
3:45 PM	61	62	1	0	1	86	28	0	18	3	48	0	0	0	1	0	309
4:00 PM	43	76	1	0	0	88	19	0	22	1	59	0	0	1	4	0	314
4:15 PM	35	67	0	0	1	65	27	0	20	0	43	0	0	0	1	0	259
4:30 PM	46	69	0	0	1	101	22	0	18	0	53	0	0	0	1	0	311
4:45 PM	71	58	0	0	0	94	30	0	16	0	60	0	0	0	1	0	330
5:00 PM	66	66	0	0	1	83	39	0	20	0	70	0	0	0	3	0	348
5:15 PM	55	58	0	0	0	102	16	0	17	0	43	0	0	0	0	0	291
5:30 PM	45	48	0	0	0	79	12	0	20	1	42	0	0	1	0	0	248
5:45 PM	35	51	0	0	0	74	15	0	8	0	42	0	0	0	0	0	225
6:00 PM	32	40	0	0	0	67	13	0	14	0	36	0	0	0	0	0	202
6:15 PM	26	40	1	0	0	64	14	0	15	1	35	0	0	0	1	0	197
6:30 PM	19	42	1	0	1	58	11	0	7	0	26	0	0	1	0	0	166
6:45 PM	20	37	0	0	0	72	12	0	6	0	36	0	0	0	0	0	183
7:00 PM	20	46	0	0	0	52	11	0	4	0	30	0	0	0	0	0	163
7:15 PM	19	27	0	0	0	41	8	0	5	0	41	0	0	0	0	0	141
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	633	843	4	0	6	1206	305	0	221	6	710	0	0	3	12	0	3949
APPROACH %'s :	42.77%	56.96%	0.27%	0.00%	0.40%	79.50%	20.11%	0.00%	23.59%	0.64%	75.77%	0.00%	0.00%	20.00%	80.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	238	251	0	0	2	380	107	0	71	0	226	0	0	0	5	0	1280
PEAK HR FACTOR :	0.84	0.909	0.000	0.000	0.500	0.931	0.686	0.000	0.888	0.000	0.807	0.000	0.000	0.000	0.417	0.000	0.920
		0.926				0.986				0.825				0.417			

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 174 & Brunswick Rd
City: Grass Valley
Control: 0

Project ID: 19-07290-014
Date: 8/28/2019

HT

NS/EW Streets:	SR 174				SR 174				Brunswick Rd				Brunswick 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	2	0	0	0	0	1	0	0	0	1	0	0	0	0	0	4
6:45 AM	0	0	0	0	0	6	0	0	1	0	2	0	0	0	0	0	9
7:00 AM	2	0	0	0	0	3	1	0	1	0	0	0	0	0	0	0	7
7:15 AM	2	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	6
7:30 AM	2	0	0	0	0	4	0	0	0	0	1	0	0	0	0	0	7
7:45 AM	2	2	0	0	0	2	0	0	1	0	2	0	0	0	0	0	9
8:00 AM	3	3	0	0	0	0	0	0	1	0	3	0	0	0	0	0	10
8:15 AM	4	0	0	0	0	1	0	0	1	0	3	0	0	0	0	0	9
8:30 AM	1	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	6
8:45 AM	0	2	0	0	0	2	0	0	0	0	0	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 :	16	9	0	0	0	18	2	0	5	0	21	0	0	0	0	0	71
APPROACH %'s :	64.00%	36.00%	0.00%	0.00%	0.00%	90.00%	10.00%	0.00%	19.23%	0.00%	80.77%	0.00%					
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	10	5	0	0	0	3	0	0	3	0	13	0	0	0	0	0	34
PEAK HR FACTOR :	0.625	0.417	0.000	0.000	0.000	0.375	0.000	0.000	0.750	0.000	0.650	0.000	0.000	0.000	0.000	0.000	0.850
	0.625				0.375				0.800								

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	3	1	0	0	1	1	0	0	2	0	2	0	0	0	0	0	10
3:45 PM	0	3	0	0	0	2	0	0	2	0	4	0	0	0	0	0	11
4:00 PM	2	4	0	0	0	2	1	0	0	0	2	0	0	0	0	0	11
4:15 PM	2	1	0	0	0	3	0	0	0	0	1	0	0	0	0	0	7
4:30 PM	1	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	6
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	2	0	0	0	1	0	0	1	0	0	0	0	0	0	0	4
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:45 PM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
6:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
6:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:30 PM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
6:45 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
7:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:15 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	11	19	0	0	1	15	1	0	6	0	11	0	0	0	0	0	64
APPROACH %'s :	36.67%	63.33%	0.00%	0.00%	5.88%	88.24%	5.88%	0.00%	35.29%	0.00%	64.71%	0.00%					
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	1	3	0	0	0	5	0	0	1	0	0	0	0	0	0	0	10
PEAK HR FACTOR :	0.25	0.375	0.000	0.000	0.000	0.313	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.417
	0.500				0.313				0.250								

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 174 & Brunswick Rd
City: Grass Valley
Control: 0

Project ID: 19-07290-014
Date: 8/28/2019

Bikes

NS/EW Streets:	SR 174				SR 174				Brunswick Rd				Brunswick 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	1	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	1	0	0	0	0	0	0	0	0	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 :	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%					100.00%	0.00%	0.00%	0.00%					
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	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	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	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	1	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0
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	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
APPROACH %'s :					100.00%	0.00%	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	0	0	0	0
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	0.000	0.000	0.000	

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 174 & Brunswick Rd
City: Grass Valley

Project ID: 19-07290-014
Date: 8/28/2019

Pedestrians (Crosswalks)

NS/EW Streets:	SR 174		SR 174		Brunswick Rd		Brunswick 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 :	07:45 AM - 08:45 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	1	0	0	0	0	0	0	1
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	0	0	0	0	0
6:15 PM	0	2	0	0	0	0	1	1	4
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	3	0	0	0	0	1	1	5
APPROACH %'s :	0.00%	100.00%					50.00%	50.00%	
PEAK HR :	04:30 PM - 05:30 PM								TOTAL
PEAK HR VOL :	0	1	0	0	0	0	0	0	1
PEAK HR FACTOR :		0.250							0.250
	0.250								

Prepared by National Data & Surveying Services

Brunswick Rd & Project Dwy

Peak Hour Turning Movement Count

ID: 19-07290-015
City: Grass Valley

Day: Wednesday
Date: 08/28/2019

PEAK HOURS

AM: 07:30 AM - 08:30 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

Brunswick Rd — SOUTHBOUND

AM	4	213	0	0	520	AM
NOON	0	0	0	0	0	NOON
PM	0	515	0	0	344	PM

Project Dwy — EASTBOUND

AM	NOON	PM	
7	0	1	
0	0	0	0
4	0	3	0
0	0	0	0
3	0	1	0
AM	NOON	PM	

WESTBOUND — Project Dwy

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

CONTROL

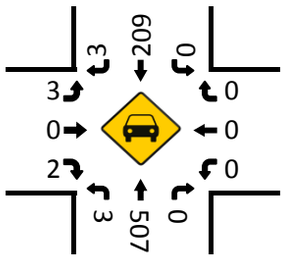
0

TEV	743	0	861
	AM	NOON	PM
PHF	0.96		0.92

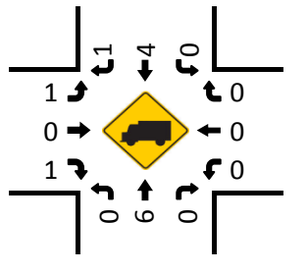
Brunswick Rd — NORTHBOUND

PM	516	0	1	341	0	PM
NOON	0	0	0	0	0	NOON
AM	216	0	3	516	0	AM

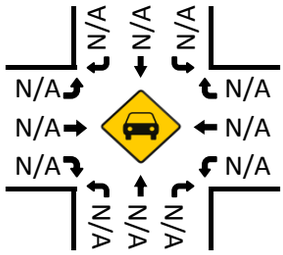
Cars (AM)



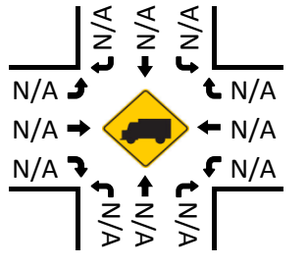
HT (AM)



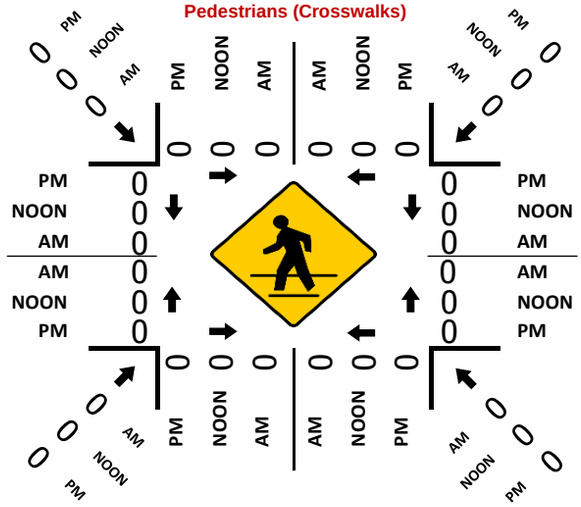
Cars (NOON)



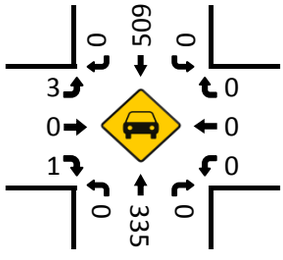
HT (NOON)



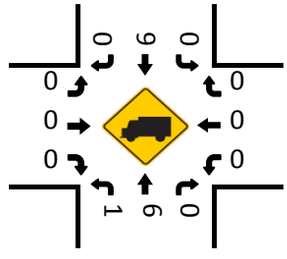
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Brunswick Rd & Project Dwy
City: Grass Valley
Control:

Project ID: 19-07290-015
Date: 8/28/2019

Total

NS/EW Streets:	Brunswick Rd				Brunswick Rd				Project Dwy				Project Dwy				
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	1	62	0	0	0	34	0	0	3	0	3	0	0	0	0	0	103
6:45 AM	1	85	0	0	0	27	0	0	10	0	7	0	0	0	0	0	130
7:00 AM	0	50	0	0	0	31	0	0	14	0	2	0	0	0	0	0	97
7:15 AM	0	87	0	0	0	40	0	0	1	0	0	0	0	0	0	0	128
7:30 AM	0	126	0	0	0	39	1	0	3	0	1	0	0	0	0	0	170
7:45 AM	2	145	0	0	0	44	2	0	0	0	0	0	0	0	0	0	193
8:00 AM	1	125	0	0	0	65	1	0	0	0	2	0	0	0	0	0	194
8:15 AM	0	120	0	0	0	65	0	0	1	0	0	0	0	0	0	0	186
8:30 AM	0	112	0	0	0	51	2	0	0	0	1	0	0	0	0	0	166
8:45 AM	0	99	0	0	0	63	1	0	0	0	0	0	0	0	0	0	163
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	5	1011	0	0	0	459	7	0	32	0	16	0	0	0	0	0	1530
APPROACH %'s :	0.49%	99.51%	0.00%	0.00%	0.00%	98.50%	1.50%	0.00%	66.67%	0.00%	33.33%	0.00%					
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	3	516	0	0	0	213	4	0	4	0	3	0	0	0	0	0	743
PEAK HR FACTOR :	0.375	0.890	0.000	0.000	0.000	0.819	0.500	0.000	0.333	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.957
		0.883				0.822				0.438							

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	75	0	0	0	121	0	0	0	0	1	0	0	0	0	0	197
3:45 PM	1	84	0	0	0	117	1	0	7	0	4	0	0	0	0	0	214
4:00 PM	0	91	0	0	0	112	0	0	5	0	2	0	0	0	0	0	210
4:15 PM	0	89	0	1	0	98	1	0	0	0	1	0	0	0	0	0	190
4:30 PM	1	94	0	0	0	138	0	0	0	0	0	0	0	0	0	0	233
4:45 PM	0	83	0	0	0	131	0	0	2	0	1	0	0	0	0	0	217
5:00 PM	0	79	0	0	0	137	0	0	0	0	0	0	0	0	0	0	216
5:15 PM	0	85	0	0	0	109	0	0	1	0	0	0	0	0	0	0	195
5:30 PM	0	72	0	0	0	111	0	0	0	0	0	0	0	0	0	0	183
5:45 PM	1	63	0	0	0	89	0	0	1	0	0	0	0	0	0	0	154
6:00 PM	0	51	0	0	0	85	0	0	0	0	0	0	0	0	0	0	136
6:15 PM	0	60	0	0	0	79	0	1	0	0	0	0	0	0	0	0	140
6:30 PM	0	51	0	0	0	77	0	0	0	0	0	0	0	0	0	0	128
6:45 PM	0	46	0	0	0	89	0	0	0	0	0	0	0	0	0	0	135
7:00 PM	0	44	0	0	0	64	0	0	0	0	0	0	0	0	0	0	108
7:15 PM	0	36	0	0	0	56	0	0	0	0	0	0	0	0	0	0	92
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	3	1103	0	1	0	1613	2	1	16	0	9	0	0	0	0	0	2748
APPROACH %'s :	0.27%	99.64%	0.00%	0.09%	0.00%	99.81%	0.12%	0.06%	64.00%	0.00%	36.00%	0.00%					
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	1	341	0	0	0	515	0	0	3	0	1	0	0	0	0	0	861
PEAK HR FACTOR :	0.250	0.907	0.000	0.000	0.000	0.933	0.000	0.000	0.375	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.924
		0.900				0.933				0.333							

National Data & Surveying Services

Intersection Turning Movement Count

Location: Brunswick Rd & Project Dwy
City: Grass Valley
Control: 0

Project ID: 19-07290-015
Date: 8/28/2019

Cars

NS/EW Streets:	Brunswick Rd				Brunswick Rd				Project Dwy				Project Dwy				
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	1	60	0	0	0	32	0	0	2	0	2	0	0	0	0	0	97
6:45 AM	1	84	0	0	0	24	0	0	7	0	3	0	0	0	0	0	119
7:00 AM	0	48	0	0	0	29	0	0	7	0	1	0	0	0	0	0	85
7:15 AM	0	87	0	0	0	40	0	0	1	0	0	0	0	0	0	0	128
7:30 AM	0	126	0	0	0	37	0	0	2	0	0	0	0	0	0	0	165
7:45 AM	2	141	0	0	0	42	2	0	0	0	0	0	0	0	0	0	187
8:00 AM	1	121	0	0	0	65	1	0	0	0	2	0	0	0	0	0	190
8:15 AM	0	119	0	0	0	65	0	0	1	0	0	0	0	0	0	0	185
8:30 AM	0	112	0	0	0	50	2	0	0	0	1	0	0	0	0	0	165
8:45 AM	0	97	0	0	0	61	1	0	0	0	0	0	0	0	0	0	159
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	5	995	0	0	0	445	6	0	20	0	9	0	0	0	0	0	1480
APPROACH %'s :	0.50%	99.50%	0.00%	0.00%	0.00%	98.67%	1.33%	0.00%	68.97%	0.00%	31.03%	0.00%					
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	3	507	0	0	0	209	3	0	3	0	2	0	0	0	0	0	727
PEAK HR FACTOR :	0.38	0.899	0.000	0.000	0.000	0.804	0.375	0.000	0.375	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.957
		0.892				0.803				0.625							

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	71	0	0	0	118	0	0	0	0	1	0	0	0	0	0	190
3:45 PM	0	81	0	0	0	114	1	0	7	0	4	0	0	0	0	0	207
4:00 PM	0	87	0	0	0	110	0	0	5	0	2	0	0	0	0	0	204
4:15 PM	0	86	0	1	0	94	1	0	0	0	1	0	0	0	0	0	183
4:30 PM	0	93	0	0	0	135	0	0	0	0	0	0	0	0	0	0	228
4:45 PM	0	82	0	0	0	130	0	0	2	0	1	0	0	0	0	0	215
5:00 PM	0	76	0	0	0	135	0	0	0	0	0	0	0	0	0	0	211
5:15 PM	0	84	0	0	0	109	0	0	1	0	0	0	0	0	0	0	194
5:30 PM	0	70	0	0	0	111	0	0	0	0	0	0	0	0	0	0	181
5:45 PM	1	63	0	0	0	89	0	0	1	0	0	0	0	0	0	0	154
6:00 PM	0	51	0	0	0	85	0	0	0	0	0	0	0	0	0	0	136
6:15 PM	0	59	0	0	0	79	0	1	0	0	0	0	0	0	0	0	139
6:30 PM	0	51	0	0	0	77	0	0	0	0	0	0	0	0	0	0	128
6:45 PM	0	46	0	0	0	88	0	0	0	0	0	0	0	0	0	0	134
7:00 PM	0	44	0	0	0	62	0	0	0	0	0	0	0	0	0	0	106
7:15 PM	0	34	0	0	0	56	0	0	0	0	0	0	0	0	0	0	90
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	1078	0	1	0	1592	2	1	16	0	9	0	0	0	0	0	2700
APPROACH %'s :	0.09%	99.81%	0.00%	0.09%	0.00%	99.81%	0.13%	0.06%	64.00%	0.00%	36.00%	0.00%					
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	335	0	0	0	509	0	0	3	0	1	0	0	0	0	0	848
PEAK HR FACTOR :	0.00	0.901	0.000	0.000	0.000	0.943	0.000	0.000	0.375	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.930
		0.901				0.943				0.333							

National Data & Surveying Services

Intersection Turning Movement Count

Location: Brunswick Rd & Project Dwy
City: Grass Valley
Control: 0

Project ID: 19-07290-015
Date: 8/28/2019

HT

NS/EW Streets:	Brunswick Rd				Brunswick Rd				Project Dwy				Project Dwy				
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	2	0	0	0	2	0	0	1	0	1	0	0	0	0	0	6
6:45 AM	0	1	0	0	0	3	0	0	3	0	4	0	0	0	0	0	11
7:00 AM	0	2	0	0	0	2	0	0	7	0	1	0	0	0	0	0	12
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	2	1	0	1	0	1	0	0	0	0	0	5
7:45 AM	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	6
8:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
8:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	2	0	0	0	2	0	0	0	0	0	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	16	0	0	0	14	1	0	12	0	7	0	0	0	0	0	50
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	93.33%	6.67%	0.00%	63.16%	0.00%	36.84%	0.00%					
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	9	0	0	0	4	1	0	1	0	1	0	0	0	0	0	16
PEAK HR FACTOR :	0.000	0.563	0.000	0.000	0.000	0.500	0.250	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.667
		0.563				0.417				0.250							

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	4	0	0	0	3	0	0	0	0	0	0	0	0	0	0	7
3:45 PM	1	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	7
4:00 PM	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	6
4:15 PM	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	7
4:30 PM	1	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	5
4:45 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:00 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
7:15 PM	0	2	0	0	0	0	0	0	0	0	0	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 :	2	25	0	0	0	21	0	0	0	0	0	0	0	0	0	0	48
APPROACH %'s :	7.41%	92.59%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	1	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	13
PEAK HR FACTOR :	0.25	0.500	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.650
		0.583				0.500											

National Data & Surveying Services

Intersection Turning Movement Count

Location: Brunswick Rd & Project Dwy
City: Grass Valley
Control: 0

Project ID: 19-07290-015
Date: 8/28/2019

Bikes

NS/EW Streets:	Brunswick Rd				Brunswick Rd				Project Dwy				Project Dwy				
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	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
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	1	0	0	0	0	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 :	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 :	07:30 AM - 08:30 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	1	0	0	0	1	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	0	0	0	0	1	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	2	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	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
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0
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	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	6
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	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4
PEAK HR FACTOR :	0.00	0.250	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
		0.250				0.375											

National Data & Surveying Services

Intersection Turning Movement Count

Location: Brunswick Rd & Project Dwy
City: Grass Valley

Project ID: 19-07290-015
Date: 8/28/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Brunswick Rd		Brunswick Rd		Project Dwy		Project Dwy		
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 :	**07:30 AM - 08:30 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	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	0	0	0	0	0	0
APPROACH %'s :									
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

Whispering Pines Ln & Project Access/Foster & Son Dwy/E/O Centennial Dr

Peak Hour Turning Movement Count

ID: 19-07290-016
City: Grass Valley

Day: Wednesday
Date: 08/28/2019

PEAK HOURS

AM: 07:45 AM - 08:45 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

Whispering Pines Ln — SOUTHBOUND

AM	0	103	0	0	308	AM
NOON	0	0	0	0	0	NOON
PM	0	261	0	0	114	PM

Project Access/Foster & Son Dwy — EASTBOUND

AM	NOON	PM	
0	0	1	
0	0	0	0
2	0	0	0
0	0	0	0
0	0	0	0
AM	NOON	PM	

CONTROL

0

	AM	NOON	PM
TEV	411	0	376
PHF	0.84		0.75

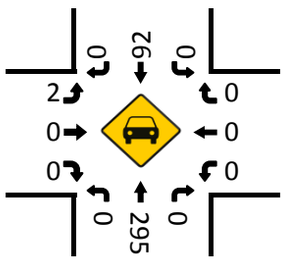
Project Access/Foster & Son Dwy — WESTBOUND

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

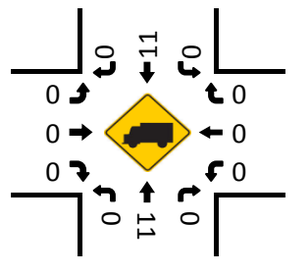
Whispering Pines Ln — NORTHBOUND

PM	261	0	1	114	0	PM
NOON	0	0	0	0	0	NOON
AM	103	0	0	306	0	AM

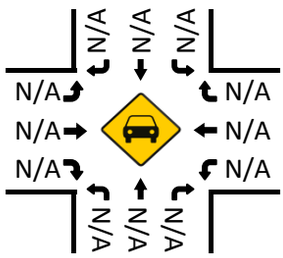
Cars (AM)



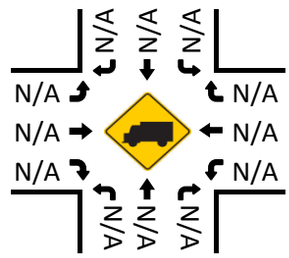
HT (AM)



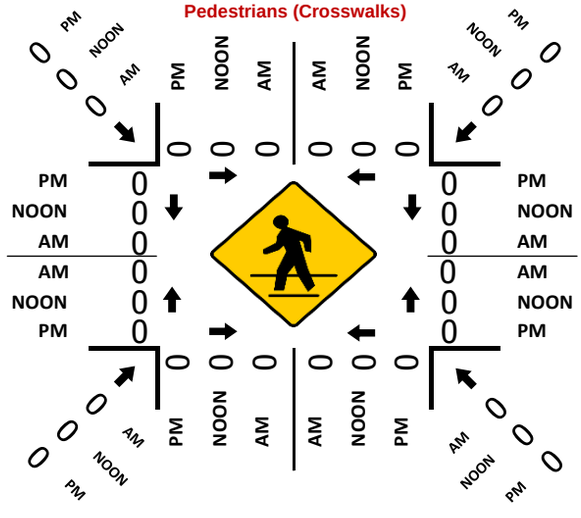
Cars (NOON)



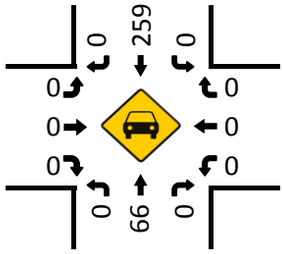
HT (NOON)



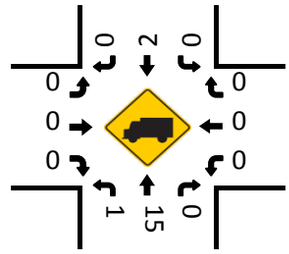
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Whispering Pines Ln & Project Access/Foster & Son Dwy/E/O Centennial Dr
City: Grass Valley
Control:

Project ID: 19-07290-016
Date: 8/28/2019

Total

NS/EW Streets:	Whispering Pines Ln				Whispering Pines Ln				Project Access/Foster & Son Dwy/E/O Centennial Dr				Project Access/Foster & Son Dwy/E/O Centennial Dr				
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	38	0	0	0	13	0	0	1	0	1	0	0	0	0	0	53
6:45 AM	0	68	0	0	0	18	0	0	0	0	0	0	0	0	0	0	86
7:00 AM	0	34	0	0	0	27	0	0	0	0	0	0	0	0	0	0	61
7:15 AM	0	36	0	0	0	8	0	0	0	0	0	0	0	0	0	0	44
7:30 AM	1	36	0	0	0	18	1	0	1	0	1	0	0	0	0	0	58
7:45 AM	0	87	0	0	0	36	0	0	0	0	0	0	0	0	0	0	123
8:00 AM	0	77	0	0	0	19	0	0	2	0	0	0	0	0	0	0	98
8:15 AM	0	80	0	0	0	25	0	0	0	0	0	0	0	0	0	0	105
8:30 AM	0	62	0	0	0	23	0	0	0	0	0	0	0	0	0	0	85
8:45 AM	0	54	0	0	0	21	0	0	0	0	0	0	0	0	0	0	75
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	572	0	0	0	208	1	0	4	0	2	0	0	0	0	0	788
APPROACH %'s :	0.17%	99.83%	0.00%	0.00%	0.00%	99.52%	0.48%	0.00%	66.67%	0.00%	33.33%	0.00%					
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	306	0	0	0	103	0	0	2	0	0	0	0	0	0	0	411
PEAK HR FACTOR :	0.000	0.879	0.000	0.000	0.000	0.715	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.835
		0.879				0.715				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	1	26	0	0	0	66	0	0	1	0	0	0	0	0	0	0	94
3:45 PM	1	38	0	0	0	29	0	0	0	0	0	0	0	0	0	0	68
4:00 PM	1	22	0	0	0	41	0	0	0	0	0	0	0	0	0	0	64
4:15 PM	2	19	0	0	0	38	0	0	0	0	0	0	0	0	0	0	59
4:30 PM	0	25	0	0	0	63	0	0	0	0	0	0	0	0	0	0	88
4:45 PM	0	27	0	0	0	57	0	0	0	0	0	0	0	0	0	0	84
5:00 PM	1	34	0	0	0	90	0	0	0	0	0	0	0	0	0	0	125
5:15 PM	0	28	0	0	0	51	0	0	0	0	0	0	0	0	0	0	79
5:30 PM	0	16	0	0	0	64	0	0	0	0	0	0	0	0	0	0	80
5:45 PM	0	10	0	0	0	27	0	0	0	0	0	0	0	0	0	0	37
6:00 PM	0	16	0	0	0	26	0	0	0	0	0	0	0	0	0	0	42
6:15 PM	0	12	0	0	0	12	0	0	0	0	1	0	0	0	0	0	25
6:30 PM	0	11	0	0	0	24	1	0	0	0	0	0	0	0	0	0	36
6:45 PM	0	13	0	0	0	20	0	0	0	0	0	0	0	0	0	0	33
7:00 PM	0	14	0	0	0	6	0	0	0	0	0	0	0	0	0	0	20
7:15 PM	0	18	0	0	0	5	0	0	0	0	0	0	0	0	0	0	23
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	6	329	0	0	0	619	1	0	1	0	1	0	0	0	0	0	957
APPROACH %'s :	1.79%	98.21%	0.00%	0.00%	0.00%	99.84%	0.16%	0.00%	50.00%	0.00%	50.00%	0.00%					
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	1	114	0	0	0	261	0	0	0	0	0	0	0	0	0	0	376
PEAK HR FACTOR :	0.250	0.838	0.000	0.000	0.000	0.725	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.752
		0.821				0.725											

National Data & Surveying Services

Intersection Turning Movement Count

Location: Whispering Pines Ln & Project Access/Foster & Son Dwy/E/O Centennial Dr
City: Grass Valley
Control: 0

Project ID: 19-07290-016
Date: 8/28/2019

Cars

NS/EW Streets:	Whispering Pines Ln				Whispering Pines Ln				Project Access/Foster & Son Dwy/E/O Centennial Dr				Project Access/Foster & Son Dwy/E/O Centennial Dr				
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	38	0	0	0	11	0	0	0	0	0	0	0	0	0	0	49
6:45 AM	0	67	0	0	0	15	0	0	0	0	0	0	0	0	0	0	82
7:00 AM	0	32	0	0	0	25	0	0	0	0	0	0	0	0	0	0	57
7:15 AM	0	36	0	0	0	7	0	0	0	0	0	0	0	0	0	0	43
7:30 AM	1	35	0	0	0	15	1	0	1	0	1	0	0	0	0	0	54
7:45 AM	0	85	0	0	0	31	0	0	0	0	0	0	0	0	0	0	116
8:00 AM	0	76	0	0	0	16	0	0	2	0	0	0	0	0	0	0	94
8:15 AM	0	78	0	0	0	23	0	0	0	0	0	0	0	0	0	0	101
8:30 AM	0	56	0	0	0	22	0	0	0	0	0	0	0	0	0	0	78
8:45 AM	0	53	0	0	0	19	0	0	0	0	0	0	0	0	0	0	72
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	556	0	0	0	184	1	0	3	0	1	0	0	0	0	0	746
APPROACH %'s :	0.18%	99.82%	0.00%	0.00%	0.00%	99.46%	0.54%	0.00%	75.00%	0.00%	25.00%	0.00%					
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	295	0	0	0	92	0	0	2	0	0	0	0	0	0	0	389
PEAK HR FACTOR :	0.00	0.868	0.000	0.000	0.000	0.742	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.838
		0.868				0.742				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	1	24	0	0	0	62	0	0	1	0	0	0	0	0	0	0	88
3:45 PM	0	35	0	0	0	28	0	0	0	0	0	0	0	0	0	0	63
4:00 PM	0	20	0	0	0	40	0	0	0	0	0	0	0	0	0	0	60
4:15 PM	0	18	0	0	0	35	0	0	0	0	0	0	0	0	0	0	53
4:30 PM	0	25	0	0	0	63	0	0	0	0	0	0	0	0	0	0	88
4:45 PM	0	21	0	0	0	57	0	0	0	0	0	0	0	0	0	0	78
5:00 PM	0	26	0	0	0	90	0	0	0	0	0	0	0	0	0	0	116
5:15 PM	0	27	0	0	0	49	0	0	0	0	0	0	0	0	0	0	76
5:30 PM	0	14	0	0	0	64	0	0	0	0	0	0	0	0	0	0	78
5:45 PM	0	10	0	0	0	25	0	0	0	0	0	0	0	0	0	0	35
6:00 PM	0	15	0	0	0	26	0	0	0	0	0	0	0	0	0	0	41
6:15 PM	0	9	0	0	0	12	0	0	0	0	1	0	0	0	0	0	22
6:30 PM	0	10	0	0	0	24	0	0	0	0	0	0	0	0	0	0	34
6:45 PM	0	13	0	0	0	20	0	0	0	0	0	0	0	0	0	0	33
7:00 PM	0	13	0	0	0	6	0	0	0	0	0	0	0	0	0	0	19
7:15 PM	0	18	0	0	0	5	0	0	0	0	0	0	0	0	0	0	23
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	298	0	0	0	606	0	0	1	0	1	0	0	0	0	0	907
APPROACH %'s :	0.33%	99.67%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	50.00%	0.00%	50.00%	0.00%					
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	99	0	0	0	259	0	0	0	0	0	0	0	0	0	0	358
PEAK HR FACTOR :	0.00	0.917	0.000	0.000	0.000	0.719	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.772
		0.917				0.719											

National Data & Surveying Services

Intersection Turning Movement Count

Location: Whispering Pines Ln & Project Access/Foster & Son Dwy/E/O Centennial Dr
City: Grass Valley
Control: 0

Project ID: 19-07290-016
Date: 8/28/2019

HT

NS/EW Streets:	Whispering Pines Ln				Whispering Pines Ln				Project Access/Foster & Son Dwy/E/O Centennial Dr				Project Access/Foster & Son Dwy/E/O Centennial Dr				
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	2	0	0	1	0	1	0	0	0	0	0	4
6:45 AM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4
7:00 AM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4
7:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4
7:45 AM	0	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	7
8:00 AM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4
8:15 AM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4
8:30 AM	0	6	0	0	0	1	0	0	0	0	0	0	0	0	0	0	7
8:45 AM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	16	0	0	0	24	0	0	1	0	1	0	0	0	0	0	42
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	50.00%	0.00%	50.00%	0.00%					
PEAK HR :	**07:45 AM - 08:45 AM**																TOTAL
PEAK HR VOL :	0	11	0	0	0	11	0	0	0	0	0	0	0	0	0	0	22
PEAK HR FACTOR :	0.000	0.458	0.000	0.000	0.000	0.550	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.786
		0.458				0.550											

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	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	6
3:45 PM	1	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5
4:00 PM	1	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
4:15 PM	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	6
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
5:00 PM	1	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
5:15 PM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
5:30 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
6:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:15 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
6:30 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	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	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	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 :	5	31	0	0	0	13	1	0	0	0	0	0	0	0	0	0	50
APPROACH %'s :	13.89%	86.11%	0.00%	0.00%	0.00%	92.86%	7.14%	0.00%									
PEAK HR :	**04:30 PM - 05:30 PM**																TOTAL
PEAK HR VOL :	1	15	0	0	0	2	0	0	0	0	0	0	0	0	0	0	18
PEAK HR FACTOR :	0.25	0.469	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	0.500
		0.444				0.250											

National Data & Surveying Services

Intersection Turning Movement Count

Location: Whispering Pines Ln & Project Access/Foster & Son Dwy/E/O Centennial Dr
City: Grass Valley
Control: 0

Project ID: 19-07290-016
Date: 8/28/2019

Bikes

NS/EW Streets:	Whispering Pines Ln				Whispering Pines Ln				Project Access/Foster & Son Dwy/E/O Centennial Dr				Project Access/Foster & Son Dwy/E/O Centennial Dr				
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 :	07:45 AM - 08:45 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	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
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
APPROACH %'s :					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	0	0	0	0
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	0.000	0.000	0.000	

National Data & Surveying Services

Intersection Turning Movement Count

Location: Whispering Pines Ln & Project Access/Foster & Son Dwy/E/O Center **Project ID:** 19-07290-016
City: Grass Valley **Date:** 8/28/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Whispering Pines Ln		Whispering Pines Ln		Project Access/Foster & Son Dwy/E/O Centennial		Project Access/Foster & Son Dwy/E/O Centennial		
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 :	**07:45 AM - 08:45 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	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	0	0	0	0	0	0
APPROACH %'s :									
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

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

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

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	0	1212
	AM	NOON	PM
PHF	0.95		0.87

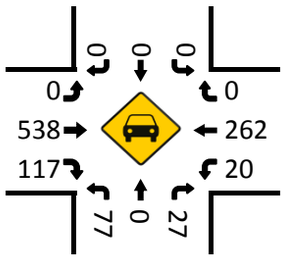
Idaho Maryland Rd — WESTBOUND

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	

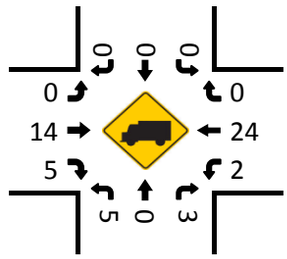
Railroad Ave — NORTHBOUND

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

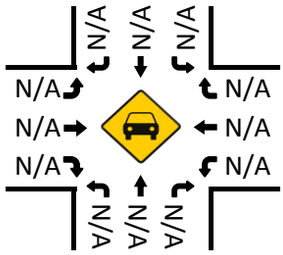
Cars (AM)



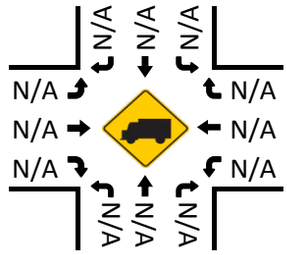
HT (AM)



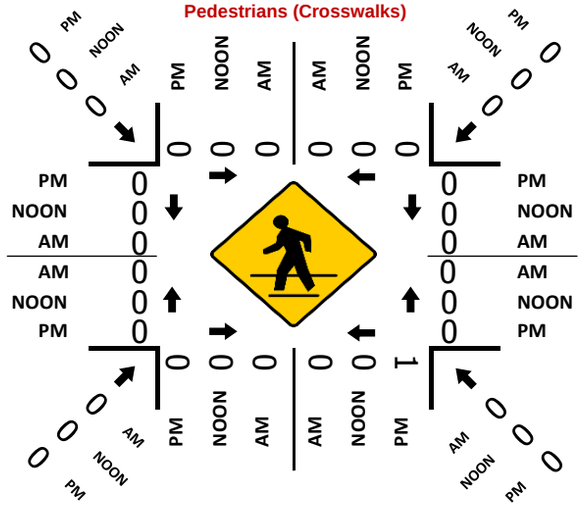
Cars (NOON)



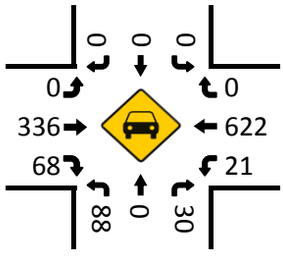
HT (NOON)



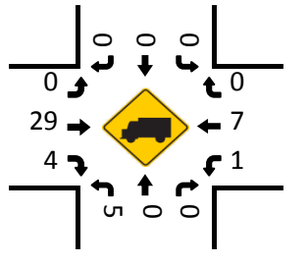
Pedestrians (Crosswalks)



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

Centennial Dr & Idaho Maryland Rd

Peak Hour Turning Movement Count

ID: 19-07390-001
City: Grass Valley

Day: Wednesday
Date: 10/23/2019

PEAK HOURS

AM: 08:00 AM - 09:00 AM
NOON: NONE
PM: 03:30 PM - 04:30 PM

COUNT PERIODS

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

Centennial Dr — 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	
251	0	597	⇦
0	0	0	↶ 0
0	0	0	↱ 0
200	0	260	→ 0
232	0	117	↴ 0
AM	NOON	PM	

Idaho Maryland Rd — WESTBOUND

PM	NOON	AM	
0	0	0	↰ 0
357	0	180	← 0
9	0	21	↰ 0
0	0	0	↶ 0
292	0	211	⇨
PM	NOON	AM	

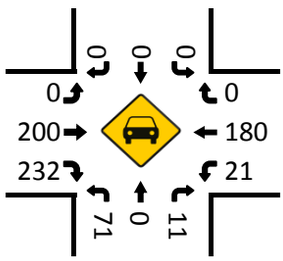
CONTROL: 1-Way Stop (NB)

TEV	715 AM	0 NOON	1015 PM
PHF	0.97		0.80

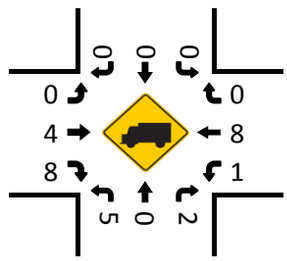
Centennial Dr — NORTHBOUND

PM	126	0	240	0	32	PM
NOON	0	0	0	0	0	NOON
AM	253	0	71	0	11	AM

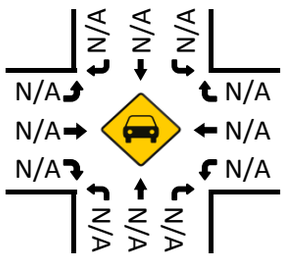
Total Vehicles (AM)



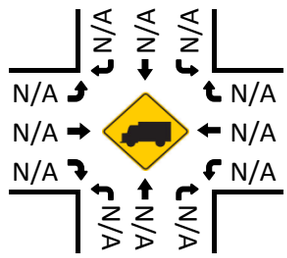
HT (AM)



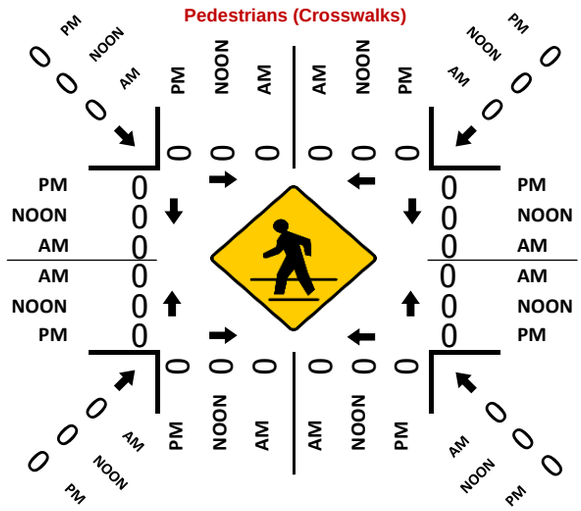
Total Vehicles (Noon)



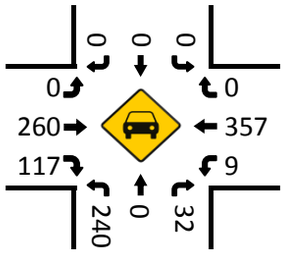
HT (NOON)



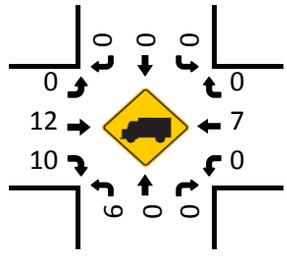
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Centennial Dr & Idaho Maryland Rd
City: Grass Valley
Control: 1-Way Stop (NB)

Project ID: 19-07390-001
Date: 10/23/2019

Total

NS/EW Streets:	Centennial Dr				Centennial Dr				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	5	0	0	0	0	0	0	0	0	23	30	0	2	20	0	0	80
6:45 AM	7	0	0	0	0	0	0	0	0	50	71	0	1	21	0	0	150
7:00 AM	12	0	3	0	0	0	0	0	0	32	35	0	3	27	0	0	112
7:15 AM	13	0	2	0	0	0	0	0	0	29	34	0	0	31	0	0	109
7:30 AM	24	0	1	0	0	0	0	0	0	51	36	0	3	35	0	0	150
7:45 AM	6	0	3	0	0	0	0	0	0	54	52	0	9	37	0	0	161
8:00 AM	13	0	4	0	0	0	0	0	0	51	62	0	9	39	0	0	178
8:15 AM	15	0	1	0	0	0	0	0	0	51	65	0	2	44	0	0	178
8:30 AM	24	0	3	0	0	0	0	0	0	46	61	0	3	47	0	0	184
8:45 AM	19	0	3	0	0	0	0	0	0	52	44	0	7	50	0	0	175
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	138	0	20	0	0	0	0	0	0	439	490	0	39	351	0	0	1477
APPROACH %'s :	87.34%	0.00%	12.66%	0.00%					0.00%	47.26%	52.74%	0.00%	10.00%	90.00%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	71	0	11	0	0	0	0	0	0	200	232	0	21	180	0	0	715
PEAK HR FACTOR :	0.740	0.000	0.688	0.000	0.000	0.000	0.000	0.000	0.000	0.962	0.892	0.000	0.583	0.900	0.000	0.000	0.971
	0.759								0.931				0.882				

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	62	0	10	0	0	0	0	0	0	70	22	0	1	100	0	0	265
3:45 PM	98	0	11	0	0	0	0	0	0	61	40	0	3	105	0	0	318
4:00 PM	37	0	7	0	0	0	0	0	0	73	31	0	3	85	0	0	236
4:15 PM	43	0	4	0	0	0	0	0	0	56	24	0	2	67	0	0	196
4:30 PM	27	0	3	0	0	0	0	0	0	35	20	0	0	71	0	0	156
4:45 PM	33	0	5	0	0	0	0	0	0	61	20	0	4	52	0	0	175
5:00 PM	34	0	6	0	0	0	0	0	0	38	11	0	3	54	0	0	146
5:15 PM	19	0	0	0	0	0	0	0	0	39	40	0	7	44	0	0	149
5:30 PM	35	0	2	0	0	0	0	0	0	35	15	0	8	36	0	0	131
5:45 PM	33	0	2	0	0	0	0	0	0	34	11	0	3	46	0	0	129
6:00 PM	17	0	0	0	0	0	0	0	0	29	11	0	0	34	0	0	91
6:15 PM	11	0	1	0	0	0	0	0	0	19	13	0	0	25	0	0	69
6:30 PM	8	0	3	0	0	0	0	0	0	30	15	0	0	33	0	0	89
6:45 PM	7	0	2	0	0	0	0	0	0	21	5	0	1	19	0	0	55
7:00 PM	12	0	2	0	0	0	0	0	0	10	8	0	1	14	0	0	47
7:15 PM	7	0	3	0	0	0	0	0	0	24	5	0	0	21	0	0	60
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	483	0	61	0	0	0	0	0	0	635	291	0	36	806	0	0	2312
APPROACH %'s :	88.79%	0.00%	11.21%	0.00%					0.00%	68.57%	31.43%	0.00%	4.28%	95.72%	0.00%	0.00%	
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	240	0	32	0	0	0	0	0	0	260	117	0	9	357	0	0	1015
PEAK HR FACTOR :	0.612	0.000	0.727	0.000	0.000	0.000	0.000	0.000	0.000	0.890	0.731	0.000	0.750	0.850	0.000	0.000	0.798
	0.624								0.906				0.847				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Centennial Dr & Idaho Maryland Rd
City: Grass Valley
Control: 1-Way Stop (NB)

Project ID: 19-07390-001
Date: 10/23/2019

Cars

NS/EW Streets:	Centennial Dr				Centennial Dr				Idaho Maryland Rd				Idaho Maryland Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:30 AM	3	0	0	0	0	0	0	0	0	21	29	0	2	19	0	0	74
6:45 AM	7	0	0	0	0	0	0	0	0	50	71	0	1	19	0	0	148
7:00 AM	11	0	2	0	0	0	0	0	0	32	34	0	3	24	0	0	106
7:15 AM	12	0	2	0	0	0	0	0	0	24	34	0	0	27	0	0	99
7:30 AM	15	0	1	0	0	0	0	0	0	49	36	0	2	30	0	0	133
7:45 AM	5	0	3	0	0	0	0	0	0	52	51	0	9	32	0	0	152
8:00 AM	12	0	4	0	0	0	0	0	0	49	60	0	9	38	0	0	172
8:15 AM	14	0	1	0	0	0	0	0	0	51	64	0	2	41	0	0	173
8:30 AM	22	0	1	0	0	0	0	0	0	45	58	0	3	44	0	0	173
8:45 AM	18	0	3	0	0	0	0	0	0	51	42	0	6	49	0	0	169
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	119	0	17	0	0	0	0	0	0	424	479	0	37	323	0	0	1399
APPROACH %'s :	87.50%	0.00%	12.50%	0.00%					0.00%	46.95%	53.05%	0.00%	10.28%	89.72%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	66	0	9	0	0	0	0	0	0	196	224	0	20	172	0	0	687
PEAK HR FACTOR :	0.75	0.000	0.563	0.000	0.000	0.000	0.000	0.000	0.000	0.961	0.875	0.000	0.556	0.878	0.000	0.000	0.993
	0.815								0.913				0.873				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:30 PM	60	0	10	0	0	0	0	0	0	65	20	0	1	99	0	0	255
3:45 PM	97	0	11	0	0	0	0	0	0	59	39	0	3	103	0	0	312
4:00 PM	32	0	7	0	0	0	0	0	0	71	27	0	3	82	0	0	222
4:15 PM	42	0	4	0	0	0	0	0	0	53	21	0	2	66	0	0	188
4:30 PM	26	0	3	0	0	0	0	0	0	34	17	0	0	69	0	0	149
4:45 PM	33	0	5	0	0	0	0	0	0	61	17	0	4	50	0	0	170
5:00 PM	33	0	6	0	0	0	0	0	0	37	11	0	3	53	0	0	143
5:15 PM	18	0	0	0	0	0	0	0	0	38	34	0	3	44	0	0	137
5:30 PM	34	0	2	0	0	0	0	0	0	35	13	0	7	35	0	0	126
5:45 PM	33	0	2	0	0	0	0	0	0	34	11	0	3	46	0	0	129
6:00 PM	17	0	0	0	0	0	0	0	0	29	11	0	0	34	0	0	91
6:15 PM	11	0	1	0	0	0	0	0	0	18	13	0	0	24	0	0	67
6:30 PM	8	0	3	0	0	0	0	0	0	30	15	0	0	33	0	0	89
6:45 PM	7	0	2	0	0	0	0	0	0	19	5	0	1	19	0	0	53
7:00 PM	12	0	2	0	0	0	0	0	0	10	8	0	1	14	0	0	47
7:15 PM	7	0	3	0	0	0	0	0	0	24	5	0	0	21	0	0	60
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	470	0	61	0	0	0	0	0	0	617	267	0	31	792	0	0	2238
APPROACH %'s :	88.51%	0.00%	11.49%	0.00%					0.00%	69.80%	30.20%	0.00%	3.77%	96.23%	0.00%	0.00%	
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	231	0	32	0	0	0	0	0	0	248	107	0	9	350	0	0	977
PEAK HR FACTOR :	0.60	0.000	0.727	0.000	0.000	0.000	0.000	0.000	0.000	0.873	0.686	0.000	0.750	0.850	0.000	0.000	0.783
	0.609								0.906				0.847				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Centennial Dr & Idaho Maryland Rd
City: Grass Valley
Control: 1-Way Stop (NB)

Project ID: 19-07390-001
Date: 10/23/2019

HT

NS/EW Streets:	Centennial Dr				Centennial Dr				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	2	0	0	0	0	0	0	0	0	2	1	0	0	1	0	0	6
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
7:00 AM	1	0	1	0	0	0	0	0	0	0	1	0	0	3	0	0	6
7:15 AM	1	0	0	0	0	0	0	0	0	5	0	0	0	4	0	0	10
7:30 AM	9	0	0	0	0	0	0	0	0	2	0	0	1	5	0	0	17
7:45 AM	1	0	0	0	0	0	0	0	0	2	1	0	0	5	0	0	9
8:00 AM	1	0	0	0	0	0	0	0	0	2	2	0	0	1	0	0	6
8:15 AM	1	0	0	0	0	0	0	0	0	0	1	0	0	3	0	0	5
8:30 AM	2	0	2	0	0	0	0	0	0	1	3	0	0	3	0	0	11
8:45 AM	1	0	0	0	0	0	0	0	0	1	2	0	1	1	0	0	6
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	19	0	3	0	0	0	0	0	0	15	11	0	2	28	0	0	78
APPROACH %'s :	86.36%	0.00%	13.64%	0.00%					0.00%	57.69%	42.31%	0.00%	6.67%	93.33%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	5	0	2	0	0	0	0	0	0	4	8	0	1	8	0	0	28
PEAK HR FACTOR :	0.625	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.667	0.000	0.250	0.667	0.000	0.000	0.636
	0.438								0.750				0.750				

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	2	0	0	0	0	0	0	0	0	5	2	0	0	1	0	0	10
3:45 PM	1	0	0	0	0	0	0	0	0	2	1	0	0	2	0	0	6
4:00 PM	5	0	0	0	0	0	0	0	0	2	4	0	0	3	0	0	14
4:15 PM	1	0	0	0	0	0	0	0	0	3	3	0	0	1	0	0	8
4:30 PM	1	0	0	0	0	0	0	0	0	1	3	0	0	2	0	0	7
4:45 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	2	0	0	5
5:00 PM	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	3
5:15 PM	1	0	0	0	0	0	0	0	0	1	6	0	4	0	0	0	12
5:30 PM	1	0	0	0	0	0	0	0	0	0	2	0	1	1	0	0	5
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	1	0	0	0	1	0	0	2
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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 :	13	0	0	0	0	0	0	0	0	18	24	0	5	14	0	0	74
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%					0.00%	42.86%	57.14%	0.00%	26.32%	73.68%	0.00%	0.00%	
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	9	0	0	0	0	0	0	0	0	12	10	0	0	7	0	0	38
PEAK HR FACTOR :	0.45	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.600	0.625	0.000	0.000	0.583	0.000	0.000	0.679
	0.450								0.786				0.583				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Centennial Dr & Idaho Maryland Rd
City: Grass Valley
Control: 1-Way Stop (NB)

Project ID: 19-07390-001
Date: 10/23/2019

Bikes

NS/EW Streets:	Centennial Dr				Centennial Dr				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	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	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	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	0	0	0	0	2	0	0	2
APPROACH %'s :													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	0	0	0	0	2	0	0	2
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	0.500	0.000	0.000	0.500
															0.500		

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	1	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
4:30 PM	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	3
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
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	1	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0
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 :	1	0	0	0	0	0	0	0	0	1	1	0	3	4	0	0	10
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%					0.00%	50.00%	50.00%	0.00%	42.86%	57.14%	0.00%	0.00%	
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	1	1	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	0.250	0.250	0.000	0.000	0.500
															0.500		

National Data & Surveying Services

Intersection Turning Movement Count

Location: Centennial Dr & Idaho Maryland Rd **Project ID:** 19-07390-001
City: Grass Valley **Date:** 10/23/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Centennial Dr		Centennial Dr		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	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	0	0	0	0	0
6:15 PM	0	0	0	0	1	0	0	0	1
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	0	1	0	0	0	1
APPROACH %'s :					100.00%	0.00%			
PEAK HR :	03:30 PM - 04:30 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Prepared by National Data & Surveying Services

Sutton Way & Idaho Maryland Rd

Peak Hour Turning Movement Count

ID: 19-07390-002
City: Grass Valley

Day: Wednesday
Date: 10/23/2019

PEAK HOURS

AM: 08:00 AM - 09:00 AM
NOON: NONE
PM: 03:30 PM - 04:30 PM

COUNT PERIODS

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

SOUTHBOUND (Sutton Way)

AM	94	0	38	0	188	AM
NOON	0	0	0	0	0	NOON
PM	190	0	107	0	248	PM

EASTBOUND (Idaho Maryland Rd)

AM	NOON	PM	
195	0	376	⇦
0	0	0	↶ 0
100	0	181	↱ 0
101	0	102	→ 0
0	0	0	↷ 0

WESTBOUND (Idaho Maryland Rd)

	PM	NOON	AM
0	67	0	88
0	186	0	101
0	0	0	0
0	0	0	0
⇨	209	0	139

NORTHBOUND (Sutton Way)

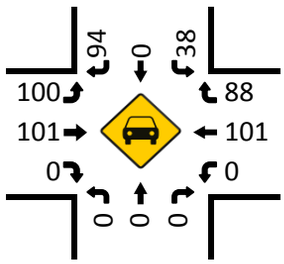
PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

CONTROL

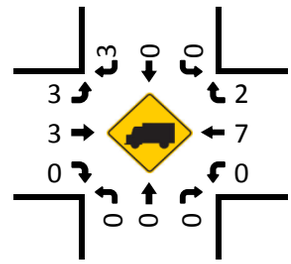
3-Way Stop (SB/EB/WB)

TEV	522 AM	0 NOON	833 PM
PHF	0.85		0.85

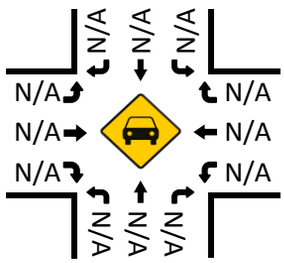
Total Vehicles (AM)



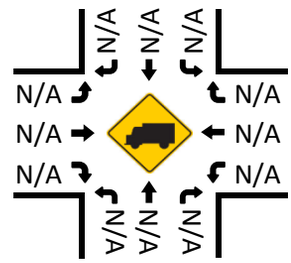
HT (AM)



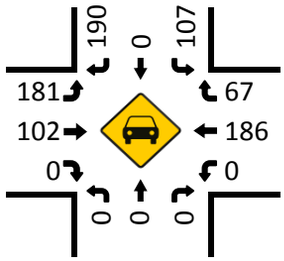
Total Vehicles (Noon)



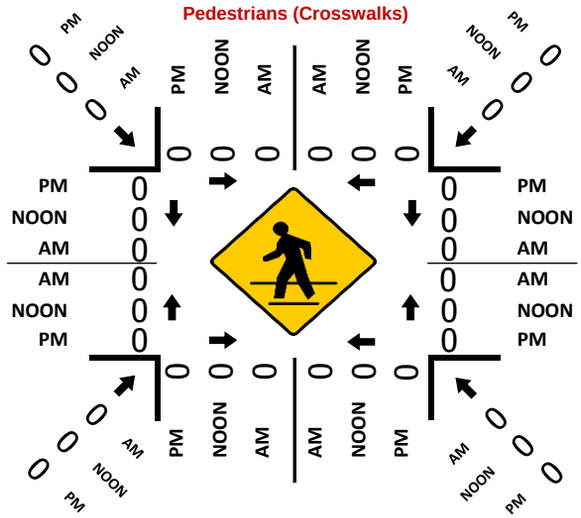
HT (NOON)



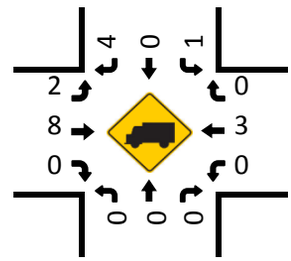
Total Vehicles (PM)



Pedestrians (Crosswalks)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Sutton Way & Idaho Maryland Rd
City: Grass Valley
Control: 3-Way Stop (SB/EB/WB)

Project ID: 19-07390-002
Date: 10/23/2019

Total

NS/EW Streets:	Sutton Way				Sutton Way				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	5	0	4	0	3	23	0	0	0	12	7	0	54
6:45 AM	0	0	0	0	5	0	14	0	15	34	0	0	0	15	7	0	90
7:00 AM	0	0	0	0	6	0	9	0	12	18	0	0	0	17	17	0	79
7:15 AM	0	0	0	0	6	0	15	0	13	19	0	0	0	18	11	0	82
7:30 AM	0	0	0	0	12	0	16	0	27	19	0	0	0	29	17	0	120
7:45 AM	0	0	0	0	12	0	30	0	24	38	0	0	0	16	26	0	146
8:00 AM	0	0	0	0	6	0	18	0	22	26	0	0	0	19	18	0	109
8:15 AM	0	0	0	0	7	0	26	0	28	29	0	0	0	28	22	0	140
8:30 AM	0	0	0	0	12	0	19	0	20	23	0	0	0	26	20	0	120
8:45 AM	0	0	0	0	13	0	31	0	30	23	0	0	0	28	28	0	153
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	84	0	182	0	194	252	0	0	0	208	173	0	1093
APPROACH %'s :					31.58%	0.00%	68.42%	0.00%	43.50%	56.50%	0.00%	0.00%	0.00%	54.59%	45.41%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	38	0	94	0	100	101	0	0	0	101	88	0	522
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.731	0.000	0.758	0.000	0.833	0.871	0.000	0.000	0.000	0.902	0.786	0.000	0.853
					0.750				0.882				0.844				

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	24	0	58	0	58	23	0	0	0	60	22	0	245
3:45 PM	0	0	0	0	26	0	52	0	50	25	0	0	0	46	15	0	214
4:00 PM	0	0	0	0	35	0	53	0	42	29	0	0	0	44	18	0	221
4:15 PM	0	0	0	0	22	0	27	0	31	25	0	0	0	36	12	0	153
4:30 PM	0	0	0	0	15	0	21	0	26	18	0	0	0	40	13	0	133
4:45 PM	0	0	0	0	21	0	40	0	42	21	0	0	0	22	9	0	155
5:00 PM	0	0	0	0	18	0	24	0	29	13	0	0	0	28	16	0	128
5:15 PM	0	0	0	0	18	0	26	0	19	26	0	0	0	21	10	0	120
5:30 PM	0	0	0	0	14	0	17	0	23	9	0	0	0	26	8	0	97
5:45 PM	0	0	0	0	17	0	24	0	17	14	0	0	0	25	5	0	102
6:00 PM	0	0	0	0	6	0	14	0	21	8	0	1	0	13	6	0	69
6:15 PM	0	0	0	0	8	0	14	0	14	9	0	0	0	10	11	0	66
6:30 PM	0	0	0	0	4	0	26	0	25	12	0	0	0	7	11	0	85
6:45 PM	0	0	0	0	6	0	12	0	12	5	0	0	0	4	3	0	42
7:00 PM	0	0	0	0	7	0	10	0	9	7	0	0	0	5	3	0	41
7:15 PM	0	0	0	0	7	0	13	0	14	9	0	0	0	9	3	0	55
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	248	0	431	0	432	253	0	1	0	396	165	0	1926
APPROACH %'s :					36.52%	0.00%	63.48%	0.00%	62.97%	36.88%	0.00%	0.15%	0.00%	70.59%	29.41%	0.00%	
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	107	0	190	0	181	102	0	0	0	186	67	0	833
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.764	0.000	0.819	0.000	0.780	0.879	0.000	0.000	0.000	0.775	0.761	0.000	0.850
					0.844				0.873				0.771				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Sutton Way & Idaho Maryland Rd
City: Grass Valley
Control: 3-Way Stop (SB/EB/WB)

Project ID: 19-07390-002
Date: 10/23/2019

Cars

NS/EW Streets:	Sutton Way				Sutton Way				Idaho Maryland Rd				Idaho Maryland Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1 NL	1 NT	1 NR	1 NU	1 SL	1 ST	1 SR	1 SU	1 EL	1 ET	1 ER	1 EU	1 WL	1 WT	1 WR	1 WU	TOTAL
6:30 AM	0	0	0	0	5	0	4	0	3	20	0	0	0	12	7	0	51
6:45 AM	0	0	0	0	5	0	13	0	15	34	0	0	0	13	7	0	87
7:00 AM	0	0	0	0	6	0	9	0	12	18	0	0	0	15	17	0	77
7:15 AM	0	0	0	0	6	0	13	0	10	16	0	0	0	16	10	0	71
7:30 AM	0	0	0	0	12	0	15	0	27	18	0	0	0	23	15	0	110
7:45 AM	0	0	0	0	12	0	27	0	23	36	0	0	0	14	26	0	138
8:00 AM	0	0	0	0	6	0	18	0	21	26	0	0	0	18	17	0	106
8:15 AM	0	0	0	0	7	0	25	0	28	29	0	0	0	25	22	0	136
8:30 AM	0	0	0	0	12	0	18	0	18	22	0	0	0	23	19	0	112
8:45 AM	0	0	0	0	13	0	30	0	30	21	0	0	0	28	28	0	150
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	84	0	172	0	187	240	0	0	0	187	168	0	1038
APPROACH %'s :					32.81%	0.00%	67.19%	0.00%	43.79%	56.21%	0.00%	0.00%	0.00%	52.68%	47.32%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	38	0	91	0	97	98	0	0	0	94	86	0	504
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.731	0.000	0.758	0.000	0.808	0.845	0.000	0.000	0.000	0.839	0.768	0.000	0.840
							0.750				0.855				0.804		

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1 NL	1 NT	1 NR	1 NU	1 SL	1 ST	1 SR	1 SU	1 EL	1 ET	1 ER	1 EU	1 WL	1 WT	1 WR	1 WU	TOTAL
3:30 PM	0	0	0	0	24	0	58	0	58	20	0	0	0	60	22	0	242
3:45 PM	0	0	0	0	26	0	50	0	48	25	0	0	0	45	15	0	209
4:00 PM	0	0	0	0	34	0	51	0	42	26	0	0	0	43	18	0	214
4:15 PM	0	0	0	0	22	0	27	0	31	23	0	0	0	35	12	0	150
4:30 PM	0	0	0	0	15	0	21	0	25	18	0	0	0	38	13	0	130
4:45 PM	0	0	0	0	21	0	40	0	41	21	0	0	0	20	9	0	152
5:00 PM	0	0	0	0	16	0	22	0	28	13	0	0	0	28	16	0	123
5:15 PM	0	0	0	0	17	0	23	0	19	25	0	0	0	21	10	0	115
5:30 PM	0	0	0	0	14	0	16	0	23	9	0	0	0	25	8	0	95
5:45 PM	0	0	0	0	17	0	24	0	17	14	0	0	0	24	5	0	101
6:00 PM	0	0	0	0	6	0	14	0	21	8	0	0	0	13	6	0	68
6:15 PM	0	0	0	0	8	0	14	0	14	7	0	0	0	10	11	0	64
6:30 PM	0	0	0	0	4	0	26	0	25	10	0	0	0	7	11	0	83
6:45 PM	0	0	0	0	6	0	12	0	12	5	0	0	0	4	3	0	42
7:00 PM	0	0	0	0	7	0	10	0	9	7	0	0	0	5	3	0	41
7:15 PM	0	0	0	0	7	0	13	0	14	9	0	0	0	9	3	0	55
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	244	0	421	0	427	240	0	0	0	387	165	0	1884
APPROACH %'s :					36.69%	0.00%	63.31%	0.00%	64.02%	35.98%	0.00%	0.00%	0.00%	70.11%	29.89%	0.00%	
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	106	0	186	0	179	94	0	0	0	183	67	0	815
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.779	0.000	0.802	0.000	0.772	0.904	0.000	0.000	0.000	0.763	0.761	0.000	0.842
							0.859				0.875				0.762		

National Data & Surveying Services

Intersection Turning Movement Count

Location: Sutton Way & Idaho Maryland Rd
City: Grass Valley
Control: 3-Way Stop (SB/EB/WB)

Project ID: 19-07390-002
Date: 10/23/2019

HT

NS/EW Streets:	Sutton Way				Sutton Way				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	3	0	0	0	0	0	0	3
6:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	3
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
7:15 AM	0	0	0	0	0	0	2	0	3	3	0	0	0	2	1	0	11
7:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	6	2	0	10
7:45 AM	0	0	0	0	0	0	3	0	1	2	0	0	0	2	0	0	8
8:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	3
8:15 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	3	0	0	4
8:30 AM	0	0	0	0	0	0	1	0	2	1	0	0	0	3	1	0	8
8:45 AM	0	0	0	0	0	0	1	0	0	2	0	0	0	0	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	0	0	10	0	7	12	0	0	0	21	5	0	55
APPROACH %'s :					0.00%	0.00%	100.00%	0.00%	36.84%	63.16%	0.00%	0.00%	0.00%	80.77%	19.23%	0.00%	
PEAK HR :	**08:00 AM - 09:00 AM**																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	3	0	3	3	0	0	0	7	2	0	18
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.375	0.375	0.000	0.000	0.000	0.583	0.500	0.000	0.563
					0.750				0.500				0.563				

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	3	0	0	0	0	0	0	3
3:45 PM	0	0	0	0	0	0	2	0	2	0	0	0	0	1	0	0	5
4:00 PM	0	0	0	0	1	0	2	0	0	3	0	0	0	1	0	0	7
4:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
4:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	3
4:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	3
5:00 PM	0	0	0	0	2	0	2	0	1	0	0	0	0	0	0	0	5
5:15 PM	0	0	0	0	1	0	3	0	0	1	0	0	0	0	0	0	5
5:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	2
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	1	0	0	0	0	1
6:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
6:30 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	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	0	0	0	0	0	0	0	0
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	0	0	0	4	0	10	0	5	13	0	1	0	9	0	0	42
APPROACH %'s :					28.57%	0.00%	71.43%	0.00%	26.32%	68.42%	0.00%	5.26%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	**03:30 PM - 04:30 PM**																TOTAL
PEAK HR VOL :	0	0	0	0	1	0	4	0	2	8	0	0	0	3	0	0	18
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.250	0.000	0.500	0.000	0.250	0.667	0.000	0.000	0.000	0.750	0.000	0.000	0.643
					0.417				0.833				0.750				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Sutton Way & Idaho Maryland Rd
City: Grass Valley
Control: 3-Way Stop (SB/EB/WB)

Project ID: 19-07390-002
Date: 10/23/2019

Bikes

NS/EW Streets:	Sutton Way				Sutton Way				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	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
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	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	1	0	0	0	0	0	0	1	1	0	3
APPROACH %'s :					0.00%	0.00%	100.00%	0.00%					0.00%	50.00%	50.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	3
PEAK HR FACTOR :	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	0.250	0.250	0.000	0.375
							0.250								0.500		

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	1	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	2
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	1	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0
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	0	0	0	0	0	5	0	1	0	0	0	0	2	0	0	8
APPROACH %'s :					0.00%	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
							0.500										

National Data & Surveying Services

Intersection Turning Movement Count

Location: Sutton Way & Idaho Maryland Rd
City: Grass Valley

Project ID: 19-07390-002
Date: 10/23/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Sutton Way		Sutton Way		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	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	1	1	0	0	0	0	0	0	2
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	0	0	0	0	0
6:15 PM	1	0	0	0	0	0	0	0	1
6:30 PM	0	0	0	0	1	0	0	0	1
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 :	2	1	0	0	1	0	0	0	4
APPROACH %'s :	66.67%	33.33%			100.00%	0.00%			
PEAK HR :	**03:30 PM - 04:30 PM**								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Prepared by National Data & Surveying Services

Sutton Way & Dorsey Dr

Peak Hour Turning Movement Count

ID: 19-07390-003
City: Grass Valley

Day: Wednesday
Date: 10/23/2019

PEAK HOURS

AM	07:45 AM - 08:45 AM
NOON	NONE
PM	03:30 PM - 04:30 PM

COUNT PERIODS

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

SOUTHBOUND — Sutton Way

AM	71	84	0	0	175	AM
NOON	0	0	0	0	0	NOON
PM	168	171	0	0	299	PM

EASTBOUND — Dorsey Dr

AM	NOON	PM		
155	0	240	⇦	
0	0	0	↰	0
91	0	133	↱	0
0	0	0	→	0
52	0	100	↳	0
AM	NOON	PM		

WESTBOUND — Dorsey Dr

PM	NOON	AM		
0	0	0	↱	0
0	0	0	←	0
0	0	0	↰	0
0	0	0	↲	0
			⇨	
PM	NOON	AM		

NORTHBOUND — Sutton Way

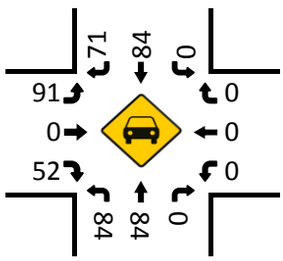
PM	271	0	72	166	0	PM
NOON	0	0	0	0	0	NOON
AM	136	0	84	84	0	AM

CONTROL

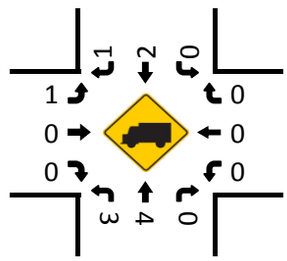
3-Way Stop (NB/SB/EB)

	AM	NOON	PM
TEV	466	0	810
PHF	0.90		0.83

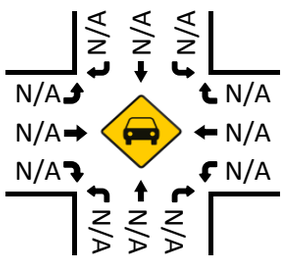
Total Vehicles (AM)



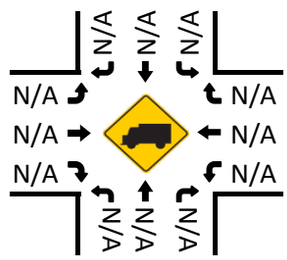
HT (AM)



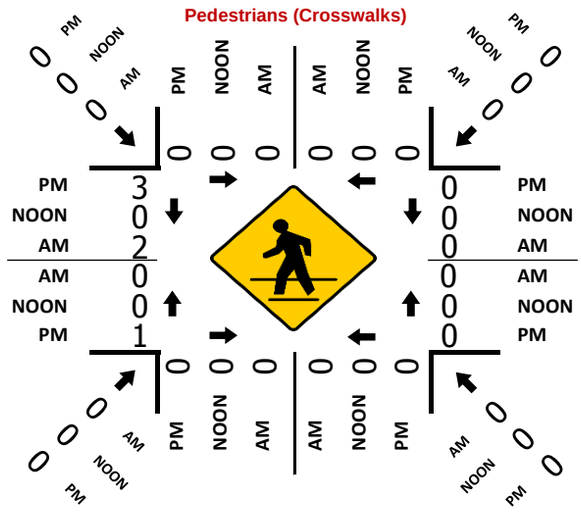
Total Vehicles (Noon)



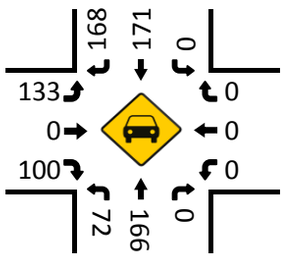
HT (NOON)



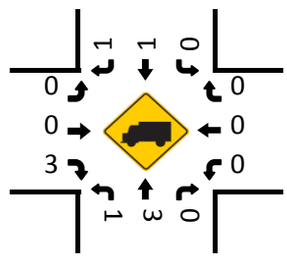
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Sutton Way & Dorsey Dr
City: Grass Valley
Control: 3-Way Stop (NB/SB/EB)

Project ID: 19-07390-003
Date: 10/23/2019

Total

NS/EW Streets:	Sutton Way				Sutton Way				Dorsey Dr				Dorsey Dr				
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	5	4	0	0	0	6	4	0	3	0	4	0	0	0	0	0	26
6:45 AM	12	8	0	0	0	11	11	0	5	0	9	0	0	0	0	0	56
7:00 AM	19	12	0	0	0	10	10	0	10	0	8	0	0	0	0	0	69
7:15 AM	12	8	0	0	0	14	17	0	11	0	9	0	0	0	0	0	71
7:30 AM	16	23	0	0	0	15	21	0	16	0	12	0	0	0	0	0	103
7:45 AM	32	19	0	0	0	26	17	0	22	0	13	0	0	0	0	0	129
8:00 AM	15	18	0	0	0	14	16	0	16	0	15	0	0	0	0	0	94
8:15 AM	19	23	0	0	0	25	16	0	37	0	7	0	0	0	0	0	127
8:30 AM	18	24	0	0	0	19	22	0	16	0	17	0	0	0	0	0	116
8:45 AM	27	30	0	0	0	17	16	0	20	0	18	0	0	0	0	0	128
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	175	169	0	0	0	157	150	0	156	0	112	0	0	0	0	0	919
APPROACH %'s :	50.87%	49.13%	0.00%	0.00%	0.00%	51.14%	48.86%	0.00%	58.21%	0.00%	41.79%	0.00%					
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	84	84	0	0	0	84	71	0	91	0	52	0	0	0	0	0	466
PEAK HR FACTOR :	0.656	0.875	0.000	0.000	0.000	0.808	0.807	0.000	0.615	0.000	0.765	0.000	0.000	0.000	0.000	0.000	0.903
	0.824				0.901				0.813								

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	18	53	0	0	0	59	65	0	31	0	18	0	0	0	0	0	244
3:45 PM	24	43	0	0	0	48	35	0	48	0	32	0	0	0	0	0	230
4:00 PM	17	44	0	0	0	43	49	0	34	0	34	0	0	0	0	0	221
4:15 PM	13	26	0	0	0	21	19	0	20	0	16	0	0	0	0	0	115
4:30 PM	13	22	0	0	0	22	21	0	51	0	20	0	0	0	0	0	149
4:45 PM	16	40	0	0	0	27	18	1	33	0	19	0	0	0	0	0	154
5:00 PM	14	27	0	0	0	16	26	0	28	0	26	1	0	0	0	0	138
5:15 PM	13	21	0	0	0	24	21	0	24	0	13	0	0	0	0	0	116
5:30 PM	9	21	0	0	0	15	33	0	25	0	14	0	0	0	0	0	117
5:45 PM	5	21	0	0	0	29	18	0	34	0	17	0	0	0	0	0	124
6:00 PM	6	15	0	0	0	15	13	0	17	0	4	0	0	0	0	0	70
6:15 PM	8	13	0	0	0	20	16	0	25	0	9	0	0	0	0	0	91
6:30 PM	16	24	0	0	0	17	20	0	18	0	5	0	0	0	0	0	100
6:45 PM	4	16	0	0	0	7	16	0	18	0	6	0	0	0	0	0	67
7:00 PM	1	6	0	0	0	10	16	0	22	0	7	0	0	0	0	0	62
7:15 PM	4	14	0	0	0	13	8	0	24	0	8	0	0	0	0	0	71
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	181	406	0	0	0	386	394	1	452	0	248	1	0	0	0	0	2069
APPROACH %'s :	30.83%	69.17%	0.00%	0.00%	0.00%	49.42%	50.45%	0.13%	64.48%	0.00%	35.38%	0.14%					
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	72	166	0	0	0	171	168	0	133	0	100	0	0	0	0	0	810
PEAK HR FACTOR :	0.750	0.783	0.000	0.000	0.000	0.725	0.646	0.000	0.693	0.000	0.735	0.000	0.000	0.000	0.000	0.000	0.830
	0.838				0.683				0.728								

National Data & Surveying Services

Intersection Turning Movement Count

Location: Sutton Way & Dorsey Dr
City: Grass Valley
Control: 3-Way Stop (NB/SB/EB)

Project ID: 19-07390-003
Date: 10/23/2019

Cars

NS/EW Streets:	Sutton Way				Sutton Way				Dorsey Dr				Dorsey Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1 NL	1 NT	1 NR	1 NU	1 SL	1 ST	1 SR	1 SU	1 EL	1 ET	1 ER	1 EU	1 WL	1 WT	1 WR	1 WU	TOTAL
6:30 AM	5	4	0	0	0	6	4	0	3	0	4	0	0	0	0	0	26
6:45 AM	12	7	0	0	0	11	10	0	3	0	9	0	0	0	0	0	52
7:00 AM	17	12	0	0	0	10	10	0	10	0	8	0	0	0	0	0	67
7:15 AM	11	8	0	0	0	14	16	0	11	0	9	0	0	0	0	0	69
7:30 AM	15	22	0	0	0	13	21	0	16	0	12	0	0	0	0	0	99
7:45 AM	31	19	0	0	0	25	17	0	21	0	13	0	0	0	0	0	126
8:00 AM	13	17	0	0	0	14	15	0	16	0	15	0	0	0	0	0	90
8:15 AM	19	23	0	0	0	25	16	0	37	0	7	0	0	0	0	0	127
8:30 AM	18	21	0	0	0	18	22	0	16	0	17	0	0	0	0	0	112
8:45 AM	26	30	0	0	0	17	16	0	19	0	17	0	0	0	0	0	125
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	167	163	0	0	0	153	147	0	152	0	111	0	0	0	0	0	893
APPROACH %'s :	50.61%	49.39%	0.00%	0.00%	0.00%	51.00%	49.00%	0.00%	57.79%	0.00%	42.21%	0.00%					
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	81	80	0	0	0	82	70	0	90	0	52	0	0	0	0	0	455
PEAK HR FACTOR :	0.65	0.870	0.000	0.000	0.000	0.820	0.795	0.000	0.608	0.000	0.765	0.000	0.000	0.000	0.000	0.000	0.896
		0.805				0.905				0.807							

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1 NL	1 NT	1 NR	1 NU	1 SL	1 ST	1 SR	1 SU	1 EL	1 ET	1 ER	1 EU	1 WL	1 WT	1 WR	1 WU	TOTAL
3:30 PM	18	52	0	0	0	59	64	0	31	0	18	0	0	0	0	0	242
3:45 PM	23	43	0	0	0	47	35	0	48	0	30	0	0	0	0	0	226
4:00 PM	17	43	0	0	0	43	49	0	34	0	33	0	0	0	0	0	219
4:15 PM	13	25	0	0	0	21	19	0	20	0	16	0	0	0	0	0	114
4:30 PM	13	21	0	0	0	22	21	0	50	0	20	0	0	0	0	0	147
4:45 PM	16	40	0	0	0	27	18	1	33	0	19	0	0	0	0	0	154
5:00 PM	14	27	0	0	0	15	25	0	27	0	23	1	0	0	0	0	132
5:15 PM	13	21	0	0	0	23	21	0	23	0	9	0	0	0	0	0	110
5:30 PM	9	20	0	0	0	15	32	0	24	0	14	0	0	0	0	0	114
5:45 PM	5	21	0	0	0	29	18	0	34	0	17	0	0	0	0	0	124
6:00 PM	6	15	0	0	0	15	12	0	17	0	3	0	0	0	0	0	68
6:15 PM	8	13	0	0	0	20	16	0	24	0	9	0	0	0	0	0	90
6:30 PM	16	24	0	0	0	17	20	0	18	0	5	0	0	0	0	0	100
6:45 PM	4	16	0	0	0	7	16	0	17	0	6	0	0	0	0	0	66
7:00 PM	1	6	0	0	0	10	15	0	21	0	7	0	0	0	0	0	60
7:15 PM	4	14	0	0	0	13	8	0	23	0	8	0	0	0	0	0	70
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	180	401	0	0	0	383	389	1	444	0	237	1	0	0	0	0	2036
APPROACH %'s :	30.98%	69.02%	0.00%	0.00%	0.00%	49.55%	50.32%	0.13%	65.10%	0.00%	34.75%	0.15%					
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	71	163	0	0	0	170	167	0	133	0	97	0	0	0	0	0	801
PEAK HR FACTOR :	0.77	0.784	0.000	0.000	0.000	0.720	0.652	0.000	0.693	0.000	0.735	0.000	0.000	0.000	0.000	0.000	0.827
		0.836				0.685				0.737							

National Data & Surveying Services

Intersection Turning Movement Count

Location: Sutton Way & Dorsey Dr
City: Grass Valley
Control: 3-Way Stop (NB/SB/EB)

Project ID: 19-07390-003
Date: 10/23/2019

HT

NS/EW Streets:	Sutton Way				Sutton Way				Dorsey Dr				Dorsey Dr				
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	1	0	0	0	0	1	0	2	0	0	0	0	0	0	0	4
7:00 AM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2
7:30 AM	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4
7:45 AM	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	3
8:00 AM	2	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
8:45 AM	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	8	6	0	0	0	4	3	0	4	0	1	0	0	0	0	0	26
APPROACH %'s :	57.14%	42.86%	0.00%	0.00%	0.00%	57.14%	42.86%	0.00%	80.00%	0.00%	20.00%	0.00%					
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	3	4	0	0	0	2	1	0	1	0	0	0	0	0	0	0	11
PEAK HR FACTOR :	0.375	0.333	0.000	0.000	0.000	0.500	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.688
		0.583				0.750				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	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2
3:45 PM	1	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	4
4:00 PM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	1	0	0	0	0	0	0	1	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	1	1	0	1	0	3	0	0	0	0	0	6
5:15 PM	0	0	0	0	0	1	0	0	1	0	4	0	0	0	0	0	6
5:30 PM	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
6:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
7:00 PM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
7:15 PM	0	0	0	0	0	0	0	0	1	0	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 :	1	5	0	0	0	3	5	0	8	0	11	0	0	0	0	0	33
APPROACH %'s :	16.67%	83.33%	0.00%	0.00%	0.00%	37.50%	62.50%	0.00%	42.11%	0.00%	57.89%	0.00%					
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	1	3	0	0	0	1	1	0	0	0	3	0	0	0	0	0	9
PEAK HR FACTOR :	0.25	0.750	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.563
		1.000				0.500				0.375							

National Data & Surveying Services

Intersection Turning Movement Count

Location: Sutton Way & Dorsey Dr
City: Grass Valley
Control: 3-Way Stop (NB/SB/EB)

Project ID: 19-07390-003
Date: 10/23/2019

Bikes

NS/EW Streets:	Sutton Way				Sutton Way				Dorsey Dr				Dorsey Dr				
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	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
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	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
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	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 :	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
APPROACH %'s :	66.67%	33.33%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
PEAK HR FACTOR :	0.500	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	0.375
	0.500				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	1	0	0	0	0	0	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
4:30 PM	0	1	0	0	0	2	0	0	0	0	0	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	1	0	0	0	0	0	0	0	1
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	1	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	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	0	0	0	0	0	0	0	0	0
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	1	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	1	0	0	0	4	0	0	2	0	1	0	0	0	0	0	8
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	66.67%	0.00%	33.33%	0.00%					
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.00	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											

National Data & Surveying Services

Intersection Turning Movement Count

Location: Sutton Way & Dorsey Dr
City: Grass Valley
Project ID: 19-07390-003
Date: 10/23/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Sutton Way		Sutton Way		Dorsey Dr		Dorsey Dr		
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	1	1
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	2	2
8:45 AM	0	0	0	0	0	0	1	0	1
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	1	3	4
APPROACH %'s :							25.00%	75.00%	
PEAK HR :	07:45 AM - 08:45 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	2	2
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	1	1
3:45 PM	0	0	0	0	0	0	0	1	1
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	1	1	2
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	0	0	0	1	1
6:15 PM	0	0	0	0	0	0	0	1	1
6:30 PM	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	1	0	1
7:00 PM	0	0	0	0	0	0	1	0	1
7:15 PM	0	0	0	0	0	0	1	0	1
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	4	5	9
APPROACH %'s :							44.44%	55.56%	
PEAK HR :	03:30 PM - 04:30 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	1	3	4
PEAK HR FACTOR :							0.250	0.750	0.500
							0.500		

Prepared by National Data & Surveying Services

SR 49-20 EB Ramps & Dorsey Dr

Peak Hour Turning Movement Count

ID: 19-07390-004
City: Grass Valley

Day: Wednesday
Date: 10/23/2019

SR 49-20 EB Ramps

SOUTHBOUND

PEAK HOURS								COUNT PERIODS
07:45 AM - 08:45 AM	AM	0	0	0	0	105	AM	06:30 AM - 09:00 AM
NONE	NOON	0	0	0	0	0	NOON	NONE
03:30 PM - 04:30 PM	PM	0	0	0	0	199	PM	03:30 PM - 07:30 PM

EASTBOUND (Dorsey Dr)

AM	NOON	PM		
619	0	446	⇦	
1	0	0	↶	0
90	0	172	↱	0
105	0	210	→	0
0	0	0	↷	0
AM	NOON	PM		

WESTBOUND (Dorsey Dr)

PM	NOON	AM		
26	0	11	↷	0
240	0	149	←	0
0	0	0	↰	0
0	0	0	↶	0
265	0	149	⇨	
PM	NOON	AM		

CONTROL: Signalized

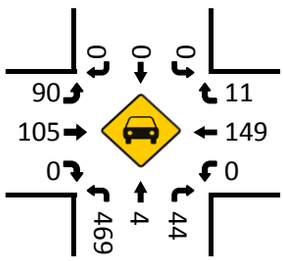
TEV	873 AM	0 NOON	910 PM
PHF	0.81		0.92

				0	0	0	0	
PM	0	0	206	1	55	PM	↓	
NOON	0	0	0	0	0	NOON		
AM	0	0	469	4	44	AM		

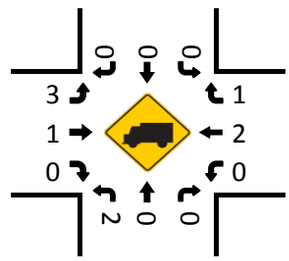
NORTHBOUND

SR 49-20 EB Ramps

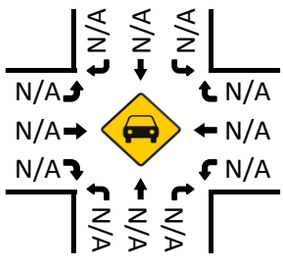
Total Vehicles (AM)



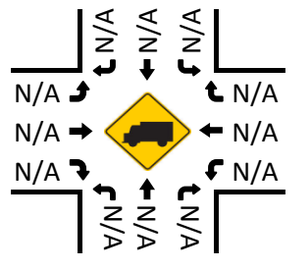
HT (AM)



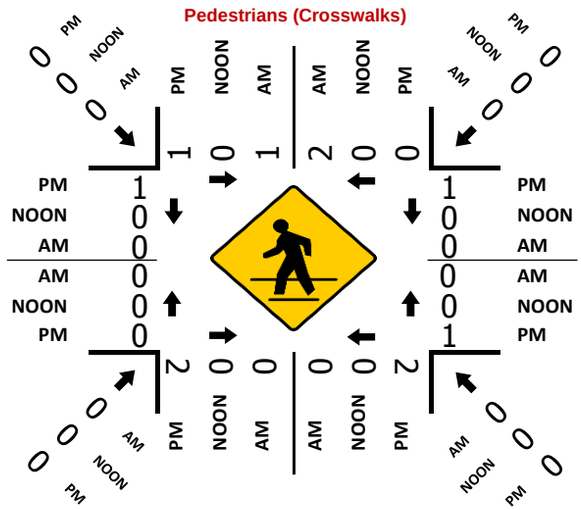
Total Vehicles (Noon)



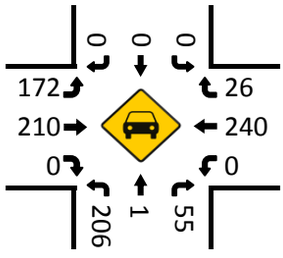
HT (NOON)



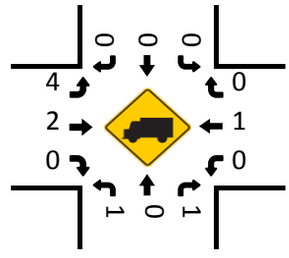
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49-20 EB Ramps & Dorsey Dr
City: Grass Valley
Control: Signalized

Project ID: 19-07390-004
Date: 10/23/2019

Total

NS/EW Streets:	SR 49-20 EB Ramps				SR 49-20 EB Ramps				Dorsey Dr				Dorsey Dr				
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	55	0	8	0	0	0	0	0	9	6	0	0	0	10	1	0	89
6:45 AM	79	0	4	0	0	0	0	0	10	11	0	1	0	18	2	0	125
7:00 AM	46	0	9	0	0	0	0	0	13	12	0	0	0	30	3	0	113
7:15 AM	95	0	5	0	0	0	0	0	16	15	0	0	0	23	4	0	158
7:30 AM	99	0	10	0	0	0	0	0	23	18	0	0	0	42	3	0	195
7:45 AM	163	0	14	0	0	0	0	0	20	27	0	0	0	43	2	0	269
8:00 AM	89	1	3	0	0	0	0	0	24	25	0	0	0	32	0	0	174
8:15 AM	117	0	22	0	0	0	0	0	22	28	0	0	0	38	4	0	231
8:30 AM	100	3	5	0	0	0	0	0	24	25	0	1	0	36	5	0	199
8:45 AM	128	1	15	0	0	0	0	0	33	26	0	0	0	46	5	0	254
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	971	5	95	0	0	0	0	0	194	193	0	2	0	318	29	0	1807
APPROACH %'s :	90.66%	0.47%	8.87%	0.00%					49.87%	49.61%	0.00%	0.51%	0.00%	91.64%	8.36%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	469	4	44	0	0	0	0	0	90	105	0	1	0	149	11	0	873
PEAK HR FACTOR :	0.719	0.333	0.500	0.000	0.000	0.000	0.000	0.000	0.938	0.938	0.000	0.250	0.000	0.866	0.550	0.000	0.811
	0.730								0.980				0.889				

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	54	1	15	0	0	0	0	0	46	47	0	0	0	65	10	0	238
3:45 PM	53	0	19	0	0	0	0	0	51	57	0	0	0	61	7	0	248
4:00 PM	38	0	6	0	0	0	0	0	46	70	0	0	0	77	3	0	240
4:15 PM	61	0	15	0	0	0	0	0	29	36	0	0	0	37	6	0	184
4:30 PM	32	1	15	0	0	0	0	0	35	47	0	1	0	39	2	0	172
4:45 PM	34	0	17	0	0	0	0	0	29	39	0	1	0	40	4	0	164
5:00 PM	42	0	16	0	0	0	0	0	30	36	0	0	0	31	2	0	157
5:15 PM	29	2	17	0	0	0	0	0	23	39	0	0	0	42	6	0	158
5:30 PM	44	1	19	0	0	0	0	0	23	29	0	0	0	29	8	0	153
5:45 PM	41	1	12	0	0	0	0	0	23	33	0	0	0	31	4	0	145
6:00 PM	39	1	10	0	0	0	0	0	27	16	0	0	0	22	5	0	120
6:15 PM	22	0	11	0	0	0	0	0	17	20	0	0	0	27	6	0	103
6:30 PM	30	0	9	0	0	0	0	0	18	19	0	2	0	26	5	0	109
6:45 PM	34	1	11	0	0	0	0	0	16	13	0	0	0	21	3	0	99
7:00 PM	28	1	11	0	0	0	0	0	12	24	0	0	0	17	4	0	97
7:15 PM	16	0	15	0	0	0	0	0	13	23	0	0	0	13	0	0	80
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	597	9	218	0	0	0	0	0	438	548	0	4	0	578	75	0	2467
APPROACH %'s :	72.45%	1.09%	26.46%	0.00%					44.24%	55.35%	0.00%	0.40%	0.00%	88.51%	11.49%	0.00%	
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	206	1	55	0	0	0	0	0	172	210	0	0	0	240	26	0	910
PEAK HR FACTOR :	0.844	0.250	0.724	0.000	0.000	0.000	0.000	0.000	0.843	0.750	0.000	0.000	0.000	0.779	0.650	0.000	0.917
	0.862								0.823				0.831				

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49-20 EB Ramps & Dorsey Dr
City: Grass Valley
Control: Signalized

Project ID: 19-07390-004
Date: 10/23/2019

Cars

NS/EW Streets:	SR 49-20 EB Ramps				SR 49-20 EB Ramps				Dorsey Dr				Dorsey Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:30 AM	55	0	8	0	0	0	0	0	8	5	0	0	0	10	1	0	87
6:45 AM	79	0	3	0	0	0	0	0	10	10	0	1	0	16	2	0	121
7:00 AM	46	0	9	0	0	0	0	0	13	12	0	0	0	28	3	0	111
7:15 AM	92	0	5	0	0	0	0	0	16	15	0	0	0	21	4	0	153
7:30 AM	93	0	10	0	0	0	0	0	23	18	0	0	0	42	2	0	188
7:45 AM	163	0	14	0	0	0	0	0	20	27	0	0	0	43	1	0	268
8:00 AM	88	1	3	0	0	0	0	0	23	25	0	0	0	30	0	0	170
8:15 AM	117	0	22	0	0	0	0	0	22	28	0	0	0	38	4	0	231
8:30 AM	99	3	5	0	0	0	0	0	22	24	0	1	0	36	5	0	195
8:45 AM	124	1	15	0	0	0	0	0	32	25	0	0	0	45	5	0	247
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	956	5	94	0	0	0	0	0	189	189	0	2	0	309	27	0	1771
APPROACH %'s :	90.62%	0.47%	8.91%	0.00%					49.74%	49.74%	0.00%	0.53%	0.00%	91.96%	8.04%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	467	4	44	0	0	0	0	0	87	104	0	1	0	147	10	0	864
PEAK HR FACTOR :	0.72	0.333	0.500	0.000	0.000	0.000	0.000	0.000	0.946	0.929	0.000	0.250	0.000	0.855	0.500	0.000	0.806
	0.727								0.960				0.892				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:30 PM	53	1	14	0	0	0	0	0	45	46	0	0	0	65	10	0	234
3:45 PM	53	0	19	0	0	0	0	0	51	57	0	0	0	60	7	0	247
4:00 PM	38	0	6	0	0	0	0	0	44	69	0	0	0	77	3	0	237
4:15 PM	61	0	15	0	0	0	0	0	28	36	0	0	0	37	6	0	183
4:30 PM	32	1	15	0	0	0	0	0	35	46	0	1	0	39	2	0	171
4:45 PM	34	0	17	0	0	0	0	0	29	39	0	1	0	40	4	0	164
5:00 PM	41	0	16	0	0	0	0	0	30	31	0	0	0	31	2	0	151
5:15 PM	29	2	17	0	0	0	0	0	22	36	0	0	0	41	6	0	153
5:30 PM	44	1	19	0	0	0	0	0	23	29	0	0	0	29	8	0	153
5:45 PM	41	1	12	0	0	0	0	0	23	33	0	0	0	31	4	0	145
6:00 PM	39	1	10	0	0	0	0	0	26	14	0	0	0	22	5	0	117
6:15 PM	21	0	11	0	0	0	0	0	17	19	0	0	0	27	6	0	101
6:30 PM	30	0	9	0	0	0	0	0	18	18	0	2	0	25	5	0	107
6:45 PM	34	1	11	0	0	0	0	0	16	13	0	0	0	21	3	0	99
7:00 PM	28	1	11	0	0	0	0	0	12	24	0	0	0	17	4	0	97
7:15 PM	15	0	15	0	0	0	0	0	13	23	0	0	0	13	0	0	79
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	593	9	217	0	0	0	0	0	432	533	0	4	0	575	75	0	2438
APPROACH %'s :	72.41%	1.10%	26.50%	0.00%					44.58%	55.01%	0.00%	0.41%	0.00%	88.46%	11.54%	0.00%	
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	205	1	54	0	0	0	0	0	168	208	0	0	0	239	26	0	901
PEAK HR FACTOR :	0.84	0.250	0.711	0.000	0.000	0.000	0.000	0.000	0.824	0.754	0.000	0.000	0.000	0.776	0.650	0.000	0.912
	0.855								0.832				0.828				

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49-20 EB Ramps & Dorsey Dr
City: Grass Valley
Control: Signalized

Project ID: 19-07390-004
Date: 10/23/2019

HT

NS/EW Streets:	SR 49-20 EB Ramps				SR 49-20 EB Ramps				Dorsey Dr				Dorsey Dr				
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	1	1	0	0	0	0	0	0	2
6:45 AM	0	0	1	0	0	0	0	0	0	1	0	0	0	2	0	0	4
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
7:15 AM	3	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	5
7:30 AM	6	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	7
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
8:00 AM	1	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	4
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	1	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	4
8:45 AM	4	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	7
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	15	0	1	0	0	0	0	0	5	4	0	0	0	9	2	0	36
APPROACH %'s :	93.75%	0.00%	6.25%	0.00%					55.56%	44.44%	0.00%	0.00%	0.00%	81.82%	18.18%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	2	0	0	0	0	0	0	0	3	1	0	0	0	2	1	0	9
PEAK HR FACTOR :	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.250	0.000	0.000	0.000	0.250	0.250	0.000	0.563
	0.500								0.333				0.375				

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	1	0	0	0	0	0	1	1	0	0	0	0	0	0	4
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
4:00 PM	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	3
4:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	1	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	1	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	6
5:15 PM	0	0	0	0	0	0	0	0	1	3	0	0	0	1	0	0	5
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
6:00 PM	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	3
6:15 PM	1	0	0	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	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	0	0	0	0	0	0	0	0
7:15 PM	1	0	0	0	0	0	0	0	0	0	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 :	4	0	1	0	0	0	0	0	6	15	0	0	0	3	0	0	29
APPROACH %'s :	80.00%	0.00%	20.00%	0.00%					28.57%	71.43%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	1	0	1	0	0	0	0	0	4	2	0	0	0	1	0	0	9
PEAK HR FACTOR :	0.25	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.500	0.500	0.000	0.000	0.000	0.250	0.000	0.000	0.563
	0.250								0.500				0.250				

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49-20 EB Ramps & Dorsey Dr
City: Grass Valley
Control: Signalized

Project ID: 19-07390-004
Date: 10/23/2019

Bikes

NS/EW Streets:	SR 49-20 EB Ramps				SR 49-20 EB Ramps				Dorsey Dr				Dorsey Dr				
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	1	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
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	2	0	0	2
APPROACH %'s :													0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.500
														0.500			

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	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	1	0	0	0	0	0	0	1
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
6:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	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	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%					
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49-20 EB Ramps & Dorsey Dr
City: Grass Valley

Project ID: 19-07390-004
Date: 10/23/2019

Pedestrians (Crosswalks)

NS/EW Streets:	SR 49-20 EB Ramps		SR 49-20 EB Ramps		Dorsey Dr		Dorsey Dr		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:30 AM	0	1	0	0	0	0	0	0	1
6:45 AM	0	1	0	0	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	1	1	0	0	0	0	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	1	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	1	4	0	0	0	0	0	0	5
APPROACH %'s :	20.00%	80.00%							
PEAK HR :	**07:45 AM - 08:45 AM**								TOTAL
PEAK HR VOL :	1	2	0	0	0	0	0	0	3
PEAK HR FACTOR :	0.250	0.500							0.375
	0.375								

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	1	0	2	2	1	1	0	1	8
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	1	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	1	0	3	0	0	0	0	0	4
5:15 PM	1	0	0	0	0	0	0	0	1
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	1	0	0	0	0	0	0	0	1
6:30 PM	2	1	0	0	0	0	0	1	4
6:45 PM	0	1	0	0	0	0	0	0	1
7:00 PM	0	2	0	0	0	0	0	0	2
7:15 PM	1	0	0	0	0	0	0	0	1
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	7	5	5	2	1	1	0	2	23
APPROACH %'s :	58.33%	41.67%	71.43%	28.57%	50.00%	50.00%	0.00%	100.00%	
PEAK HR :	**03:30 PM - 04:30 PM**								TOTAL
PEAK HR VOL :	1	0	2	2	1	1	0	1	8
PEAK HR FACTOR :	0.250		0.250	0.250	0.250	0.250		0.250	0.250
	0.250		0.250		0.250		0.250		

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49-20 WB Ramps & Dorsey Dr
City: Grass Valley
Control: Signalized

Project ID: 19-07390-005
Date: 10/23/2019

Total

NS/EW Streets:	SR 49-20 WB Ramps				SR 49-20 WB Ramps				Dorsey Dr				Dorsey Dr				
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	1	1	16	0	0	14	2	0	3	69	0	0	106
6:45 AM	0	0	0	0	0	1	11	0	0	18	19	0	6	79	0	0	134
7:00 AM	0	0	0	0	3	0	20	0	0	27	18	0	7	89	0	0	164
7:15 AM	0	0	0	0	1	1	22	0	0	23	31	0	11	91	0	0	180
7:30 AM	0	0	0	0	6	2	25	0	0	43	20	0	10	130	0	0	236
7:45 AM	0	0	0	0	6	0	41	0	0	33	30	0	13	175	0	0	298
8:00 AM	0	0	0	0	5	2	41	0	0	48	29	0	6	154	0	0	285
8:15 AM	0	0	0	0	10	6	28	0	0	40	19	0	10	133	0	0	246
8:30 AM	0	0	0	0	7	7	34	0	0	47	30	0	8	139	0	0	272
8:45 AM	0	0	0	0	6	3	33	0	0	46	31	0	15	150	0	0	284
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	45	23	271	0	0	339	229	0	89	1209	0	0	2205
APPROACH %'s :					13.27%	6.78%	79.94%	0.00%	0.00%	59.68%	40.32%	0.00%	6.86%	93.14%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	28	15	144	0	0	168	108	0	37	601	0	0	1101
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.700	0.536	0.878	0.000	0.000	0.875	0.900	0.000	0.712	0.859	0.000	0.000	0.924
					0.974				0.896				0.848				

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	0	0	10	12	37	0	0	59	68	0	20	88	0	0	294
3:45 PM	0	0	0	0	14	15	27	0	0	104	117	0	35	86	0	0	398
4:00 PM	0	0	0	0	15	13	21	0	0	110	99	0	31	93	0	0	382
4:15 PM	0	0	0	0	8	13	31	0	0	71	77	0	23	66	0	0	289
4:30 PM	0	0	0	0	18	10	18	0	0	55	87	0	12	65	0	0	265
4:45 PM	0	0	0	0	12	3	22	0	0	70	65	0	19	65	0	0	256
5:00 PM	0	0	0	0	8	19	14	0	0	48	87	0	15	50	0	0	241
5:15 PM	0	0	0	0	15	8	17	0	0	53	73	0	15	56	0	0	237
5:30 PM	0	0	0	0	10	8	14	0	0	54	36	0	25	56	0	0	203
5:45 PM	0	0	0	0	7	5	13	0	0	38	39	0	14	51	0	0	167
6:00 PM	0	0	0	0	2	4	12	0	0	47	35	0	6	47	0	0	153
6:15 PM	0	0	0	0	8	13	10	0	0	21	30	0	9	49	0	0	140
6:30 PM	0	0	0	0	3	4	22	0	0	35	26	0	12	40	0	0	142
6:45 PM	0	0	0	0	7	6	23	0	0	26	24	0	12	44	0	0	142
7:00 PM	0	0	0	0	6	2	18	0	0	27	18	0	9	35	0	0	115
7:15 PM	0	0	0	0	4	4	8	0	0	22	17	0	8	27	0	0	90
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	147	139	307	0	0	840	898	0	265	918	0	0	3514
APPROACH %'s :					24.79%	23.44%	51.77%	0.00%	0.00%	48.33%	51.67%	0.00%	22.40%	77.60%	0.00%	0.00%	
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	47	53	116	0	0	344	361	0	109	333	0	0	1363
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.783	0.883	0.784	0.000	0.000	0.782	0.771	0.000	0.779	0.895	0.000	0.000	0.856
					0.915				0.798				0.891				

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49-20 WB Ramps & Dorsey Dr
City: Grass Valley
Control: Signalized

Project ID: 19-07390-005
Date: 10/23/2019

Cars

NS/EW Streets:	SR 49-20 WB Ramps				SR 49-20 WB Ramps				Dorsey Dr				Dorsey Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1 NL	1 NT	1 NR	1 NU	1 SL	1 ST	1 SR	1 SU	1 EL	1 ET	1 ER	1 EU	1 WL	1 WT	1 WR	1 WU	TOTAL
6:30 AM	0	0	0	0	1	1	16	0	0	13	2	0	3	68	0	0	104
6:45 AM	0	0	0	0	0	1	11	0	0	17	19	0	6	78	0	0	132
7:00 AM	0	0	0	0	3	0	19	0	0	26	17	0	7	87	0	0	159
7:15 AM	0	0	0	0	1	1	22	0	0	23	31	0	9	89	0	0	176
7:30 AM	0	0	0	0	6	2	24	0	0	43	18	0	10	124	0	0	227
7:45 AM	0	0	0	0	6	0	41	0	0	33	29	0	13	171	0	0	293
8:00 AM	0	0	0	0	5	2	41	0	0	48	29	0	6	154	0	0	285
8:15 AM	0	0	0	0	10	6	28	0	0	39	19	0	9	131	0	0	242
8:30 AM	0	0	0	0	7	7	34	0	0	46	29	0	8	139	0	0	270
8:45 AM	0	0	0	0	6	3	32	0	0	42	30	0	15	148	0	0	276
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	45	23	268	0	0	330	223	0	86	1189	0	0	2164
APPROACH %'s :					13.39%	6.85%	79.76%	0.00%	0.00%	59.67%	40.33%	0.00%	6.75%	93.25%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	28	15	144	0	0	166	106	0	36	595	0	0	1090
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.700	0.536	0.878	0.000	0.000	0.865	0.914	0.000	0.692	0.870	0.000	0.000	0.930
							0.974				0.883				0.857		

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1 NL	1 NT	1 NR	1 NU	1 SL	1 ST	1 SR	1 SU	1 EL	1 ET	1 ER	1 EU	1 WL	1 WT	1 WR	1 WU	TOTAL
3:30 PM	0	0	0	0	10	12	36	0	0	59	68	0	20	88	0	0	293
3:45 PM	0	0	0	0	13	14	27	0	0	103	117	0	35	85	0	0	394
4:00 PM	0	0	0	0	15	12	21	0	0	107	99	0	30	93	0	0	377
4:15 PM	0	0	0	0	8	13	30	0	0	70	77	0	23	66	0	0	287
4:30 PM	0	0	0	0	18	10	18	0	0	54	86	0	12	65	0	0	263
4:45 PM	0	0	0	0	12	3	22	0	0	70	64	0	19	65	0	0	255
5:00 PM	0	0	0	0	8	19	14	0	0	47	86	0	15	50	0	0	239
5:15 PM	0	0	0	0	9	8	17	0	0	52	73	0	15	54	0	0	228
5:30 PM	0	0	0	0	9	8	13	0	0	54	33	0	25	55	0	0	197
5:45 PM	0	0	0	0	7	5	13	0	0	38	38	0	14	51	0	0	166
6:00 PM	0	0	0	0	2	4	12	0	0	46	35	0	6	47	0	0	152
6:15 PM	0	0	0	0	7	13	10	0	0	20	30	0	9	48	0	0	137
6:30 PM	0	0	0	0	3	4	22	0	0	34	25	0	12	39	0	0	139
6:45 PM	0	0	0	0	6	6	23	0	0	26	24	0	12	44	0	0	141
7:00 PM	0	0	0	0	6	2	18	0	0	27	18	0	9	35	0	0	115
7:15 PM	0	0	0	0	4	4	8	0	0	22	17	0	8	27	0	0	90
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	137	137	304	0	0	829	890	0	264	912	0	0	3473
APPROACH %'s :					23.70%	23.70%	52.60%	0.00%	0.00%	48.23%	51.77%	0.00%	22.45%	77.55%	0.00%	0.00%	
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	46	51	114	0	0	339	361	0	108	332	0	0	1351
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.767	0.911	0.792	0.000	0.000	0.792	0.771	0.000	0.771	0.892	0.000	0.000	0.857
							0.909				0.795				0.894		

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49-20 WB Ramps & Dorsey Dr
City: Grass Valley
Control: Signalized

Project ID: 19-07390-005
Date: 10/23/2019

HT

NS/EW Streets:	SR 49-20 WB Ramps				SR 49-20 WB Ramps				Dorsey Dr				Dorsey Dr				
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	1	0	0	0	1	0	0	2
6:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
7:00 AM	0	0	0	0	0	0	1	0	0	1	1	0	0	2	0	0	5
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	4
7:30 AM	0	0	0	0	0	0	1	0	0	0	2	0	0	6	0	0	9
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	4	0	0	5
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	1	0	0	1	2	0	0	4
8:30 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
8:45 AM	0	0	0	0	0	0	1	0	0	4	1	0	0	2	0	0	8
	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	3	0	0	9	6	0	3	20	0	0	41
APPROACH %'s :					0.00%	0.00%	100.00%	0.00%	0.00%	60.00%	40.00%	0.00%	13.04%	86.96%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	2	2	0	1	6	0	0	11
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.500	0.000	0.250	0.375	0.000	0.000	0.550
									0.500				0.438				

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	1	0	0	0	0	0	0	0	0	0	1
3:45 PM	0	0	0	0	1	1	0	0	0	1	0	0	0	1	0	0	4
4:00 PM	0	0	0	0	0	1	0	0	0	3	0	0	1	0	0	0	5
4:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
5:15 PM	0	0	0	0	6	0	0	0	0	1	0	0	0	2	0	0	9
5:30 PM	0	0	0	0	1	0	1	0	0	0	3	0	0	1	0	0	6
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6:15 PM	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	3
6:30 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	3
6:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	10	2	3	0	0	11	8	0	1	6	0	0	41
APPROACH %'s :					66.67%	13.33%	20.00%	0.00%	0.00%	57.89%	42.11%	0.00%	14.29%	85.71%	0.00%	0.00%	
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	1	2	2	0	0	5	0	0	1	1	0	0	12
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.250	0.500	0.500	0.000	0.000	0.417	0.000	0.000	0.250	0.250	0.000	0.000	0.600
						0.625				0.417				0.500			

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49-20 WB Ramps & Dorsey Dr
City: Grass Valley
Control: Signalized

Project ID: 19-07390-005
Date: 10/23/2019

Bikes

NS/EW Streets:	SR 49-20 WB Ramps				SR 49-20 WB Ramps				Dorsey Dr				Dorsey Dr				
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	2	0	0	2
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	2	0	0	2
APPROACH %'s :													0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
PEAK HR FACTOR :	0.000	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			

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	1	0	0	1	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	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
6:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	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	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0
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	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	3
APPROACH %'s :					0.00%	100.00%	0.00%	0.00%	50.00%	50.00%	0.00%	0.00%					
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
						0.250				0.250							

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 49-20 WB Ramps & Dorsey Dr
City: Grass Valley
Project ID: 19-07390-005
Date: 10/23/2019

Pedestrians (Crosswalks)

NS/EW Streets:	SR 49-20 WB Ramps		SR 49-20 WB Ramps		Dorsey Dr		Dorsey Dr		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:30 AM	0	1	0	0	0	0	0	0	1
6:45 AM	0	1	0	0	0	0	0	1	2
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	1	1	0	0	0	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	1	0	0	0	0	0	0	1
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	1	4	0	0	0	0	0	1	6
APPROACH %'s :	20.00%	80.00%					0.00%	100.00%	
PEAK HR :	**07:45 AM - 08:45 AM**								TOTAL
PEAK HR VOL :	1	1	0	0	0	0	0	0	2
PEAK HR FACTOR :	0.250	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	1	0	0	0	0	0	0	0	1
3:45 PM	1	0	1	2	0	0	2	2	8
4:00 PM	1	0	0	0	0	0	0	0	1
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	1	0	0	0	0	0	0	1
5:00 PM	0	0	1	0	0	0	0	0	1
5:15 PM	1	0	3	0	0	0	0	0	4
5:30 PM	1	0	0	0	0	0	0	0	1
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	1	0	0	0	0	0	0	0	1
6:30 PM	2	1	0	0	0	0	1	1	5
6:45 PM	1	3	0	0	2	0	0	0	6
7:00 PM	0	1	0	0	0	0	0	0	1
7:15 PM	1	1	0	0	0	0	0	0	2
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	10	7	5	2	2	0	3	3	32
APPROACH %'s :	58.82%	41.18%	71.43%	28.57%	100.00%	0.00%	50.00%	50.00%	
PEAK HR :	**03:30 PM - 04:30 PM**								TOTAL
PEAK HR VOL :	3	0	1	2	0	0	2	2	10
PEAK HR FACTOR :	0.750		0.250	0.250			0.250	0.250	0.313
	0.750		0.250				0.250		

Prepared by National Data & Surveying Services

SR 49-20 WB Ramps & Dorsey Dr

Peak Hour Turning Movement Count

ID: 19-07390-005
City: Grass Valley

Day: Wednesday
Date: 10/23/2019

PEAK HOURS

AM: 07:45 AM - 08:45 AM
NOON: NONE
PM: 03:30 PM - 04:30 PM

COUNT PERIODS

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

SR 49-20 WB Ramps — SOUTHBOUND

AM	144	15	28	0	0	AM
NOON	0	0	0	0	0	NOON
PM	116	53	47	0	0	PM

EASTBOUND — Dorsey Dr

AM	NOON	PM	
745	0	449	
0	0	0	0
0	0	0	0
168	0	344	0
108	0	361	0

WESTBOUND — Dorsey Dr

PM	NOON	AM	
0	0	0	0
333	0	601	0
109	0	37	0
0	0	0	0
391	0	196	

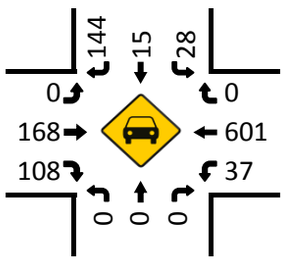
CONTROL: Signalized

	AM	NOON	PM
TEV	1101	0	1363
PHF	0.92		0.86

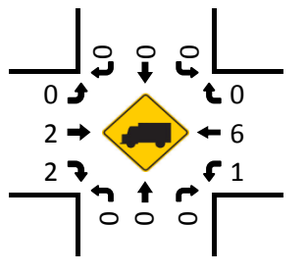
NORTHBOUND — SR 49-20 WB Ramps

PM	523	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	160	0	0	0	0	AM

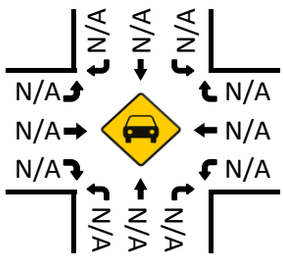
Total Vehicles (AM)



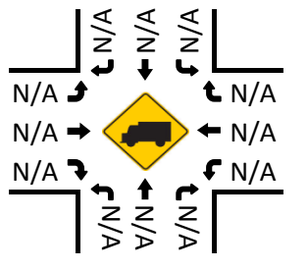
HT (AM)



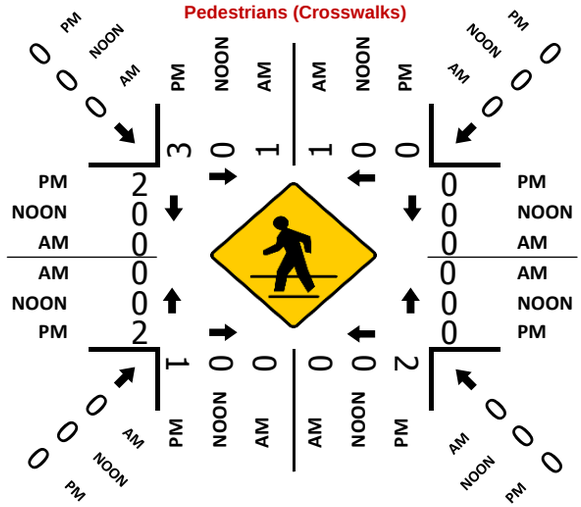
Total Vehicles (Noon)



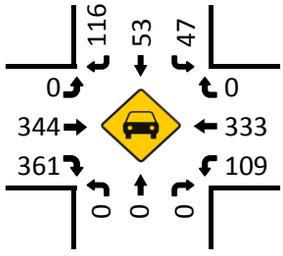
HT (NOON)



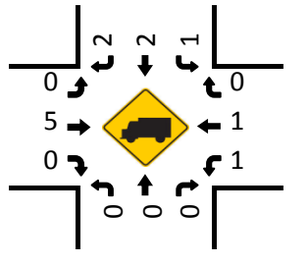
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



Day Type

1: Weekday (Tu-Th)

BRUNSWICK / LOMA RICA TURNING MOVEMENT COUNTS MIDWEEK AM / PM 2019

	0			Loma Rica East Leg WB IN			Brunswick South Leg NB IN			Brunswick North Leg SB IN			
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
Day Part													Total
0: All Day (12am-12am)	-	-	-	792	-	2,045	-	3,134	894	2,171	3,277	-	12,313
1: 6am (6am-7am)	-	-	-	4	-	13	-	123	89	110	54	-	393
2: 7am (7am-8am)	-	-	-	19	-	79	-	346	123	154	88	-	809
3: 8am (8am-9am)	-	-	-	30	-	140	-	347	87	153	119	-	876
4: 3pm (3pm-4pm)	-	-	-	86	-	208	-	230	49	152	322	-	1,047
5: 4pm (4pm-5pm)	-	-	-	97	-	228	-	196	38	124	362	-	1,045
6: 5pm (5pm-6pm)	-	-	-	103	-	154	-	242	30	104	451	-	1,084
7: 6pm (6pm-7pm)	-	-	-	39	-	108	-	177	20	48	264	-	656
8: 7pm (7pm-8pm)	-	-	-	33	-	55	-	94	10	63	197	-	452
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-

TURNING MOVEMENT PERCENTAGE

	0			Loma Rica East Leg WB IN			Brunswick South Leg NB IN			Brunswick North Leg SB IN		
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right
Day Part												
0: All Day (12am-12am)	-	-	-	28%	0%	72%	0%	78%	22%	40%	60%	0%
1: 6am (6am-7am)	-	-	-	24%	0%	76%	0%	58%	42%	67%	33%	0%
2: 7am (7am-8am)	-	-	-	19%	0%	81%	0%	74%	26%	64%	36%	0%
3: 8am (8am-9am)	-	-	-	18%	0%	82%	0%	80%	20%	56%	44%	0%
4: 3pm (3pm-4pm)	-	-	-	29%	0%	71%	0%	82%	18%	32%	68%	0%
5: 4pm (4pm-5pm)	-	-	-	30%	0%	70%	0%	84%	16%	26%	74%	0%
6: 5pm (5pm-6pm)	-	-	-	40%	0%	60%	0%	89%	11%	19%	81%	0%
7: 6pm (6pm-7pm)	-	-	-	27%	0%	73%	0%	90%	10%	15%	85%	0%
8: 7pm (7pm-8pm)	-	-	-	38%	0%	63%	0%	90%	10%	24%	76%	0%
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-

Prepared by National Data & Surveying Services

Lanes Count

Location: Tinloy St & Neal St
City: Grass Valley

Date: 8/28/2019
Day: Wednesday

TIME	Cars	
	STL	STR
6:30 AM	8	12
6:45 AM	12	13
7:00 AM	10	10
7:15 AM	17	19
7:30 AM	16	13
7:45 AM	48	29
8:00 AM	46	11
8:15 AM	69	23
8:30 AM	34	22
8:45 AM	36	37
Totals	*296*	*189*
3:30 PM	34	34
3:45 PM	42	54
4:00 PM	35	47
4:15 PM	29	49
4:30 PM	31	62
4:45 PM	44	44
5:00 PM	43	59
5:15 PM	33	52
5:30 PM	30	45
5:45 PM	39	41
6:00 PM	18	35
6:15 PM	16	23
6:30 PM	21	33
6:45 PM	25	31
7:00 PM	19	42
7:15 PM	17	19
Totals	*476*	*670*
Grand Totals	*772*	*859*

TIME	HT	
	STL	STR
6:30 AM	2	2
6:45 AM	2	1
7:00 AM	1	5
7:15 AM	0	1
7:30 AM	1	2
7:45 AM	3	2
8:00 AM	2	4
8:15 AM	2	1
8:30 AM	0	1
8:45 AM	3	1
Totals	*16*	*20*
3:30 PM	2	2
3:45 PM	2	0
4:00 PM	0	4
4:15 PM	1	2
4:30 PM	1	2
4:45 PM	0	2
5:00 PM	0	4
5:15 PM	1	1
5:30 PM	0	2
5:45 PM	0	0
6:00 PM	0	2
6:15 PM	0	1
6:30 PM	1	2
6:45 PM	2	1
7:00 PM	1	3
7:15 PM	1	0
Totals	*12*	*28*
Grand Totals	*28*	*48*

TIME	Bikes	
	STL	STR
6:30 AM	0	0
6:45 AM	0	0
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	1	0
7:45 AM	0	0
8:00 AM	0	0
8:15 AM	0	0
8:30 AM	0	0
8:45 AM	0	0
Totals	*1*	*0*
3:30 PM	0	0
3:45 PM	1	0
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	1
4:45 PM	0	0
5:00 PM	1	0
5:15 PM	0	1
5:30 PM	0	0
5:45 PM	0	0
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	0
6:45 PM	0	0
7:00 PM	0	0
7:15 PM	0	0
Totals	*2*	*2*
Grand Totals	*3*	*2*

TIME	Peds	
	NEB	NWB
6:30 AM	0	2
6:45 AM	0	2
7:00 AM	1	1
7:15 AM	0	1
7:30 AM	2	0
7:45 AM	0	1
8:00 AM	2	1
8:15 AM	0	0
8:30 AM	2	2
8:45 AM	0	0
Totals	*7*	*10*
3:30 PM	2	0
3:45 PM	1	1
4:00 PM	3	0
4:15 PM	1	0
4:30 PM	0	1
4:45 PM	1	3
5:00 PM	3	2
5:15 PM	1	1
5:30 PM	0	0
5:45 PM	0	0
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	0
6:45 PM	0	0
7:00 PM	0	0
7:15 PM	0	0
Totals	*12*	*8*
Grand Totals	*19*	*18*

Prepared by National Data & Surveying Services

Lanes Count

Location: Auburn St & Tinloy St/SR 49 On-Ramps
City: Grass Valley

Date: 8/28/2019
Day: Wednesday

TIME	Cars			
	NLT	NT	WLT	WT
6:30 AM	10	16	15	14
6:45 AM	17	36	18	12
7:00 AM	8	34	18	9
7:15 AM	16	32	31	11
7:30 AM	12	44	25	12
7:45 AM	24	52	52	18
8:00 AM	28	70	41	17
8:15 AM	53	71	34	19
8:30 AM	29	64	44	26
8:45 AM	25	73	46	19
Totals	*222*	*492*	*324*	*157*
3:30 PM	28	53	36	37
3:45 PM	29	57	45	33
4:00 PM	35	43	35	27
4:15 PM	31	55	32	34
4:30 PM	26	60	42	45
4:45 PM	28	60	49	32
5:00 PM	26	57	37	35
5:15 PM	40	63	34	26
5:30 PM	22	62	32	30
5:45 PM	27	45	25	21
6:00 PM	26	34	22	19
6:15 PM	19	47	23	20
6:30 PM	24	32	23	19
6:45 PM	22	32	28	15
7:00 PM	17	28	14	23
7:15 PM	14	31	20	21
Totals	*414*	*759*	*497*	*437*
Grand Totals	*636*	*1251*	*821*	*594*

TIME	HT			
	NLT	NT	WLT	WT
6:30 AM	1	1	0	2
6:45 AM	0	2	5	2
7:00 AM	1	1	4	8
7:15 AM	1	2	3	5
7:30 AM	0	0	2	4
7:45 AM	0	3	4	2
8:00 AM	1	0	1	4
8:15 AM	1	1	4	3
8:30 AM	0	1	0	3
8:45 AM	0	1	2	0
Totals	*5*	*12*	*25*	*33*
3:30 PM	1	0	2	2
3:45 PM	0	0	1	1
4:00 PM	0	1	0	2
4:15 PM	0	2	0	3
4:30 PM	0	2	0	1
4:45 PM	0	0	2	3
5:00 PM	0	0	0	3
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	1	0
6:00 PM	0	2	0	0
6:15 PM	0	0	1	0
6:30 PM	0	0	1	0
6:45 PM	0	1	2	1
7:00 PM	0	1	1	0
7:15 PM	0	0	1	0
Totals	*1*	*9*	*12*	*16*
Grand Totals	*6*	*21*	*37*	*49*

TIME	Bikes			
	NLT	NT	WLT	WT
6:30 AM	0	0	0	0
6:45 AM	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
Totals	*0*	*0*	*0*	*0*
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	1	0	0
6:00 PM	0	0	0	0
6:15 PM	0	0	0	0
6:30 PM	0	0	0	0
6:45 PM	0	0	0	0
7:00 PM	0	0	0	0
7:15 PM	0	0	0	0
Totals	*0*	*1*	*0*	*0*
Grand Totals	*0*	*1*	*0*	*0*

TIME	Peds			
	NEB	NWB	ENB	ESB
6:30 AM	0	0	0	0
6:45 AM	0	0	1	0
7:00 AM	0	0	0	0
7:15 AM	0	0	1	0
7:30 AM	0	0	1	1
7:45 AM	0	0	1	0
8:00 AM	0	0	0	0
8:15 AM	0	0	2	10
8:30 AM	0	0	1	2
8:45 AM	0	0	1	0
Totals	*0*	*0*	*8*	*13*
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	1	0
4:15 PM	0	0	0	1
4:30 PM	0	0	0	0
4:45 PM	0	0	0	3
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
6:00 PM	0	0	0	0
6:15 PM	0	0	0	0
6:30 PM	0	0	0	0
6:45 PM	0	0	0	1
7:00 PM	0	0	0	0
7:15 PM	0	0	0	0
Totals	*0*	*0*	*1*	*5*
Grand Totals	*0*	*0*	*9*	*18*

Prepared by National Data & Surveying Services

Lanes Count

Location: Bennett St & SR 49 WB Off Ramps/Tinloy St
City: Grass Valley

Date: 8/28/2019
Day: Wednesday

TIME	Cars	
	WTL	WTR
6:30 AM	13	15
6:45 AM	16	19
7:00 AM	25	15
7:15 AM	26	19
7:30 AM	36	35
7:45 AM	64	57
8:00 AM	66	69
8:15 AM	80	62
8:30 AM	53	54
8:45 AM	49	53
Totals	*428*	*398*
3:30 PM	61	47
3:45 PM	63	65
4:00 PM	71	71
4:15 PM	48	65
4:30 PM	46	65
4:45 PM	56	78
5:00 PM	75	73
5:15 PM	61	89
5:30 PM	56	65
5:45 PM	56	61
6:00 PM	35	62
6:15 PM	48	36
6:30 PM	34	40
6:45 PM	50	30
7:00 PM	24	35
7:15 PM	39	27
Totals	*823*	*909*
Grand Totals	*1251*	*1307*

TIME	HT	
	WTL	WTR
6:30 AM	0	1
6:45 AM	0	2
7:00 AM	0	2
7:15 AM	1	0
7:30 AM	0	0
7:45 AM	5	1
8:00 AM	5	0
8:15 AM	12	0
8:30 AM	10	1
8:45 AM	4	1
Totals	*37*	*8*
3:30 PM	2	1
3:45 PM	2	0
4:00 PM	1	0
4:15 PM	2	1
4:30 PM	2	1
4:45 PM	1	0
5:00 PM	0	1
5:15 PM	4	1
5:30 PM	0	2
5:45 PM	0	0
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	0
6:45 PM	1	0
7:00 PM	0	0
7:15 PM	0	0
Totals	*15*	*7*
Grand Totals	*52*	*15*

TIME	Bikes	
	WTL	WTR
6:30 AM	0	0
6:45 AM	0	0
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	0	0
8:00 AM	0	0
8:15 AM	0	0
8:30 AM	0	0
8:45 AM	0	0
Totals	*0*	*0*
3:30 PM	0	0
3:45 PM	0	0
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	0	0
5:00 PM	0	0
5:15 PM	0	0
5:30 PM	0	0
5:45 PM	0	0
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	0
6:45 PM	0	0
7:00 PM	0	0
7:15 PM	0	0
Totals	*0*	*0*
Grand Totals	*0*	*0*

TIME	Peds	
	ENB	ESB
6:30 AM	0	0
6:45 AM	0	0
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	0	0
8:00 AM	0	0
8:15 AM	0	0
8:30 AM	0	0
8:45 AM	0	0
Totals	*0*	*0*
3:30 PM	2	0
3:45 PM	0	0
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	0	0
5:00 PM	0	0
5:15 PM	0	0
5:30 PM	0	0
5:45 PM	0	1
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	1
6:45 PM	1	2
7:00 PM	0	1
7:15 PM	0	2
Totals	*3*	*7*
Grand Totals	*3*	*7*

Prepared by National Data & Surveying Services

Lanes Count

Location: Bennett St & Hansen Way/SR 49 EB Ramps
City: Grass Valley

Date: 8/28/2019
Day: Wednesday

TIME	Cars	
	NTL	NTR
6:30 AM	15	9
6:45 AM	17	11
7:00 AM	15	14
7:15 AM	14	11
7:30 AM	29	19
7:45 AM	46	20
8:00 AM	42	21
8:15 AM	46	49
8:30 AM	63	41
8:45 AM	54	41
Totals	*341*	*236*
3:30 PM	62	36
3:45 PM	61	38
4:00 PM	58	38
4:15 PM	42	31
4:30 PM	49	20
4:45 PM	64	22
5:00 PM	61	29
5:15 PM	65	31
5:30 PM	41	27
5:45 PM	48	25
6:00 PM	38	27
6:15 PM	34	16
6:30 PM	34	15
6:45 PM	31	13
7:00 PM	34	18
7:15 PM	43	19
Totals	*765*	*405*
Grand Totals	*1106*	*641*

TIME	HT	
	NTL	NTR
6:30 AM	0	0
6:45 AM	0	0
7:00 AM	2	0
7:15 AM	1	1
7:30 AM	1	1
7:45 AM	4	1
8:00 AM	5	2
8:15 AM	5	1
8:30 AM	0	4
8:45 AM	0	0
Totals	*18*	*10*
3:30 PM	2	0
3:45 PM	0	2
4:00 PM	0	0
4:15 PM	3	3
4:30 PM	0	0
4:45 PM	1	0
5:00 PM	0	0
5:15 PM	2	1
5:30 PM	1	2
5:45 PM	0	0
6:00 PM	0	0
6:15 PM	2	1
6:30 PM	1	0
6:45 PM	1	0
7:00 PM	1	0
7:15 PM	2	2
Totals	*16*	*11*
Grand Totals	*34*	*21*

TIME	Bikes	
	NTL	NTR
6:30 AM	0	0
6:45 AM	0	0
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	1	0
8:00 AM	0	0
8:15 AM	0	0
8:30 AM	0	0
8:45 AM	0	0
Totals	*1*	*0*
3:30 PM	0	0
3:45 PM	0	0
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	0	0
5:00 PM	0	0
5:15 PM	0	0
5:30 PM	0	0
5:45 PM	0	0
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	0
6:45 PM	0	0
7:00 PM	0	0
7:15 PM	0	0
Totals	*0*	*0*
Grand Totals	*1*	*0*

TIME	Peds	
	SEB	SWB
6:30 AM	0	1
6:45 AM	0	0
7:00 AM	0	1
7:15 AM	1	0
7:30 AM	0	0
7:45 AM	0	0
8:00 AM	1	0
8:15 AM	0	1
8:30 AM	2	0
8:45 AM	4	1
Totals	*8*	*4*
3:30 PM	0	1
3:45 PM	0	1
4:00 PM	1	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	0	1
5:00 PM	1	0
5:15 PM	1	0
5:30 PM	0	0
5:45 PM	0	3
6:00 PM	1	0
6:15 PM	0	2
6:30 PM	0	2
6:45 PM	0	0
7:00 PM	2	0
7:15 PM	0	0
Totals	*6*	*10*
Grand Totals	*14*	*14*

Prepared by National Data & Surveying Services

Lanes Count

Location: SR 49 NB Ramps & Idaho Maryland Rd
City: Grass Valley

Date: 8/28/2019
Day: Wednesday

TIME	Cars	
	WTL	WT
6:30 AM	34	4
6:45 AM	28	6
7:00 AM	38	5
7:15 AM	41	6
7:30 AM	52	18
7:45 AM	51	18
8:00 AM	69	26
8:15 AM	62	37
8:30 AM	76	21
8:45 AM	68	19
Totals	***519***	***160***
3:30 PM	121	63
3:45 PM	99	50
4:00 PM	106	49
4:15 PM	84	47
4:30 PM	124	57
4:45 PM	105	55
5:00 PM	156	87
5:15 PM	121	48
5:30 PM	125	49
5:45 PM	88	24
6:00 PM	78	22
6:15 PM	46	17
6:30 PM	36	15
6:45 PM	33	9
7:00 PM	40	7
7:15 PM	21	11
Totals	***1383***	***610***
Grand Totals	***1902***	***770***

TIME	HT	
	WTL	WT
6:30 AM	3	0
6:45 AM	7	1
7:00 AM	6	1
7:15 AM	6	0
7:30 AM	12	0
7:45 AM	13	2
8:00 AM	12	1
8:15 AM	12	1
8:30 AM	4	1
8:45 AM	3	2
Totals	***78***	***9***
3:30 PM	3	1
3:45 PM	3	1
4:00 PM	0	0
4:15 PM	3	2
4:30 PM	2	1
4:45 PM	2	0
5:00 PM	2	1
5:15 PM	0	1
5:30 PM	0	1
5:45 PM	3	0
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	1	1
6:45 PM	0	0
7:00 PM	0	0
7:15 PM	0	0
Totals	***19***	***9***
Grand Totals	***97***	***18***

TIME	Bikes	
	WTL	WT
6:30 AM	0	0
6:45 AM	0	0
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	0	0
8:00 AM	0	0
8:15 AM	0	0
8:30 AM	0	0
8:45 AM	0	1
Totals	***0***	***1***
3:30 PM	0	0
3:45 PM	0	1
4:00 PM	0	1
4:15 PM	0	0
4:30 PM	0	1
4:45 PM	0	0
5:00 PM	0	0
5:15 PM	0	1
5:30 PM	0	0
5:45 PM	0	1
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	1
6:45 PM	0	2
7:00 PM	0	0
7:15 PM	0	0
Totals	***0***	***8***
Grand Totals	***0***	***9***

TIME	Peds	
	ENB	ESB
6:30 AM	0	0
6:45 AM	0	0
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	0	0
8:00 AM	0	0
8:15 AM	0	0
8:30 AM	0	0
8:45 AM	0	0
Totals	***0***	***0***
3:30 PM	0	0
3:45 PM	0	0
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	0	0
5:00 PM	0	0
5:15 PM	0	0
5:30 PM	0	0
5:45 PM	0	0
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	0
6:45 PM	0	0
7:00 PM	0	0
7:15 PM	0	0
Totals	***0***	***0***
Grand Totals	***0***	***0***

Prepared by National Data & Surveying Services

Lanes Count

Location: E Main St/Nevada City Hwy & Brunswick Rd
City: Grass Valley

Date: 8/28/2019
Day: Wednesday

TIME	Cars			
	SL1	SL2	WL	WTL
6:30 AM	21	6	9	6
6:45 AM	23	7	21	7
7:00 AM	26	9	8	4
7:15 AM	33	9	20	6
7:30 AM	26	4	25	12
7:45 AM	26	8	37	25
8:00 AM	35	14	45	29
8:15 AM	54	16	34	23
8:30 AM	59	24	46	12
8:45 AM	56	21	35	16
Totals	*359*	*118*	*280*	*140*
3:30 PM	89	40	29	22
3:45 PM	84	33	37	15
4:00 PM	82	50	30	22
4:15 PM	82	29	31	22
4:30 PM	88	27	39	24
4:45 PM	81	31	29	23
5:00 PM	81	36	30	25
5:15 PM	75	28	29	21
5:30 PM	70	29	32	19
5:45 PM	67	25	29	16
6:00 PM	82	29	21	17
6:15 PM	88	16	18	13
6:30 PM	55	18	21	16
6:45 PM	53	21	14	16
7:00 PM	64	19	18	15
7:15 PM	42	8	12	13
Totals	*1183*	*439*	*419*	*299*
Grand Totals	*1542*	*557*	*699*	*439*

TIME	HT			
	SL1	SL2	WL	WTL
6:30 AM	0	0	0	0
6:45 AM	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	3	0	0	0
7:30 AM	1	0	1	0
7:45 AM	2	0	0	0
8:00 AM	2	0	1	1
8:15 AM	3	0	1	1
8:30 AM	1	0	1	0
8:45 AM	2	0	0	0
Totals	*14*	*0*	*4*	*2*
3:30 PM	0	0	0	1
3:45 PM	0	0	0	0
4:00 PM	3	1	0	0
4:15 PM	1	0	0	0
4:30 PM	1	0	0	0
4:45 PM	0	0	0	0
5:00 PM	2	0	0	0
5:15 PM	0	0	1	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
6:00 PM	2	0	0	0
6:15 PM	0	0	0	0
6:30 PM	0	0	2	0
6:45 PM	1	0	0	1
7:00 PM	1	0	0	0
7:15 PM	0	0	0	0
Totals	*11*	*1*	*3*	*2*
Grand Totals	*25*	*1*	*7*	*4*

TIME	Bikes			
	SL1	SL2	WL	WTL
6:30 AM	0	0	0	0
6:45 AM	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
Totals	*0*	*0*	*0*	*0*
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
6:00 PM	0	0	0	0
6:15 PM	0	0	0	0
6:30 PM	0	0	0	0
6:45 PM	0	0	0	0
7:00 PM	0	0	0	1
7:15 PM	0	0	0	0
Totals	*0*	*0*	*0*	*1*
Grand Totals	*0*	*0*	*0*	*1*

TIME	Peds			
	NEB	NWB	ENB	ESB
6:30 AM	0	0	0	0
6:45 AM	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	1	0	0	0
7:30 AM	1	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
Totals	*2*	*0*	*0*	*0*
3:30 PM	1	0	0	0
3:45 PM	2	0	0	0
4:00 PM	1	0	0	0
4:15 PM	0	0	0	0
4:30 PM	1	0	0	0
4:45 PM	1	0	0	0
5:00 PM	1	0	0	0
5:15 PM	2	0	0	0
5:30 PM	0	0	0	0
5:45 PM	1	0	0	0
6:00 PM	1	0	0	0
6:15 PM	0	0	0	0
6:30 PM	1	1	0	0
6:45 PM	0	0	0	0
7:00 PM	0	0	0	0
7:15 PM	0	0	0	0
Totals	*12*	*1*	*0*	*0*
Grand Totals	*14*	*1*	*0*	*0*

Prepared by National Data & Surveying Services

Lanes Count

Location: SR 49 SB Ramps & Brunswick Rd
City: Grass Valley

Date: 8/28/2019
Day: Wednesday

TIME	Cars					
	SL1	SL2	ET	ETR	WT1	WT2
6:30 AM	13	4	11	22	8	24
6:45 AM	28	13	10	27	25	31
7:00 AM	18	11	15	31	9	44
7:15 AM	22	18	18	33	15	44
7:30 AM	23	14	12	38	30	51
7:45 AM	34	15	24	45	38	57
8:00 AM	38	31	20	50	57	51
8:15 AM	38	34	30	60	46	58
8:30 AM	26	26	40	73	40	87
8:45 AM	43	39	36	74	37	87
Totals	*283*	*205*	*216*	*453*	*305*	*534*
3:30 PM	38	36	46	111	37	105
3:45 PM	33	31	45	107	35	93
4:00 PM	52	39	64	114	46	119
4:15 PM	41	40	49	124	45	97
4:30 PM	41	39	41	117	45	86
4:45 PM	37	38	49	111	42	106
5:00 PM	54	57	48	106	38	94
5:15 PM	33	30	47	106	33	85
5:30 PM	23	22	41	104	37	72
5:45 PM	24	27	39	84	34	66
6:00 PM	30	24	43	107	33	62
6:15 PM	28	26	28	103	20	59
6:30 PM	25	20	29	62	27	40
6:45 PM	23	20	32	70	19	45
7:00 PM	16	21	26	74	25	55
7:15 PM	17	24	27	59	17	36
Totals	*515*	*494*	*654*	*1559*	*533*	*1220*
Grand Totals	*798*	*699*	*870*	*2012*	*838*	*1754*

TIME	HT					
	SL1	SL2	ET	ETR	WT1	WT2
6:30 AM	0	0	0	0	0	3
6:45 AM	0	1	1	1	0	2
7:00 AM	1	2	0	1	0	2
7:15 AM	0	0	0	3	0	2
7:30 AM	1	1	0	1	1	2
7:45 AM	0	0	0	2	0	2
8:00 AM	0	1	3	3	2	0
8:15 AM	0	2	1	3	2	2
8:30 AM	0	0	0	1	1	1
8:45 AM	0	0	1	2	0	0
Totals	*2*	*7*	*6*	*17*	*6*	*16*
3:30 PM	0	1	0	1	1	1
3:45 PM	0	2	0	0	0	1
4:00 PM	1	3	1	3	0	1
4:15 PM	0	4	0	0	0	0
4:30 PM	0	1	0	1	0	0
4:45 PM	1	1	0	0	0	0
5:00 PM	0	1	0	2	0	0
5:15 PM	0	2	0	0	1	1
5:30 PM	0	1	0	2	0	0
5:45 PM	0	0	0	0	0	0
6:00 PM	0	0	0	2	0	0
6:15 PM	0	1	0	0	0	0
6:30 PM	0	1	0	0	2	0
6:45 PM	1	1	0	0	0	0
7:00 PM	0	2	2	3	0	1
7:15 PM	0	1	0	0	0	0
Totals	*3*	*22*	*3*	*14*	*4*	*5*
Grand Totals	*5*	*29*	*9*	*31*	*10*	*21*

TIME	Bikes					
	SL1	SL2	ET	ETR	WT1	WT2
6:30 AM	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0
7:45 AM	0	0	0	1	0	0
8:00 AM	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0
Totals	*0*	*0*	*0*	*1*	*0*	*0*
3:30 PM	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	2
6:30 PM	0	0	0	0	0	0
6:45 PM	0	0	0	1	0	0
7:00 PM	0	0	0	0	0	1
7:15 PM	0	0	0	0	0	0
Totals	*0*	*0*	*0*	*1*	*0*	*3*
Grand Totals	*0*	*0*	*0*	*2*	*0*	*3*

TIME	Peds					
	NEB	NWB	ENB	ESB	WNB	WSB
6:30 AM	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0
Totals	*0*	*0*	*0*	*0*	*0*	*0*
3:30 PM	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0
Totals	*0*	*0*	*0*	*0*	*0*	*0*
Grand Totals	*0*	*0*	*0*	*0*	*0*	*0*

Prepared by National Data & Surveying Services

Lanes Count

Location: SR 49 NB Ramps & Brunswick Rd
City: Grass Valley

Date: 8/28/2019
Day: Wednesday

TIME	Cars			
	ET1	ET2	WT1	WT2
6:30 AM	24	13	11	31
6:45 AM	36	24	18	38
7:00 AM	33	17	6	60
7:15 AM	40	27	26	36
7:30 AM	37	32	36	80
7:45 AM	56	36	39	76
8:00 AM	54	57	56	57
8:15 AM	70	58	54	82
8:30 AM	66	59	46	87
8:45 AM	87	78	45	91
Totals	*503*	*401*	*337*	*638*
3:30 PM	81	87	58	142
3:45 PM	79	68	52	154
4:00 PM	102	95	66	146
4:15 PM	93	94	69	163
4:30 PM	78	87	77	146
4:45 PM	75	95	57	161
5:00 PM	93	108	72	181
5:15 PM	82	75	54	161
5:30 PM	62	71	53	129
5:45 PM	55	68	55	125
6:00 PM	64	66	44	107
6:15 PM	55	67	38	87
6:30 PM	56	45	35	75
6:45 PM	43	55	23	72
7:00 PM	41	53	39	75
7:15 PM	42	48	29	61
Totals	*1101*	*1182*	*821*	*1985*
Grand Totals	*1604*	*1583*	*1158*	*2623*

TIME	HT			
	ET1	ET2	WT1	WT2
6:30 AM	0	0	0	3
6:45 AM	0	2	0	7
7:00 AM	0	4	0	5
7:15 AM	0	1	0	3
7:30 AM	2	1	0	6
7:45 AM	0	0	0	2
8:00 AM	3	3	2	2
8:15 AM	2	2	1	3
8:30 AM	0	1	1	3
8:45 AM	0	1	0	1
Totals	*7*	*15*	*4*	*35*
3:30 PM	0	3	0	4
3:45 PM	0	2	0	2
4:00 PM	1	6	0	2
4:15 PM	0	4	0	2
4:30 PM	0	4	0	3
4:45 PM	2	1	0	0
5:00 PM	0	2	0	0
5:15 PM	1	1	0	2
5:30 PM	0	2	1	0
5:45 PM	1	0	0	1
6:00 PM	0	4	0	0
6:15 PM	0	1	0	1
6:30 PM	0	1	1	0
6:45 PM	1	2	0	0
7:00 PM	2	4	0	0
7:15 PM	0	1	0	0
Totals	*8*	*38*	*2*	*17*
Grand Totals	*15*	*53*	*6*	*52*

TIME	Bikes			
	ET1	ET2	WT1	WT2
6:30 AM	0	0	0	0
6:45 AM	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	1	0	0
7:45 AM	0	1	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	1	0	0
Totals	*0*	*3*	*0*	*0*
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
6:00 PM	0	0	0	1
6:15 PM	0	0	0	0
6:30 PM	0	0	0	0
6:45 PM	0	1	0	0
7:00 PM	0	0	0	1
7:15 PM	0	0	0	0
Totals	*0*	*1*	*0*	*2*
Grand Totals	*0*	*4*	*0*	*2*

TIME	Peds			
	ENB	ESB	WNB	WSB
6:30 AM	0	0	0	0
6:45 AM	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
Totals	*0*	*0*	*0*	*0*
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
6:00 PM	0	0	0	0
6:15 PM	0	0	0	0
6:30 PM	0	0	0	0
6:45 PM	0	0	0	0
7:00 PM	0	0	0	0
7:15 PM	0	0	0	0
Totals	*0*	*0*	*0*	*0*
Grand Totals	*0*	*0*	*0*	*0*

Prepared by National Data & Surveying Services

Lanes Count

Location: Sutton Way & Brunswick Rd
City: Grass Valley

Date: 8/28/2019
Day: Wednesday

TIME	Cars							
	NL1	NL2	EL1	EL2	ET1	ET2	WT	WTR
6:30 AM	9	2	2	9	34	17	6	33
6:45 AM	17	2	11	15	47	34	21	49
7:00 AM	12	4	7	10	42	19	9	59
7:15 AM	15	4	11	17	56	28	24	42
7:30 AM	25	2	10	19	43	32	32	72
7:45 AM	38	5	18	23	73	44	29	89
8:00 AM	29	7	17	28	64	41	41	83
8:15 AM	41	15	21	24	71	46	42	74
8:30 AM	42	11	18	21	63	47	37	80
8:45 AM	45	19	23	27	79	49	24	85
Totals	***273***	***71***	***138***	***193***	***572***	***357***	***265***	***666***
3:30 PM	35	76	33	45	84	44	55	103
3:45 PM	30	111	29	31	76	44	33	98
4:00 PM	31	89	34	47	78	52	52	114
4:15 PM	18	113	28	23	88	39	37	121
4:30 PM	26	104	25	26	66	50	47	108
4:45 PM	24	82	24	29	80	46	38	112
5:00 PM	29	115	27	33	76	35	57	106
5:15 PM	31	87	22	32	75	49	38	111
5:30 PM	28	69	17	36	57	44	31	80
5:45 PM	24	71	12	34	60	36	26	77
6:00 PM	20	61	15	26	62	35	27	64
6:15 PM	17	55	15	24	53	34	27	64
6:30 PM	21	48	12	17	56	15	17	54
6:45 PM	15	36	5	18	41	26	14	52
7:00 PM	15	50	16	15	32	16	20	37
7:15 PM	15	33	14	12	44	18	11	43
Totals	***379***	***1200***	***328***	***448***	***1028***	***583***	***530***	***1344***
Grand Totals	***652***	***1271***	***466***	***641***	***1600***	***940***	***795***	***2010***

TIME	HT							
	NL1	NL2	EL1	EL2	ET1	ET2	WT	WTR
6:30 AM	0	0	0	2	0	0	0	2
6:45 AM	0	1	0	1	0	1	1	8
7:00 AM	1	0	0	1	1	4	0	6
7:15 AM	0	0	0	0	0	1	0	3
7:30 AM	0	0	0	1	2	1	1	3
7:45 AM	1	2	0	0	0	2	0	6
8:00 AM	1	0	0	1	3	0	2	2
8:15 AM	1	0	0	0	2	5	2	4
8:30 AM	2	1	0	1	0	0	1	5
8:45 AM	1	1	0	0	0	0	0	2
Totals	***7***	***5***	***0***	***7***	***8***	***14***	***7***	***41***
3:30 PM	0	1	0	0	0	4	0	3
3:45 PM	0	1	0	0	2	3	1	3
4:00 PM	0	1	3	0	2	6	1	2
4:15 PM	0	0	0	0	0	5	0	0
4:30 PM	0	4	0	0	1	3	0	3
4:45 PM	0	1	0	0	2	2	0	0
5:00 PM	0	0	0	0	1	1	0	2
5:15 PM	0	1	0	1	0	1	1	2
5:30 PM	0	0	0	0	0	1	1	1
5:45 PM	0	0	1	0	0	0	0	2
6:00 PM	0	0	0	0	0	2	0	0
6:15 PM	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	1	0	0
6:45 PM	0	0	0	1	0	0	0	0
7:00 PM	0	1	1	1	0	4	0	1
7:15 PM	0	0	0	0	2	1	0	0
Totals	***0***	***10***	***5***	***3***	***10***	***34***	***4***	***19***
Grand Totals	***7***	***15***	***5***	***10***	***18***	***48***	***11***	***60***

TIME	Bikes							
	NL1	NL2	EL1	EL2	ET1	ET2	WT	WTR
6:30 AM	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	1	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
Totals	***0***	***0***	***0***	***0***	***0***	***1***	***0***	***0***
3:30 PM	0	0	0	0	0	0	0	0
3:45 PM	0	1	0	0	0	0	0	0
4:00 PM	0	1	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	1	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
6:00 PM	0	1	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0
Totals	***0***	***4***	***0***	***0***	***0***	***0***	***0***	***0***
Grand Totals	***0***	***4***	***0***	***0***	***0***	***1***	***0***	***0***

TIME	Peds					
	SEB	SWB	ENB	ESB	WNB	WSB
6:30 AM	0	1				
6:45 AM	0	1				
7:00 AM	0	2				
7:15 AM	0	0				
7:30 AM	0	1				
7:45 AM	1	0				
8:00 AM	2	0				
8:15 AM	0	2				
8:30 AM	0	1				
8:45 AM	0	0				
Totals	***3***	***8***	***0***	***0***	***0***	***0***
3:30 PM	0	0				
3:45 PM	0	0				
4:00 PM	0	0				
4:15 PM	0	0				
4:30 PM	0	0				
4:45 PM	0	0				
5:00 PM	0	0				
5:15 PM	0	0				
5:30 PM	0	0				
5:45 PM	0	0				
6:00 PM	0	0				
6:15 PM	0	0				
6:30 PM	0	0				
6:45 PM	0	0				
7:00 PM	0	0				
7:15 PM	0	0				
Totals	***0***	***0***	***0***	***0***	***0***	***0***
Grand Totals	***3***	***8***	***0***	***0***	***0***	***0***

Prepared by National Data & Surveying Services

Lanes Count

Location: Brunswick Rd & Whispering Pines Ln
City: Grass Valley

Date: 8/28/2019
Day: Wednesday

TIME	Cars	
	ST	STR
6:30 AM	37	16
6:45 AM	73	39
7:00 AM	52	21
7:15 AM	53	32
7:30 AM	54	38
7:45 AM	79	42
8:00 AM	72	36
8:15 AM	78	63
8:30 AM	82	41
8:45 AM	90	35
Totals	*670*	*363*
3:30 PM	103	40
3:45 PM	105	48
4:00 PM	105	43
4:15 PM	105	47
4:30 PM	100	43
4:45 PM	126	59
5:00 PM	106	50
5:15 PM	121	39
5:30 PM	117	24
5:45 PM	97	18
6:00 PM	106	14
6:15 PM	94	11
6:30 PM	84	12
6:45 PM	76	27
7:00 PM	46	30
7:15 PM	50	20
Totals	*1541*	*525*
Grand Totals	*2211*	*888*

TIME	HT	
	ST	STR
6:30 AM	0	1
6:45 AM	1	0
7:00 AM	3	1
7:15 AM	2	1
7:30 AM	4	0
7:45 AM	2	0
8:00 AM	5	0
8:15 AM	3	6
8:30 AM	2	2
8:45 AM	0	1
Totals	*22*	*12*
3:30 PM	4	3
3:45 PM	3	1
4:00 PM	9	0
4:15 PM	5	2
4:30 PM	6	1
4:45 PM	4	2
5:00 PM	1	1
5:15 PM	1	0
5:30 PM	2	0
5:45 PM	2	1
6:00 PM	3	1
6:15 PM	0	0
6:30 PM	1	0
6:45 PM	1	1
7:00 PM	3	1
7:15 PM	3	0
Totals	*48*	*14*
Grand Totals	*70*	*26*

TIME	Bikes	
	ST	STR
6:30 AM	0	0
6:45 AM	0	0
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	0	0
8:00 AM	0	0
8:15 AM	0	1
8:30 AM	0	0
8:45 AM	0	0
Totals	*0*	*1*
3:30 PM	0	0
3:45 PM	0	0
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	0	0
5:00 PM	0	0
5:15 PM	0	0
5:30 PM	0	0
5:45 PM	0	0
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	0
6:45 PM	0	0
7:00 PM	0	0
7:15 PM	0	0
Totals	*0*	*0*
Grand Totals	*0*	*1*

TIME	Peds	
	NEB	NWB
6:30 AM	0	0
6:45 AM	0	0
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	0	0
8:00 AM	0	0
8:15 AM	0	0
8:30 AM	0	0
8:45 AM	0	0
Totals	*0*	*0*
3:30 PM	0	0
3:45 PM	0	0
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	0	0
5:00 PM	0	0
5:15 PM	0	0
5:30 PM	0	0
5:45 PM	0	0
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	0
6:45 PM	0	0
7:00 PM	0	0
7:15 PM	0	0
Totals	*0*	*0*
Grand Totals	*0*	*0*

Prepared by National Data & Surveying Services

Lanes Count

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

Date: 9/4/2019
Day: Wednesday

TIME	Cars			
	ET	ETR	WLT	WT
6:30 AM	46	60	22	1
6:45 AM	64	97	29	9
7:00 AM	35	52	37	6
7:15 AM	53	68	25	9
7:30 AM	52	68	35	17
7:45 AM	70	105	44	18
8:00 AM	70	77	57	17
8:15 AM	84	97	43	19
8:30 AM	60	80	66	16
8:45 AM	75	87	44	19
Totals	*609*	*791*	*402*	*131*
3:30 PM	44	64	96	54
3:45 PM	53	59	91	48
4:00 PM	52	70	96	43
4:15 PM	52	44	72	40
4:30 PM	52	45	96	51
4:45 PM	55	50	95	49
5:00 PM	40	50	127	74
5:15 PM	48	50	100	49
5:30 PM	40	26	96	48
5:45 PM	41	34	61	35
6:00 PM	36	25	65	21
6:15 PM	33	27	50	18
6:30 PM	29	20	52	13
6:45 PM	27	19	37	22
7:00 PM	26	11	40	19
7:15 PM	18	12	23	12
Totals	*646*	*606*	*1197*	*596*
Grand Totals	*1255*	*1397*	*1599*	*727*

TIME	HT			
	ET	ETR	WLT	WT
6:30 AM	2	3	7	1
6:45 AM	0	2	6	1
7:00 AM	4	0	3	1
7:15 AM	2	1	3	1
7:30 AM	1	1	8	2
7:45 AM	2	1	12	2
8:00 AM	1	4	3	1
8:15 AM	1	5	5	0
8:30 AM	0	8	8	3
8:45 AM	1	3	5	3
Totals	*14*	*28*	*60*	*15*
3:30 PM	1	3	3	0
3:45 PM	3	4	3	2
4:00 PM	5	2	1	1
4:15 PM	6	5	1	1
4:30 PM	8	2	2	3
4:45 PM	1	6	4	0
5:00 PM	10	4	0	0
5:15 PM	7	5	0	0
5:30 PM	2	6	2	1
5:45 PM	0	0	3	0
6:00 PM	1	2	1	1
6:15 PM	0	1	0	0
6:30 PM	2	3	0	0
6:45 PM	0	0	0	0
7:00 PM	0	2	1	0
7:15 PM	0	1	0	0
Totals	*46*	*46*	*21*	*9*
Grand Totals	*60*	*74*	*81*	*24*

TIME	Bikes			
	ET	ETR	WLT	WT
6:30 AM	0	0	0	0
6:45 AM	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	1
Totals	*0*	*0*	*0*	*1*
3:30 PM	0	0	0	1
3:45 PM	0	1	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	1
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	2
5:15 PM	0	0	0	0
5:30 PM	0	0	0	1
5:45 PM	0	0	0	0
6:00 PM	0	0	0	0
6:15 PM	0	0	0	1
6:30 PM	0	0	0	1
6:45 PM	0	0	0	0
7:00 PM	0	0	0	2
7:15 PM	0	0	0	1
Totals	*0*	*1*	*0*	*10*
Grand Totals	*0*	*1*	*0*	*11*

TIME	Peds			
	NEB	NWB	ENB	ESB
6:30 AM	0	0	0	0
6:45 AM	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
Totals	*0*	*0*	*0*	*0*
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
6:00 PM	0	0	0	0
6:15 PM	0	0	0	0
6:30 PM	0	0	0	0
6:45 PM	0	0	0	0
7:00 PM	0	0	0	0
7:15 PM	0	0	0	0
Totals	*0*	*0*	*0*	*0*
Grand Totals	*0*	*0*	*0*	*0*

TECHNICAL LOS APPENDIX II

FOR

IDAHO-MARYLAND MINE PROJECT
TRAFFIC IMPACT ANALYSIS

Nevada County, CA

CLASS AND VOLUME ADT's

Prepared For:

Rise Grass Valley Inc.

Prepared By:

KD Anderson & Associates, Inc.
3853 Taylor Road, Suite G
Loomis, CA 95650
(916) 660-1555

April 8, 2021

CLASS AND VOLUME ADT's

DAILY VEHICLE CLASSIFICATION COUNTS

OVERALL DAILY VOLUME COUNTS

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Wednesday
Date: 9/4/2019

City: Grass Valley
Project #: CA19_7288_001

DAILY TOTALS	NB	SB	EB	WB	Total
	4,669	4,783	0	0	9,452

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	3		2		0	0	5		**12:00**	95		69		0	0	164	
00:15	2		4		0	0	6		**12:15**	68		97		0	0	165	
00:30	0		4		0	0	4		**12:30**	95		91		0	0	186	
00:45	1	6	0	10	0	0	1	16	**12:45**	85	343	99	356	0	0	184	699
01:00	2		3		0	0	5		**13:00**	83		84		0	0	167	
01:15	2		2		0	0	4		**13:15**	72		74		0	0	146	
01:30	1		3		0	0	4		**13:30**	62		87		0	0	149	
01:45	1	6	3	11	0	0	4	17	**13:45**	86	303	94	339	0	0	180	642
02:00	2		3		0	0	5		**14:00**	89		93		0	0	182	
02:15	2		2		0	0	4		**14:15**	71		92		0	0	163	
02:30	0		2		0	0	2		**14:30**	64		98		0	0	162	
02:45	2	6	2	9	0	0	4	15	**14:45**	78	302	101	384	0	0	179	686
03:00	1		0		0	0	1		**15:00**	77		100		0	0	177	
03:15	2		0		0	0	2		**15:15**	105		102		0	0	207	
03:30	2		2		0	0	4		**15:30**	90		121		0	0	211	
03:45	5	10	0	2	0	0	5	12	**15:45**	85	357	123	446	0	0	208	803
04:00	0		1		0	0	1		**16:00**	83		103		0	0	186	
04:15	6		1		0	0	7		**16:15**	84		92		0	0	176	
04:30	8		1		0	0	9		**16:30**	71		125		0	0	196	
04:45	8	22	2	5	0	0	10	27	**16:45**	84	322	132	452	0	0	216	774
05:00	13		10		0	0	23		**17:00**	78		149		0	0	227	
05:15	7		18		0	0	25		**17:15**	78		121		0	0	199	
05:30	23		16		0	0	39		**17:30**	72		91		0	0	163	
05:45	35	78	34	78	0	0	69	156	**17:45**	85	313	82	443	0	0	167	756
06:00	29		11		0	0	40		**18:00**	64		96		0	0	160	
06:15	42		21		0	0	63		**18:15**	50		82		0	0	132	
06:30	60		24		0	0	84		**18:30**	58		80		0	0	138	
06:45	88	219	25	81	0	0	113	300	**18:45**	36	208	72	330	0	0	108	538
07:00	65		39		0	0	104		**19:00**	31		69		0	0	100	
07:15	102		49		0	0	151		**19:15**	26		56		0	0	82	
07:30	122		51		0	0	173		**19:30**	39		52		0	0	91	
07:45	141	430	44	183	0	0	185	613	**19:45**	18	114	37	214	0	0	55	328
08:00	108		62		0	0	170		**20:00**	33		50		0	0	83	
08:15	126		82		0	0	208		**20:15**	25		45		0	0	70	
08:30	114		60		0	0	174		**20:30**	19		33		0	0	52	
08:45	113	461	64	268	0	0	177	729	**20:45**	19	96	26	154	0	0	45	250
09:00	86		60		0	0	146		**21:00**	11		31		0	0	42	
09:15	70		82		0	0	152		**21:15**	14		22		0	0	36	
09:30	89		65		0	0	154		**21:30**	7		21		0	0	28	
09:45	84	329	69	276	0	0	153	605	**21:45**	9	41	17	91	0	0	26	132
10:00	88		60		0	0	148		**22:00**	9		20		0	0	29	
10:15	82		56		0	0	138		**22:15**	10		19		0	0	29	
10:30	82		54		0	0	136		**22:30**	10		12		0	0	22	
10:45	82	334	66	236	0	0	148	570	**22:45**	7	36	7	58	0	0	14	94
11:00	82		92		0	0	174		**23:00**	4		6		0	0	10	
11:15	81		80		0	0	161		**23:15**	5		5		0	0	10	
11:30	71		79		0	0	150		**23:30**	1		7		0	0	8	
11:45	88	322	84	335	0	0	172	657	**23:45**	1	11	4	22	0	0	5	33
TOTALS		2223		1494				**3717**	**TOTALS**		2446		3289				**5735**
SPLIT %		59.8%		40.2%				**39.3%**	**SPLIT %**		42.7%		57.3%				**60.7%**

DAILY TOTALS	NB	SB	EB	WB	Total
	4,669	4,783	0	0	9,452

AM Peak Hour	07:30	11:45					**07:45**		**PM Peak Hour**	15:15	16:30					**16:30**	
AM Pk Volume	497	341					**737**		**PM Pk Volume**	363	527					**838**	
Pk Hr Factor	0.881	0.879					**0.886**		**Pk Hr Factor**	0.864	0.884					**0.923**	
7 - 9 Volume	891	451	0	0			**1342**		**4 - 6 Volume**	635	895	0	0			**1530**	
7 - 9 Peak Hour	07:30	08:00					**07:45**		**4 - 6 Peak Hour**	16:00	16:30					**16:30**	
7 - 9 Pk Volume	497	268	0	0			**737**		**4 - 6 Pk Volume**	322	527	0	0			**838**	
Pk Hr Factor	0.881	0.817	0.000	0.000			**0.886**		**Pk Hr Factor**	0.958	0.884	0.000	0.000			**0.923**	

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Wednesday
Date: 9/4/2019

City: Grass Valley
Project #: CA19_7288_001n

North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	6
01:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
02:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
03:00	0	7	2	0	1	0	0	0	0	0	0	0	0	10
04:00	1	13	6	0	2	0	0	0	0	0	0	0	0	22
05:00	0	41	30	0	7	0	0	0	0	0	0	0	0	78
06:00	3	123	64	0	29	0	0	0	0	0	0	0	0	219
07:00	3	287	98	2	35	1	0	2	0	0	2	0	0	430
08:00	4	321	103	2	27	0	0	3	1	0	0	0	0	461
09:00	0	233	73	2	18	1	0	0	0	0	2	0	0	329
10:00	2	221	84	2	17	5	0	2	0	0	1	0	0	334
11:00	5	215	79	0	19	2	0	0	2	0	0	0	0	322
12:00 PM	3	242	79	1	14	0	0	2	0	0	2	0	0	343
13:00	1	201	76	3	20	1	0	0	0	0	1	0	0	303
14:00	2	200	75	3	17	4	0	1	0	0	0	0	0	302
15:00	1	252	78	2	20	1	0	0	2	0	1	0	0	357
16:00	3	223	72	0	20	2	0	1	0	0	1	0	0	322
17:00	6	220	68	0	18	1	0	0	0	0	0	0	0	313
18:00	1	143	47	0	14	0	0	1	1	0	1	0	0	208
19:00	1	74	31	0	6	1	0	0	1	0	0	0	0	114
20:00	2	69	21	0	3	0	0	1	0	0	0	0	0	96
21:00	1	28	8	0	3	0	0	1	0	0	0	0	0	41
22:00	0	29	6	0	1	0	0	0	0	0	0	0	0	36
23:00	0	7	4	0	0	0	0	0	0	0	0	0	0	11
Totals	**39**	**3166**	**1105**	**17**	**291**	**19**		**14**	**7**		**11**			**4669**
% of Totals	1%	68%	24%	0%	6%	0%		0%	0%		0%			100%

AM Volumes	18	1478	540	8	155	9	0	7	3	0	5	0	0	2223
% AM	0%	32%	12%	0%	3%	0%		0%	0%		0%			48%
AM Peak Hour	11:00	08:00	08:00	07:00	07:00	10:00		08:00	11:00		07:00			08:00
Volume	5	321	103	2	35	5		3	2		2			461
PM Volumes	21	1688	565	9	136	10	0	7	4	0	6	0	0	2446
% PM	0%	36%	12%	0%	3%	0%		0%	0%		0%			52%
PM Peak Hour	17:00	15:00	12:00	13:00	13:00	14:00		12:00	15:00		12:00			15:00
Volume	6	252	79	3	20	4		2	2		2			357

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	891		19%	646		14%	635		14%	2497		53%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Wednesday
Date: 9/4/2019

City: Grass Valley
Project #: CA19_7288_001s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	10	0	0	0	0	0	0	0	0	0	0	0	10
01:00	0	9	2	0	0	0	0	0	0	0	0	0	0	11
02:00	0	7	1	0	1	0	0	0	0	0	0	0	0	9
03:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
04:00	1	3	0	0	0	0	0	0	1	0	0	0	0	5
05:00	0	27	37	0	10	3	0	0	0	0	1	0	0	78
06:00	0	44	30	1	2	1	0	0	1	0	2	0	0	81
07:00	1	126	41	3	5	3	0	2	2	0	0	0	0	183
08:00	1	199	55	0	10	0	0	1	1	0	1	0	0	268
09:00	0	178	87	0	7	1	0	1	1	0	1	0	0	276
10:00	3	167	50	3	10	0	0	1	0	0	2	0	0	236
11:00	0	233	84	2	8	4	0	1	1	0	2	0	0	335
12:00 PM	3	250	87	1	9	3	1	0	1	0	1	0	0	356
13:00	2	230	88	0	13	3	0	1	1	0	1	0	0	339
14:00	0	279	86	1	16	1	0	1	0	0	0	0	0	384
15:00	5	319	104	0	15	2	0	1	0	0	0	0	0	446
16:00	2	320	112	0	17	1	0	0	0	0	0	0	0	452
17:00	4	338	90	0	10	0	0	1	0	0	0	0	0	443
18:00	2	252	67	0	8	1	0	0	0	0	0	0	0	330
19:00	2	168	39	0	3	1	0	1	0	0	0	0	0	214
20:00	0	125	25	0	3	1	0	0	0	0	0	0	0	154
21:00	0	69	21	0	0	1	0	0	0	0	0	0	0	91
22:00	0	44	10	0	2	0	0	1	1	0	0	0	0	58
23:00	0	20	2	0	0	0	0	0	0	0	0	0	0	22
Totals	**26**	**3418**	**1119**	**11**	**149**	**26**	**1**	**12**	**10**		**11**			**4783**
% of Totals	1%	71%	23%	0%	3%	1%	0%	0%	0%		0%			100%

AM Volumes	6	1004	388	9	53	12	0	6	7	0	9	0	0	1494
% AM	0%	21%	8%	0%	1%	0%		0%	0%		0%			31%
AM Peak Hour	10:00	11:00	09:00	07:00	05:00	11:00		07:00	07:00		06:00			11:00
Volume	3	233	87	3	10	4		2	2		2			335
PM Volumes	20	2414	731	2	96	14	1	6	3	0	2	0	0	3289
% PM	0%	50%	15%	0%	2%	0%	0%	0%	0%		0%			69%
PM Peak Hour	15:00	17:00	16:00	12:00	16:00	12:00	12:00	13:00	12:00		12:00			16:00
Volume	5	338	112	1	17	3	1	1	1		1			452

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	451		9%	695		15%	895		19%	2742		57%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Wednesday
Date: 9/4/2019

City: Grass Valley
Project #: CA19_7288_001

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	15	1	0	0	0	0	0	0	0	0	0	0	16
01:00	0	15	2	0	0	0	0	0	0	0	0	0	0	17
02:00	0	13	1	0	1	0	0	0	0	0	0	0	0	15
03:00	0	8	3	0	1	0	0	0	0	0	0	0	0	12
04:00	2	16	6	0	2	0	0	0	1	0	0	0	0	27
05:00	0	68	67	0	17	3	0	0	0	0	1	0	0	156
06:00	3	167	94	1	31	1	0	0	1	0	2	0	0	300
07:00	4	413	139	5	40	4	0	4	2	0	2	0	0	613
08:00	5	520	158	2	37	0	0	4	2	0	1	0	0	729
09:00	0	411	160	2	25	2	0	1	1	0	3	0	0	605
10:00	5	388	134	5	27	5	0	3	0	0	3	0	0	570
11:00	5	448	163	2	27	6	0	1	3	0	2	0	0	657
12:00 PM	6	492	166	2	23	3	1	2	1	0	3	0	0	699
13:00	3	431	164	3	33	4	0	1	1	0	2	0	0	642
14:00	2	479	161	4	33	5	0	2	0	0	0	0	0	686
15:00	6	571	182	2	35	3	0	1	2	0	1	0	0	803
16:00	5	543	184	0	37	3	0	1	0	0	1	0	0	774
17:00	10	558	158	0	28	1	0	1	0	0	0	0	0	756
18:00	3	395	114	0	22	1	0	1	1	0	1	0	0	538
19:00	3	242	70	0	9	2	0	1	1	0	0	0	0	328
20:00	2	194	46	0	6	1	0	1	0	0	0	0	0	250
21:00	1	97	29	0	3	1	0	1	0	0	0	0	0	132
22:00	0	73	16	0	3	0	0	1	1	0	0	0	0	94
23:00	0	27	6	0	0	0	0	0	0	0	0	0	0	33
Totals	65	6584	2224	28	440	45	1	26	17		22			9452
% of Totals	1%	70%	24%	0%	5%	0%	0%	0%	0%		0%			100%
AM Volumes	24	2482	928	17	208	21	0	13	10	0	14	0	0	3717
% AM	0%	26%	10%	0%	2%	0%		0%	0%		0%			39%
AM Peak Hour	08:00	08:00	11:00	07:00	07:00	11:00		07:00	11:00		09:00			08:00
Volume	5	520	163	5	40	6		4	3		3			729
PM Volumes	41	4102	1296	11	232	24	1	13	7	0	8	0	0	5735
% PM	0%	43%	14%	0%	2%	0%	0%	0%	0%		0%			61%
PM Peak Hour	17:00	15:00	16:00	14:00	16:00	14:00	12:00	12:00	15:00		12:00			15:00
Volume	10	571	184	4	37	5	1	2	2		3			803

Directional Peak Periods All Classes	AM 7-9 Volume	AM 7-9 %	NOON 12-2 Volume	NOON 12-2 %	PM 4-6 Volume	PM 4-6 %	Off Peak Volumes Volume	Off Peak Volumes %
	1342	14%	1341	14%	1530	16%	5239	55%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Thursday
Date: 9/5/2019

City: Grass Valley
Project #: CA19_7288_001

DAILY TOTALS	NB	SB	EB	WB	Total
	4,872	4,901	0	0	9,773

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	4		4		0	0	8		**12:00**	78		69		0	0	147	
00:15	1		5		0	0	6		**12:15**	64		91		0	0	155	
00:30	1		2		0	0	3		**12:30**	82		90		0	0	172	
00:45	2	8	2	13	0	0	4	21	**12:45**	53	277	78	328	0	0	131	605
01:00	1		2		0	0	3		**13:00**	84		92		0	0	176	
01:15	3		2		0	0	5		**13:15**	81		70		0	0	151	
01:30	1		2		0	0	3		**13:30**	78		90		0	0	168	
01:45	0	5	1	7	0	0	1	12	**13:45**	75	318	85	337	0	0	160	655
02:00	1		4		0	0	5		**14:00**	77		90		0	0	167	
02:15	1		1		0	0	2		**14:15**	87		95		0	0	182	
02:30	0		2		0	0	2		**14:30**	97		102		0	0	199	
02:45	2	4	1	8	0	0	3	12	**14:45**	100	361	116	403	0	0	216	764
03:00	1		2		0	0	3		**15:00**	95		98		0	0	193	
03:15	2		1		0	0	3		**15:15**	107		104		0	0	211	
03:30	2		1		0	0	3		**15:30**	78		120		0	0	198	
03:45	2	7	0	4	0	0	2	11	**15:45**	116	396	131	453	0	0	247	849
04:00	3		2		0	0	5		**16:00**	91		123		0	0	214	
04:15	2		0		0	0	2		**16:15**	103		119		0	0	222	
04:30	10		3		0	0	13		**16:30**	66		157		0	0	223	
04:45	12	27	2	7	0	0	14	34	**16:45**	107	367	150	549	0	0	257	916
05:00	7		6		0	0	13		**17:00**	88		165		0	0	253	
05:15	13		11		0	0	24		**17:15**	93		142		0	0	235	
05:30	20		16		0	0	36		**17:30**	65		119		0	0	184	
05:45	34	74	29	62	0	0	63	136	**17:45**	68	314	102	528	0	0	170	842
06:00	25		10		0	0	35		**18:00**	57		82		0	0	139	
06:15	39		24		0	0	63		**18:15**	52		64		0	0	116	
06:30	47		26		0	0	73		**18:30**	42		61		0	0	103	
06:45	80	191	20	80	0	0	100	271	**18:45**	59	210	64	271	0	0	123	481
07:00	67		39		0	0	106		**19:00**	31		81		0	0	112	
07:15	85		37		0	0	122		**19:15**	26		66		0	0	92	
07:30	150		54		0	0	204		**19:30**	41		36		0	0	77	
07:45	165	467	47	177	0	0	212	644	**19:45**	28	126	41	224	0	0	69	350
08:00	137		71		0	0	208		**20:00**	34		41		0	0	75	
08:15	122		72		0	0	194		**20:15**	36		58		0	0	94	
08:30	120		79		0	0	199		**20:30**	28		50		0	0	78	
08:45	123	502	67	289	0	0	190	791	**20:45**	13	111	29	178	0	0	42	289
09:00	87		54		0	0	141		**21:00**	19		29		0	0	48	
09:15	85		74		0	0	159		**21:15**	25		23		0	0	48	
09:30	83		76		0	0	159		**21:30**	16		24		0	0	40	
09:45	79	334	71	275	0	0	150	609	**21:45**	25	85	22	98	0	0	47	183
10:00	79		54		0	0	133		**22:00**	3		14		0	0	17	
10:15	71		57		0	0	128		**22:15**	10		12		0	0	22	
10:30	85		66		0	0	151		**22:30**	8		15		0	0	23	
10:45	80	315	48	225	0	0	128	540	**22:45**	12	33	12	53	0	0	24	86
11:00	66		75		0	0	141		**23:00**	7		5		0	0	12	
11:15	94		75		0	0	169		**23:15**	5		8		0	0	13	
11:30	79		82		0	0	161		**23:30**	5		7		0	0	12	
11:45	84	323	75	307	0	0	159	630	**23:45**	0	17	5	25	0	0	5	42
TOTALS		2257		1454				**3711**	**TOTALS**		2615		3447				**6062**
SPLIT %		60.8%		39.2%				**38.0%**	**SPLIT %**		43.1%		56.9%				**62.0%**

DAILY TOTALS	NB	SB	EB	WB	Total
	4,872	4,901	0	0	9,773

AM Peak Hour	07:30		11:45					**07:30**	**PM Peak Hour**	14:30		16:30					**16:30**
AM Pk Volume	574		325					**818**	**PM Pk Volume**	399		614					**968**
Pk Hr Factor	0.870		0.893					**0.965**	**Pk Hr Factor**	0.932		0.930					**0.942**
7 - 9 Volume	969		466		0	0		**1435**	**4 - 6 Volume**	681		1077		0	0		**1758**
7 - 9 Peak Hour	07:30		08:00					**07:30**	**4 - 6 Peak Hour**	16:00		16:30					**16:30**
7 - 9 Pk Volume	574		289		0	0		**818**	**4 - 6 Pk Volume**	367		614		0	0		**968**
Pk Hr Factor	0.870		0.915		0.000	0.000		**0.965**	**Pk Hr Factor**	0.857		0.930		0.000	0.000		**0.942**

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Thursday
Date: 9/5/2019

City: Grass Valley
Project #: CA19_7288_001n

North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	8
01:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
02:00	0	3	0	0	1	0	0	0	0	0	0	0	0	4
03:00	0	3	4	0	0	0	0	0	0	0	0	0	0	7
04:00	0	19	7	0	1	0	0	0	0	0	0	0	0	27
05:00	0	46	24	0	4	0	0	0	0	0	0	0	0	74
06:00	1	105	61	2	20	2	0	0	0	0	0	0	0	191
07:00	3	313	110	2	32	1	0	2	0	0	4	0	0	467
08:00	4	361	112	1	23	1	0	0	0	0	0	0	0	502
09:00	0	238	75	1	17	1	0	0	0	0	2	0	0	334
10:00	2	230	64	1	14	1	0	2	0	0	1	0	0	315
11:00	1	215	85	0	19	2	0	1	0	0	0	0	0	323
12:00 PM	2	189	70	3	11	0	0	1	0	0	1	0	0	277
13:00	7	222	66	1	14	3	0	4	0	0	1	0	0	318
14:00	1	232	87	1	35	0	0	4	0	0	1	0	0	361
15:00	1	250	106	2	33	1	0	2	1	0	0	0	0	396
16:00	3	255	77	3	28	1	0	0	0	0	0	0	0	367
17:00	4	218	78	1	13	0	0	0	0	0	0	0	0	314
18:00	3	151	42	0	12	0	0	2	0	0	0	0	0	210
19:00	1	91	25	1	8	0	0	0	0	0	0	0	0	126
20:00	0	80	25	0	6	0	0	0	0	0	0	0	0	111
21:00	1	73	11	0	0	0	0	0	0	0	0	0	0	85
22:00	0	29	4	0	0	0	0	0	0	0	0	0	0	33
23:00	0	10	7	0	0	0	0	0	0	0	0	0	0	17
Totals	**34**	**3346**	**1140**	**19**	**291**	**13**		**18**	**1**		**10**			**4872**
% of Totals	1%	69%	23%	0%	6%	0%		0%	0%		0%			100%

AM Volumes	11	1546	542	7	131	8	0	5	0	0	7	0	0	2257
% AM	0%	32%	11%	0%	3%	0%		0%			0%			46%
AM Peak Hour	08:00	08:00	08:00	06:00	07:00	06:00		07:00			07:00			08:00
Volume	4	361	112	2	32	2		2			4			502
PM Volumes	23	1800	598	12	160	5	0	13	1	0	3	0	0	2615
% PM	0%	37%	12%	0%	3%	0%		0%	0%		0%			54%
PM Peak Hour	13:00	16:00	15:00	12:00	14:00	13:00		13:00	15:00		12:00			15:00
Volume	7	255	106	3	35	3		4	1		1			396

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	969		20%	595		12%	681		14%	2627		54%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Thursday
Date: 9/5/2019

City: Grass Valley
Project #: CA19_7288_001s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	11	2	0	0	0	0	0	0	0	0	0	0	13
01:00	0	6	0	0	1	0	0	0	0	0	0	0	0	7
02:00	0	6	2	0	0	0	0	0	0	0	0	0	0	8
03:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
04:00	1	4	1	0	1	0	0	0	0	0	0	0	0	7
05:00	0	20	33	1	8	0	0	0	0	0	0	0	0	62
06:00	0	44	23	0	6	2	0	0	0	0	5	0	0	80
07:00	0	108	58	2	6	1	0	0	2	0	0	0	0	177
08:00	2	215	63	1	7	0	0	1	0	0	0	0	0	289
09:00	0	200	61	1	9	0	0	1	1	0	2	0	0	275
10:00	5	161	51	0	7	0	0	0	1	0	0	0	0	225
11:00	1	218	78	0	7	1	0	0	0	0	2	0	0	307
12:00 PM	3	236	73	2	12	2	0	0	0	0	0	0	0	328
13:00	3	232	81	1	19	0	0	0	0	0	1	0	0	337
14:00	4	279	96	2	18	1	0	2	1	0	0	0	0	403
15:00	2	328	103	1	17	2	0	0	0	0	0	0	0	453
16:00	5	382	148	3	7	1	0	0	3	0	0	0	0	549
17:00	5	398	116	1	8	0	0	0	0	0	0	0	0	528
18:00	1	220	48	0	2	0	0	0	0	0	0	0	0	271
19:00	2	176	39	0	7	0	0	0	0	0	0	0	0	224
20:00	2	146	29	0	0	0	0	1	0	0	0	0	0	178
21:00	0	83	14	1	0	0	0	0	0	0	0	0	0	98
22:00	0	43	8	0	1	0	0	0	1	0	0	0	0	53
23:00	0	24	1	0	0	0	0	0	0	0	0	0	0	25
Totals	**36**	**3543**	**1129**	**16**	**143**	**10**		**5**	**9**		**10**			**4901**
% of Totals	1%	72%	23%	0%	3%	0%		0%	0%		0%			100%

AM Volumes	9	996	373	5	52	4	0	2	4	0	9	0	0	1454
% AM	0%	20%	8%	0%	1%	0%		0%	0%		0%			30%
AM Peak Hour	10:00	11:00	11:00	07:00	09:00	06:00		08:00	07:00		06:00			11:00
Volume	5	218	78	2	9	2		1	2		5			307
PM Volumes	27	2547	756	11	91	6	0	3	5	0	1	0	0	3447
% PM	1%	52%	15%	0%	2%	0%		0%	0%		0%			70%
PM Peak Hour	16:00	17:00	16:00	16:00	13:00	12:00		14:00	16:00		13:00			16:00
Volume	5	398	148	3	19	2		2	3		1			549

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	466		10%	665		14%	1077		22%	2693		55%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Thursday
Date: 9/5/2019

City: Grass Valley
Project #: CA19_7288_001

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	19	2	0	0	0	0	0	0	0	0	0	0	21
01:00	0	11	0	0	1	0	0	0	0	0	0	0	0	12
02:00	0	9	2	0	1	0	0	0	0	0	0	0	0	12
03:00	0	6	5	0	0	0	0	0	0	0	0	0	0	11
04:00	1	23	8	0	2	0	0	0	0	0	0	0	0	34
05:00	0	66	57	1	12	0	0	0	0	0	0	0	0	136
06:00	1	149	84	2	26	4	0	0	0	0	5	0	0	271
07:00	3	421	168	4	38	2	0	2	2	0	4	0	0	644
08:00	6	576	175	2	30	1	0	1	0	0	0	0	0	791
09:00	0	438	136	2	26	1	0	1	1	0	4	0	0	609
10:00	7	391	115	1	21	1	0	2	1	0	1	0	0	540
11:00	2	433	163	0	26	3	0	1	0	0	2	0	0	630
12:00 PM	5	425	143	5	23	2	0	1	0	0	1	0	0	605
13:00	10	454	147	2	33	3	0	4	0	0	2	0	0	655
14:00	5	511	183	3	53	1	0	6	1	0	1	0	0	764
15:00	3	578	209	3	50	3	0	2	1	0	0	0	0	849
16:00	8	637	225	6	35	2	0	0	3	0	0	0	0	916
17:00	9	616	194	2	21	0	0	0	0	0	0	0	0	842
18:00	4	371	90	0	14	0	0	2	0	0	0	0	0	481
19:00	3	267	64	1	15	0	0	0	0	0	0	0	0	350
20:00	2	226	54	0	6	0	0	1	0	0	0	0	0	289
21:00	1	156	25	1	0	0	0	0	0	0	0	0	0	183
22:00	0	72	12	0	1	0	0	0	1	0	0	0	0	86
23:00	0	34	8	0	0	0	0	0	0	0	0	0	0	42
Totals	**70**	**6889**	**2269**	**35**	**434**	**23**		**23**	**10**		**20**			**9773**
% of Totals	1%	70%	23%	0%	4%	0%		0%	0%		0%			100%

AM Volumes	20	2542	915	12	183	12	0	7	4	0	16	0	0	3711
% AM	0%	26%	9%	0%	2%	0%		0%	0%		0%			38%
AM Peak Hour	10:00	08:00	08:00	07:00	07:00	06:00		07:00	07:00		06:00			08:00
Volume	7	576	175	4	38	4		2	2		5			791
PM Volumes	50	4347	1354	23	251	11	0	16	6	0	4	0	0	6062
% PM	1%	44%	14%	0%	3%	0%		0%	0%		0%			62%
PM Peak Hour	13:00	16:00	16:00	16:00	14:00	13:00		14:00	16:00		13:00			16:00
Volume	10	637	225	6	53	3		6	3		2			916

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	1435	15%	1260	13%	1758	18%	5320	54%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Friday
Date: 9/6/2019

City: Grass Valley
Project #: CA19_7288_001

DAILY TOTALS	NB	SB	EB	WB	Total
	4,802	4,746	0	0	9,548

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		6		0	0	6		**12:00**	87		83		0	0	170	
00:15	3		3		0	0	6		**12:15**	114		102		0	0	216	
00:30	2		3		0	0	5		**12:30**	86		91		0	0	177	
00:45	3	8	3	15	0	0	6	23	**12:45**	103	390	85	361	0	0	188	751
01:00	1		4		0	0	5		**13:00**	79		92		0	0	171	
01:15	3		0		0	0	3		**13:15**	83		88		0	0	171	
01:30	2		1		0	0	3		**13:30**	91		98		0	0	189	
01:45	1	7	0	5	0	0	1	12	**13:45**	79	332	91	369	0	0	170	701
02:00	1		1		0	0	2		**14:00**	86		91		0	0	177	
02:15	2		1		0	0	3		**14:15**	99		88		0	0	187	
02:30	0		1		0	0	1		**14:30**	99		109		0	0	208	
02:45	2	5	2	5	0	0	4	10	**14:45**	82	366	100	388	0	0	182	754
03:00	1		1		0	0	2		**15:00**	70		113		0	0	183	
03:15	1		2		0	0	3		**15:15**	97		121		0	0	218	
03:30	2		2		0	0	4		**15:30**	107		114		0	0	221	
03:45	1	5	1	6	0	0	2	11	**15:45**	82	356	113	461	0	0	195	817
04:00	4		0		0	0	4		**16:00**	91		119		0	0	210	
04:15	2		1		0	0	3		**16:15**	87		116		0	0	203	
04:30	6		2		0	0	8		**16:30**	99		125		0	0	224	
04:45	19	31	1	4	0	0	20	35	**16:45**	81	358	112	472	0	0	193	830
05:00	13		6		0	0	19		**17:00**	81		131		0	0	212	
05:15	10		11		0	0	21		**17:15**	77		119		0	0	196	
05:30	18		14		0	0	32		**17:30**	71		113		0	0	184	
05:45	26	67	28	59	0	0	54	126	**17:45**	74	303	82	445	0	0	156	748
06:00	21		9		0	0	30		**18:00**	56		83		0	0	139	
06:15	34		20		0	0	54		**18:15**	64		82		0	0	146	
06:30	59		22		0	0	81		**18:30**	52		62		0	0	114	
06:45	72	186	24	75	0	0	96	261	**18:45**	47	219	61	288	0	0	108	507
07:00	67		37		0	0	104		**19:00**	42		51		0	0	93	
07:15	92		31		0	0	123		**19:15**	34		42		0	0	76	
07:30	113		51		0	0	164		**19:30**	33		47		0	0	80	
07:45	129	401	52	171	0	0	181	572	**19:45**	33	142	47	187	0	0	80	329
08:00	109		66		0	0	175		**20:00**	32		43		0	0	75	
08:15	92		77		0	0	169		**20:15**	25		58		0	0	83	
08:30	116		59		0	0	175		**20:30**	23		32		0	0	55	
08:45	138	455	78	280	0	0	216	735	**20:45**	17	97	38	171	0	0	55	268
09:00	85		55		0	0	140		**21:00**	12		25		0	0	37	
09:15	82		65		0	0	147		**21:15**	16		19		0	0	35	
09:30	67		59		0	0	126		**21:30**	8		21		0	0	29	
09:45	86	320	72	251	0	0	158	571	**21:45**	16	52	18	83	0	0	34	135
10:00	88		52		0	0	140		**22:00**	17		16		0	0	33	
10:15	65		66		0	0	131		**22:15**	13		18		0	0	31	
10:30	56		54		0	0	110		**22:30**	12		19		0	0	31	
10:45	109	318	68	240	0	0	177	558	**22:45**	12	54	14	67	0	0	26	121
11:00	68		71		0	0	139		**23:00**	8		10		0	0	18	
11:15	70		79		0	0	149		**23:15**	9		14		0	0	23	
11:30	85		73		0	0	158		**23:30**	11		12		0	0	23	
11:45	77	300	73	296	0	0	150	596	**23:45**	2	30	11	47	0	0	13	77
TOTALS		2103		1407				**3510**	**TOTALS**		2699		3339				**6038**
SPLIT %		59.9%		40.1%				**36.8%**	**SPLIT %**		44.7%		55.3%				**63.2%**

DAILY TOTALS	NB	SB	EB	WB	Total
	4,802	4,746	0	0	9,548

AM Peak Hour	08:00	11:45					**08:00**	**PM Peak Hour**	12:00	16:30					**15:15**
AM Pk Volume	455	349					**735**	**PM Pk Volume**	390	487					**844**
Pk Hr Factor	0.824	0.855					**0.851**	**Pk Hr Factor**	0.855	0.929					**0.955**
7 - 9 Volume	856	451	0	0			**1307**	**4 - 6 Volume**	661	917	0	0			**1578**
7 - 9 Peak Hour	08:00	08:00					**08:00**	**4 - 6 Peak Hour**	16:00	16:30					**16:15**
7 - 9 Pk Volume	455	280	0	0			**735**	**4 - 6 Pk Volume**	358	487	0	0			**832**
Pk Hr Factor	0.824	0.897	0.000	0.000			**0.851**	**Pk Hr Factor**	0.904	0.929	0.000	0.000			**0.929**

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Friday
Date: 9/6/2019

City: Grass Valley
Project #: CA19_7288_001n

North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	5	3	0	0	0	0	0	0	0	0	0	0	8
01:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
02:00	0	3	2	0	0	0	0	0	0	0	0	0	0	5
03:00	0	3	2	0	0	0	0	0	0	0	0	0	0	5
04:00	0	21	9	0	1	0	0	0	0	0	0	0	0	31
05:00	0	36	21	0	10	0	0	0	0	0	0	0	0	67
06:00	0	104	58	0	21	1	0	1	1	0	0	0	0	186
07:00	2	254	99	2	39	1	0	4	0	0	0	0	0	401
08:00	1	328	99	2	22	1	0	1	0	0	1	0	0	455
09:00	2	220	72	1	21	2	0	2	0	0	0	0	0	320
10:00	2	221	72	0	20	0	0	2	0	0	1	0	0	318
11:00	3	198	74	1	19	2	0	3	0	0	0	0	0	300
12:00 PM	4	264	86	3	29	0	0	4	0	0	0	0	0	390
13:00	3	231	81	2	12	0	0	1	1	0	1	0	0	332
14:00	0	250	89	2	20	2	1	1	0	0	1	0	0	366
15:00	3	232	89	4	27	1	0	0	0	0	0	0	0	356
16:00	4	233	86	1	33	0	0	1	0	0	0	0	0	358
17:00	3	216	66	1	17	0	0	0	0	0	0	0	0	303
18:00	0	169	37	0	12	0	0	1	0	0	0	0	0	219
19:00	2	115	23	0	2	0	0	0	0	0	0	0	0	142
20:00	0	78	16	0	3	0	0	0	0	0	0	0	0	97
21:00	0	36	16	0	0	0	0	0	0	0	0	0	0	52
22:00	0	41	12	0	1	0	0	0	0	0	0	0	0	54
23:00	1	24	4	0	1	0	0	0	0	0	0	0	0	30
Totals	**30**	**3288**	**1117**	**19**	**310**	**10**	**1**	**21**	**2**		**4**			**4802**
% of Totals	1%	68%	23%	0%	6%	0%	0%	0%	0%		0%			100%

AM Volumes	10	1399	512	6	153	7	0	13	1	0	2	0	0	2103
% AM	0%	29%	11%	0%	3%	0%		0%	0%		0%			44%
AM Peak Hour	11:00	08:00	07:00	07:00	07:00	09:00		07:00	06:00		08:00			08:00
Volume	3	328	99	2	39	2		4	1		1			455
PM Volumes	20	1889	605	13	157	3	1	8	1	0	2	0	0	2699
% PM	0%	39%	13%	0%	3%	0%	0%	0%	0%		0%			56%
PM Peak Hour	12:00	12:00	14:00	15:00	16:00	14:00	14:00	12:00	13:00		13:00			12:00
Volume	4	264	89	4	33	2	1	4	1		1			390

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	856		18%	722		15%	661		14%	2563		53%

Classification Definitions

1	Motorcycles	**4**	Buses	**7**	> =4-Axle Single Units	**10**	>=6-Axle Single Trailers	**13**	>=7-Axle Multi-Trailers
2	Passenger Cars	**5**	2-Axle, 6-Tire Single Units	**8**	<=4-Axle Single Trailers	**11**	<=5-Axle Multi-Trailers		
3	2-Axle, 4-Tire Single Units	**6**	3-Axle Single Units	**9**	5-Axle Single Trailers	**12**	6-Axle Multi-Trailers		

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Friday
Date: 9/6/2019

City: Grass Valley
Project #: CA19_7288_001s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	12	2	0	1	0	0	0	0	0	0	0	0	15
01:00	0	3	2	0	0	0	0	0	0	0	0	0	0	5
02:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
03:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
04:00	1	0	3	0	0	0	0	0	0	0	0	0	0	4
05:00	1	19	32	0	5	1	0	0	1	0	0	0	0	59
06:00	0	43	26	0	3	2	0	0	0	0	1	0	0	75
07:00	0	119	42	3	6	0	0	0	1	0	0	0	0	171
08:00	0	203	61	1	13	2	0	0	0	0	0	0	0	280
09:00	3	169	67	1	10	0	0	1	0	0	0	0	0	251
10:00	1	163	65	2	5	0	0	2	0	0	2	0	0	240
11:00	1	196	86	1	11	1	0	0	0	0	0	0	0	296
12:00 PM	5	255	89	0	8	1	0	2	1	0	0	0	0	361
13:00	7	274	75	0	10	1	0	1	1	0	0	0	0	369
14:00	1	272	101	2	10	0	0	0	1	0	1	0	0	388
15:00	2	330	106	2	19	1	0	1	0	0	0	0	0	461
16:00	2	334	116	2	13	2	0	1	2	0	0	0	0	472
17:00	0	339	90	0	15	0	0	0	1	0	0	0	0	445
18:00	1	232	51	0	4	0	0	0	0	0	0	0	0	288
19:00	2	147	36	0	2	0	0	0	0	0	0	0	0	187
20:00	1	141	27	0	2	0	0	0	0	0	0	0	0	171
21:00	0	67	15	0	1	0	0	0	0	0	0	0	0	83
22:00	0	53	13	0	0	0	0	0	1	0	0	0	0	67
23:00	0	38	8	0	1	0	0	0	0	0	0	0	0	47
Totals	**28**	**3418**	**1115**	**14**	**139**	**11**		**8**	**9**		**4**			**4746**
% of Totals	1%	72%	23%	0%	3%	0%		0%	0%		0%			100%

AM Volumes	7	936	388	8	54	6	0	3	2	0	3	0	0	1407
% AM	0%	20%	8%	0%	1%	0%		0%	0%		0%			30%
AM Peak Hour	09:00	08:00	11:00	07:00	08:00	06:00		10:00	05:00		10:00			11:00
Volume	3	203	86	3	13	2		2	1		2			296
PM Volumes	21	2482	727	6	85	5	0	5	7	0	1	0	0	3339
% PM	0%	52%	15%	0%	2%	0%		0%	0%		0%			70%
PM Peak Hour	13:00	17:00	16:00	14:00	15:00	16:00		12:00	16:00		14:00			16:00
Volume	7	339	116	2	19	2		2	2		1			472

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	451	10%	730	15%	917	19%	2648	56%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Friday
Date: 9/6/2019

City: Grass Valley
Project #: CA19_7288_001

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	17	5	0	1	0	0	0	0	0	0	0	0	**23**
01:00	0	9	3	0	0	0	0	0	0	0	0	0	0	**12**
02:00	0	7	3	0	0	0	0	0	0	0	0	0	0	**10**
03:00	0	8	3	0	0	0	0	0	0	0	0	0	0	**11**
04:00	1	21	12	0	1	0	0	0	0	0	0	0	0	**35**
05:00	1	55	53	0	15	1	0	0	1	0	0	0	0	**126**
06:00	0	147	84	0	24	3	0	1	1	0	1	0	0	**261**
07:00	2	373	141	5	45	1	0	4	1	0	0	0	0	**572**
08:00	1	531	160	3	35	3	0	1	0	0	1	0	0	**735**
09:00	5	389	139	2	31	2	0	3	0	0	0	0	0	**571**
10:00	3	384	137	2	25	0	0	4	0	0	3	0	0	**558**
11:00	4	394	160	2	30	3	0	3	0	0	0	0	0	**596**
12:00 PM	9	519	175	3	37	1	0	6	1	0	0	0	0	**751**
13:00	10	505	156	2	22	1	0	2	2	0	1	0	0	**701**
14:00	1	522	190	4	30	2	1	1	1	0	2	0	0	**754**
15:00	5	562	195	6	46	2	0	1	0	0	0	0	0	**817**
16:00	6	567	202	3	46	2	0	2	2	0	0	0	0	**830**
17:00	3	555	156	1	32	0	0	0	1	0	0	0	0	**748**
18:00	1	401	88	0	16	0	0	1	0	0	0	0	0	**507**
19:00	4	262	59	0	4	0	0	0	0	0	0	0	0	**329**
20:00	1	219	43	0	5	0	0	0	0	0	0	0	0	**268**
21:00	0	103	31	0	1	0	0	0	0	0	0	0	0	**135**
22:00	0	94	25	0	1	0	0	0	1	0	0	0	0	**121**
23:00	1	62	12	0	2	0	0	0	0	0	0	0	0	**77**
Totals	**58**	**6706**	**2232**	**33**	**449**	**21**	**1**	**29**	**11**		**8**			**9548**
% of Totals	1%	70%	23%	0%	5%	0%	0%	0%	0%		0%			100%

AM Volumes	17	2335	900	14	207	13	0	16	3	0	5	0	0	3510
% AM	0%	24%	9%	0%	2%	0%		0%	0%		0%			37%
AM Peak Hour	09:00	08:00	08:00	07:00	07:00	06:00		07:00	05:00		10:00			08:00
Volume	5	531	160	5	45	3		4	1		3			735
PM Volumes	41	4371	1332	19	242	8	1	13	8	0	3	0	0	6038
% PM	0%	46%	14%	0%	3%	0%	0%	0%	0%		0%			63%
PM Peak Hour	13:00	16:00	16:00	15:00	15:00	14:00	14:00	12:00	13:00		14:00			16:00
Volume	10	567	202	6	46	2	1	6	2		2			830

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	1307		14%	1452		15%	1578		17%	5211		55%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Saturday
Date: 9/7/2019

City: Grass Valley
Project #: CA19_7288_001

DAILY TOTALS	NB	SB	EB	WB	Total
	3,266	3,243	0	0	6,509

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	4		6		0	0	10		**12:00**	59		66		0	0	125	
00:15	4		2		0	0	6		**12:15**	74		69		0	0	143	
00:30	1		9		0	0	10		**12:30**	86		64		0	0	150	
00:45	3	12	4	21	0	0	7	33	**12:45**	65	284	70	269	0	0	135	553
01:00	2		6		0	0	8		**13:00**	62		60		0	0	122	
01:15	2		5		0	0	7		**13:15**	69		75		0	0	144	
01:30	2		0		0	0	2		**13:30**	71		79		0	0	150	
01:45	0	6	3	14	0	0	3	20	**13:45**	57	259	67	281	0	0	124	540
02:00	2		6		0	0	8		**14:00**	57		68		0	0	125	
02:15	3		2		0	0	5		**14:15**	72		72		0	0	144	
02:30	0		3		0	0	3		**14:30**	77		69		0	0	146	
02:45	0	5	2	13	0	0	2	18	**14:45**	67	273	60	269	0	0	127	542
03:00	3		2		0	0	5		**15:00**	53		61		0	0	114	
03:15	2		1		0	0	3		**15:15**	73		66		0	0	139	
03:30	2		1		0	0	3		**15:30**	50		71		0	0	121	
03:45	2	9	0	4	0	0	2	13	**15:45**	64	240	50	248	0	0	114	488
04:00	0		2		0	0	2		**16:00**	46		61		0	0	107	
04:15	3		0		0	0	3		**16:15**	58		63		0	0	121	
04:30	2		2		0	0	4		**16:30**	61		74		0	0	135	
04:45	6	11	1	5	0	0	7	16	**16:45**	43	208	67	265	0	0	110	473
05:00	4		2		0	0	6		**17:00**	45		59		0	0	104	
05:15	7		6		0	0	13		**17:15**	51		65		0	0	116	
05:30	4		15		0	0	19		**17:30**	42		56		0	0	98	
05:45	8	23	26	49	0	0	34	72	**17:45**	54	192	46	226	0	0	100	418
06:00	14		7		0	0	21		**18:00**	40		50		0	0	90	
06:15	12		8		0	0	20		**18:15**	41		44		0	0	85	
06:30	23		10		0	0	33		**18:30**	50		49		0	0	99	
06:45	40	89	10	35	0	0	50	124	**18:45**	36	167	32	175	0	0	68	342
07:00	48		11		0	0	59		**19:00**	29		46		0	0	75	
07:15	38		16		0	0	54		**19:15**	31		35		0	0	66	
07:30	34		28		0	0	62		**19:30**	30		36		0	0	66	
07:45	46	166	25	80	0	0	71	246	**19:45**	16	106	42	159	0	0	58	265
08:00	36		25		0	0	61		**20:00**	30		25		0	0	55	
08:15	49		26		0	0	75		**20:15**	25		33		0	0	58	
08:30	57		28		0	0	85		**20:30**	27		36		0	0	63	
08:45	56	198	33	112	0	0	89	310	**20:45**	21	103	26	120	0	0	47	223
09:00	58		34		0	0	92		**21:00**	19		26		0	0	45	
09:15	52		54		0	0	106		**21:15**	17		36		0	0	53	
09:30	47		52		0	0	99		**21:30**	10		25		0	0	35	
09:45	75	232	61	201	0	0	136	433	**21:45**	11	57	13	100	0	0	24	157
10:00	70		41		0	0	111		**22:00**	8		18		0	0	26	
10:15	57		66		0	0	123		**22:15**	10		15		0	0	25	
10:30	80		64		0	0	144		**22:30**	11		13		0	0	24	
10:45	79	286	66	237	0	0	145	523	**22:45**	15	44	6	52	0	0	21	96
11:00	69		63		0	0	132		**23:00**	9		17		0	0	26	
11:15	80		62		0	0	142		**23:15**	2		12		0	0	14	
11:30	65		59		0	0	124		**23:30**	4		8		0	0	12	
11:45	61	275	76	260	0	0	137	535	**23:45**	6	21	11	48	0	0	17	69
TOTALS		1312		1031				**2343**	**TOTALS**		1954		2212				**4166**
SPLIT %		56.0%		44.0%				**36.0%**	**SPLIT %**		46.9%		53.1%				**64.0%**

DAILY TOTALS	NB	SB	EB	WB	Total
	3,266	3,243	0	0	6,509

AM Peak Hour	10:30		11:45					**10:30**	**PM Peak Hour**	12:15		13:15					**12:00**
AM Pk Volume	308		275					**563**	**PM Pk Volume**	287		289					**553**
Pk Hr Factor	0.963		0.905					**0.971**	**Pk Hr Factor**	0.834		0.915					**0.922**
7 - 9 Volume	364		192		0	0		**556**	**4 - 6 Volume**	400		491		0	0		**891**
7 - 9 Peak Hour	08:00		08:00					**08:00**	**4 - 6 Peak Hour**	16:00		16:00					**16:00**
7 - 9 Pk Volume	198		112		0	0		**310**	**4 - 6 Pk Volume**	208		265		0	0		**473**
Pk Hr Factor	0.868		0.848		0.000	0.000		**0.871**	**Pk Hr Factor**	0.852		0.895		0.000	0.000		**0.876**

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Saturday
Date: 9/7/2019

City: Grass Valley
Project #: CA19_7288_001n

North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	7	4	0	1	0	0	0	0	0	0	0	0	12
01:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
02:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
03:00	0	5	4	0	0	0	0	0	0	0	0	0	0	9
04:00	1	7	3	0	0	0	0	0	0	0	0	0	0	11
05:00	0	15	6	0	2	0	0	0	0	0	0	0	0	23
06:00	0	56	24	0	9	0	0	0	0	0	0	0	0	89
07:00	0	93	46	1	23	3	0	0	0	0	0	0	0	166
08:00	1	132	48	0	16	0	0	0	1	0	0	0	0	198
09:00	2	155	59	0	14	2	0	0	0	0	0	0	0	232
10:00	0	208	64	0	14	0	0	0	0	0	0	0	0	286
11:00	5	185	60	1	23	0	0	1	0	0	0	0	0	275
12:00 PM	7	207	57	0	13	0	0	0	0	0	0	0	0	284
13:00	5	183	59	1	9	1	0	1	0	0	0	0	0	259
14:00	2	192	63	0	16	0	0	0	0	0	0	0	0	273
15:00	2	176	47	0	14	0	0	1	0	0	0	0	0	240
16:00	1	148	48	0	10	0	0	1	0	0	0	0	0	208
17:00	1	139	39	1	10	0	0	2	0	0	0	0	0	192
18:00	2	122	35	0	8	0	0	0	0	0	0	0	0	167
19:00	0	81	22	0	3	0	0	0	0	0	0	0	0	106
20:00	1	83	15	0	3	0	0	1	0	0	0	0	0	103
21:00	1	45	9	0	2	0	0	0	0	0	0	0	0	57
22:00	0	33	10	0	1	0	0	0	0	0	0	0	0	44
23:00	0	16	5	0	0	0	0	0	0	0	0	0	0	21
Totals	**31**	**2298**	**728**	**4**	**191**	**6**		**7**	**1**					**3266**
% of Totals	1%	70%	22%	0%	6%	0%		0%	0%					100%

AM Volumes	9	873	319	2	102	5	0	1	1	0	0	0	0	1312
% AM	0%	27%	10%	0%	3%	0%		0%	0%					40%
AM Peak Hour	11:00	10:00	10:00	07:00	07:00	07:00		11:00	08:00					10:00
Volume	5	208	64	1	23	3		1	1					286
PM Volumes	22	1425	409	2	89	1	0	6	0	0	0	0	0	1954
% PM	1%	44%	13%	0%	3%	0%		0%						60%
PM Peak Hour	12:00	12:00	14:00	13:00	14:00	13:00		17:00						12:00
Volume	7	207	63	1	16	1		2						284

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	364		11%	543		17%	400		12%	1959		60%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Saturday
Date: 9/7/2019

City: Grass Valley
Project #: CA19_7288_001s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	16	5	0	0	0	0	0	0	0	0	0	0	21
01:00	0	13	1	0	0	0	0	0	0	0	0	0	0	14
02:00	0	12	1	0	0	0	0	0	0	0	0	0	0	13
03:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
04:00	1	1	2	0	1	0	0	0	0	0	0	0	0	5
05:00	0	13	32	0	4	0	0	0	0	0	0	0	0	49
06:00	0	18	13	1	2	1	0	0	0	0	0	0	0	35
07:00	1	47	22	2	6	1	0	1	0	0	0	0	0	80
08:00	0	76	28	0	7	1	0	0	0	0	0	0	0	112
09:00	0	141	54	1	4	1	0	0	0	0	0	0	0	201
10:00	4	172	54	0	7	0	0	0	0	0	0	0	0	237
11:00	1	188	59	0	9	0	1	2	0	0	0	0	0	260
12:00 PM	4	198	59	0	7	1	0	0	0	0	0	0	0	269
13:00	5	207	65	0	4	0	0	0	0	0	0	0	0	281
14:00	1	198	57	1	12	0	0	0	0	0	0	0	0	269
15:00	3	192	47	0	3	2	0	1	0	0	0	0	0	248
16:00	3	201	59	0	2	0	0	0	0	0	0	0	0	265
17:00	1	179	43	0	3	0	0	0	0	0	0	0	0	226
18:00	0	139	30	0	6	0	0	0	0	0	0	0	0	175
19:00	2	128	29	0	0	0	0	0	0	0	0	0	0	159
20:00	0	100	20	0	0	0	0	0	0	0	0	0	0	120
21:00	0	90	10	0	0	0	0	0	0	0	0	0	0	100
22:00	0	46	6	0	0	0	0	0	0	0	0	0	0	52
23:00	0	36	12	0	0	0	0	0	0	0	0	0	0	48
Totals	**26**	**2415**	**708**	**5**	**77**	**7**	**1**	**4**						**3243**
% of Totals	1%	74%	22%	0%	2%	0%	0%	0%						100%

AM Volumes	7	701	271	4	40	4	1	3	0	0	0	0	0	1031
% AM	0%	22%	8%	0%	1%	0%	0%	0%						32%
AM Peak Hour	10:00	11:00	11:00	07:00	11:00	06:00	11:00	11:00						11:00
Volume	4	188	59	2	9	1	1	2						260
PM Volumes	19	1714	437	1	37	3	0	1	0	0	0	0	0	2212
% PM	1%	53%	13%	0%	1%	0%		0%						68%
PM Peak Hour	13:00	13:00	13:00	14:00	14:00	15:00		15:00						13:00
Volume	5	207	65	1	12	2		1						281

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	192		6%	550		17%	491		15%	2010		62%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Saturday
Date: 9/7/2019

City: Grass Valley
Project #: CA19_7288_001

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	23	9	0	1	0	0	0	0	0	0	0	0	**33**
01:00	0	18	2	0	0	0	0	0	0	0	0	0	0	**20**
02:00	0	17	1	0	0	0	0	0	0	0	0	0	0	**18**
03:00	0	9	4	0	0	0	0	0	0	0	0	0	0	**13**
04:00	2	8	5	0	1	0	0	0	0	0	0	0	0	**16**
05:00	0	28	38	0	6	0	0	0	0	0	0	0	0	**72**
06:00	0	74	37	1	11	1	0	0	0	0	0	0	0	**124**
07:00	1	140	68	3	29	4	0	1	0	0	0	0	0	**246**
08:00	1	208	76	0	23	1	0	0	1	0	0	0	0	**310**
09:00	2	296	113	1	18	3	0	0	0	0	0	0	0	**433**
10:00	4	380	118	0	21	0	0	0	0	0	0	0	0	**523**
11:00	6	373	119	1	32	0	1	3	0	0	0	0	0	**535**
12:00 PM	11	405	116	0	20	1	0	0	0	0	0	0	0	**553**
13:00	10	390	124	1	13	1	0	1	0	0	0	0	0	**540**
14:00	3	390	120	1	28	0	0	0	0	0	0	0	0	**542**
15:00	5	368	94	0	17	2	0	2	0	0	0	0	0	**488**
16:00	4	349	107	0	12	0	0	1	0	0	0	0	0	**473**
17:00	2	318	82	1	13	0	0	2	0	0	0	0	0	**418**
18:00	2	261	65	0	14	0	0	0	0	0	0	0	0	**342**
19:00	2	209	51	0	3	0	0	0	0	0	0	0	0	**265**
20:00	1	183	35	0	3	0	0	1	0	0	0	0	0	**223**
21:00	1	135	19	0	2	0	0	0	0	0	0	0	0	**157**
22:00	0	79	16	0	1	0	0	0	0	0	0	0	0	**96**
23:00	0	52	17	0	0	0	0	0	0	0	0	0	0	**69**
Totals	**57**	**4713**	**1436**	**9**	**268**	**13**	**1**	**11**	**1**					**6509**
% of Totals	1%	72%	22%	0%	4%	0%	0%	0%	0%					100%

AM Volumes	16	1574	590	6	142	9	1	4	1	0	0	0	0	2343
% AM	0%	24%	9%	0%	2%	0%	0%	0%	0%					36%
AM Peak Hour	11:00	10:00	11:00	07:00	11:00	07:00	11:00	11:00	08:00					11:00
Volume	6	380	119	3	32	4	1	3	1					535
PM Volumes	41	3139	846	3	126	4	0	7	0	0	0	0	0	4166
% PM	1%	48%	13%	0%	2%	0%		0%						64%
PM Peak Hour	12:00	12:00	13:00	13:00	14:00	15:00		15:00						12:00
Volume	11	405	124	1	28	2		2						553

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	556		9%	1093		17%	891		14%	3969		61%

Classification Definitions

1	Motorcycles	**4**	Buses	**7**	> =4-Axle Single Units	**10**	>=6-Axle Single Trailers	**13**	>=7-Axle Multi-Trailers
2	Passenger Cars	**5**	2-Axle, 6-Tire Single Units	**8**	<=4-Axle Single Trailers	**11**	<=5-Axle Multi-Trailers		
3	2-Axle, 4-Tire Single Units	**6**	3-Axle Single Units	**9**	5-Axle Single Trailers	**12**	6-Axle Multi-Trailers		

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Sunday
Date: 9/8/2019

City: Grass Valley
Project #: CA19_7288_001

DAILY TOTALS	NB	SB	EB	WB	Total
	2,679	2,732	0	0	5,411

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	2		4		0	0	6		**12:00**	78		48		0	0	126	
00:15	5		9		0	0	14		**12:15**	76		69		0	0	145	
00:30	6		5		0	0	11		**12:30**	61		67		0	0	128	
00:45	1	14	3	21	0	0	4	35	**12:45**	61	276	75	259	0	0	136	535
01:00	2		2		0	0	4		**13:00**	62		68		0	0	130	
01:15	0		3		0	0	3		**13:15**	56		53		0	0	109	
01:30	3		3		0	0	6		**13:30**	60		59		0	0	119	
01:45	3	8	2	10	0	0	5	18	**13:45**	57	235	73	253	0	0	130	488
02:00	3		1		0	0	4		**14:00**	42		57		0	0	99	
02:15	1		3		0	0	4		**14:15**	36		50		0	0	86	
02:30	0		4		0	0	4		**14:30**	51		55		0	0	106	
02:45	0	4	1	9	0	0	1	13	**14:45**	52	181	71	233	0	0	123	414
03:00	2		1		0	0	3		**15:00**	55		59		0	0	114	
03:15	4		2		0	0	6		**15:15**	73		57		0	0	130	
03:30	3		3		0	0	6		**15:30**	58		66		0	0	124	
03:45	0	9	1	7	0	0	1	16	**15:45**	53	239	57	239	0	0	110	478
04:00	1		3		0	0	4		**16:00**	60		58		0	0	118	
04:15	3		0		0	0	3		**16:15**	41		64		0	0	105	
04:30	0		2		0	0	2		**16:30**	44		59		0	0	103	
04:45	5	9	3	8	0	0	8	17	**16:45**	50	195	65	246	0	0	115	441
05:00	2		0		0	0	2		**17:00**	62		48		0	0	110	
05:15	2		0		0	0	2		**17:15**	45		58		0	0	103	
05:30	7		3		0	0	10		**17:30**	46		40		0	0	86	
05:45	3	14	1	4	0	0	4	18	**17:45**	35	188	49	195	0	0	84	383
06:00	5		3		0	0	8		**18:00**	49		35		0	0	84	
06:15	12		3		0	0	15		**18:15**	32		53		0	0	85	
06:30	6		9		0	0	15		**18:30**	40		36		0	0	76	
06:45	13	36	9	24	0	0	22	60	**18:45**	26	147	31	155	0	0	57	302
07:00	14		9		0	0	23		**19:00**	34		34		0	0	68	
07:15	24		12		0	0	36		**19:15**	31		49		0	0	80	
07:30	15		20		0	0	35		**19:30**	31		33		0	0	64	
07:45	27	80	10	51	0	0	37	131	**19:45**	28	124	31	147	0	0	59	271
08:00	31		21		0	0	52		**20:00**	25		36		0	0	61	
08:15	38		24		0	0	62		**20:15**	19		25		0	0	44	
08:30	35		20		0	0	55		**20:30**	9		26		0	0	35	
08:45	50	154	25	90	0	0	75	244	**20:45**	11	64	15	102	0	0	26	166
09:00	44		31		0	0	75		**21:00**	5		25		0	0	30	
09:15	48		22		0	0	70		**21:15**	17		16		0	0	33	
09:30	32		42		0	0	74		**21:30**	9		18		0	0	27	
09:45	36	160	46	141	0	0	82	301	**21:45**	7	38	12	71	0	0	19	109
10:00	56		53		0	0	109		**22:00**	5		9		0	0	14	
10:15	66		42		0	0	108		**22:15**	8		6		0	0	14	
10:30	56		48		0	0	104		**22:30**	6		13		0	0	19	
10:45	59	237	32	175	0	0	91	412	**22:45**	4	23	9	37	0	0	13	60
11:00	68		61		0	0	129		**23:00**	4		6		0	0	10	
11:15	50		57		0	0	107		**23:15**	5		3		0	0	8	
11:30	54		61		0	0	115		**23:30**	1		5		0	0	6	
11:45	59	231	60	239	0	0	119	470	**23:45**	3	13	2	16	0	0	5	29
TOTALS		956		779				**1735**	**TOTALS**		1723		1953				**3676**
SPLIT %		55.1%		44.9%				**32.1%**	**SPLIT %**		46.9%		53.1%				**67.9%**

DAILY TOTALS	NB	SB	EB	WB	Total
	2,679	2,732	0	0	5,411

AM Peak Hour	11:45	11:45				**11:45**	**PM Peak Hour**	12:00	12:15				**12:15**
AM Pk Volume	274	244				**518**	**PM Pk Volume**	276	279				**539**
Pk Hr Factor	0.878	0.884				**0.893**	**Pk Hr Factor**	0.885	0.930				**0.929**
7 - 9 Volume	234	141	0	0		**375**	**4 - 6 Volume**	383	441	0	0		**824**
7 - 9 Peak Hour	08:00	08:00				**08:00**	**4 - 6 Peak Hour**	16:45	16:00				**16:00**
7 - 9 Pk Volume	154	90	0	0		**244**	**4 - 6 Pk Volume**	203	246	0	0		**441**
Pk Hr Factor	0.770	0.900	0.000	0.000		**0.813**	**Pk Hr Factor**	0.819	0.946	0.000	0.000		**0.934**

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Sunday
Date: 9/8/2019

City: Grass Valley
Project #: CA19_7288_001n

North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	10	4	0	0	0	0	0	0	0	0	0	0	14
01:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
02:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
03:00	1	7	1	0	0	0	0	0	0	0	0	0	0	9
04:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
05:00	0	9	4	0	1	0	0	0	0	0	0	0	0	14
06:00	0	27	8	0	1	0	0	0	0	0	0	0	0	36
07:00	0	57	18	0	5	0	0	0	0	0	0	0	0	80
08:00	1	109	38	0	6	0	0	0	0	0	0	0	0	154
09:00	1	113	39	0	7	0	0	0	0	0	0	0	0	160
10:00	2	179	43	0	13	0	0	0	0	0	0	0	0	237
11:00	3	169	42	1	15	0	1	0	0	0	0	0	0	231
12:00 PM	5	210	48	2	9	0	0	2	0	0	0	0	0	276
13:00	3	182	38	2	9	0	0	1	0	0	0	0	0	235
14:00	0	132	38	0	11	0	0	0	0	0	0	0	0	181
15:00	4	185	35	1	14	0	0	0	0	0	0	0	0	239
16:00	0	138	47	0	10	0	0	0	0	0	0	0	0	195
17:00	2	144	34	0	7	0	0	1	0	0	0	0	0	188
18:00	1	99	36	0	10	0	0	1	0	0	0	0	0	147
19:00	0	94	26	2	2	0	0	0	0	0	0	0	0	124
20:00	0	48	13	0	3	0	0	0	0	0	0	0	0	64
21:00	0	26	9	0	3	0	0	0	0	0	0	0	0	38
22:00	0	20	3	0	0	0	0	0	0	0	0	0	0	23
23:00	0	11	1	0	1	0	0	0	0	0	0	0	0	13
Totals	**23**	**1989**	**526**	**8**	**127**		**1**	**5**						**2679**
% of Totals	1%	74%	20%	0%	5%		0%	0%						100%

AM Volumes	8	700	198	1	48	0	1	0	0	0	0	0	0	956
% AM	0%	26%	7%	0%	2%		0%							36%
AM Peak Hour	11:00	10:00	10:00	11:00	11:00		11:00							10:00
Volume	3	179	43	1	15		1							237
PM Volumes	15	1289	328	7	79	0	0	5	0	0	0	0	0	1723
% PM	1%	48%	12%	0%	3%			0%						64%
PM Peak Hour	12:00	12:00	12:00	12:00	15:00			12:00						12:00
Volume	5	210	48	2	14			2						276

Directional Peak Periods	**AM 7-9**		**NOON 12-2**		**PM 4-6**		**Off Peak Volumes**	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	234	9%	511	19%	383	14%	1551	58%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Sunday
Date: 9/8/2019

City: Grass Valley
Project #: CA19_7288_001s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	17	4	0	0	0	0	0	0	0	0	0	0	21
01:00	0	10	0	0	0	0	0	0	0	0	0	0	0	10
02:00	0	7	2	0	0	0	0	0	0	0	0	0	0	9
03:00	0	5	2	0	0	0	0	0	0	0	0	0	0	7
04:00	0	6	2	0	0	0	0	0	0	0	0	0	0	8
05:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
06:00	0	12	12	0	0	0	0	0	0	0	0	0	0	24
07:00	0	38	11	0	2	0	0	0	0	0	0	0	0	51
08:00	0	72	17	0	1	0	0	0	0	0	0	0	0	90
09:00	0	114	24	1	1	0	0	1	0	0	0	0	0	141
10:00	2	119	49	2	1	0	0	2	0	0	0	0	0	175
11:00	6	182	46	0	3	0	0	1	1	0	0	0	0	239
12:00 PM	2	200	53	0	4	0	0	0	0	0	0	0	0	259
13:00	1	202	46	1	3	0	0	0	0	0	0	0	0	253
14:00	0	199	33	0	1	0	0	0	0	0	0	0	0	233
15:00	3	187	43	1	4	0	0	1	0	0	0	0	0	239
16:00	1	183	57	2	3	0	0	0	0	0	0	0	0	246
17:00	3	148	39	0	3	0	1	1	0	0	0	0	0	195
18:00	0	119	33	0	3	0	0	0	0	0	0	0	0	155
19:00	0	117	25	0	5	0	0	0	0	0	0	0	0	147
20:00	0	81	20	0	1	0	0	0	0	0	0	0	0	102
21:00	0	59	12	0	0	0	0	0	0	0	0	0	0	71
22:00	0	34	3	0	0	0	0	0	0	0	0	0	0	37
23:00	0	13	2	0	1	0	0	0	0	0	0	0	0	16
Totals	**18**	**2128**	**535**	**7**	**36**		**1**	**6**	**1**					**2732**
% of Totals	1%	78%	20%	0%	1%		0%	0%	0%					100%

AM Volumes	8	586	169	3	8	0	0	4	1	0	0	0	0	779
% AM	0%	21%	6%	0%	0%			0%	0%					29%
AM Peak Hour	11:00	11:00	10:00	10:00	11:00			10:00	11:00					11:00
Volume	6	182	49	2	3			2	1					239
PM Volumes	10	1542	366	4	28	0	1	2	0	0	0	0	0	1953
% PM	0%	56%	13%	0%	1%		0%	0%						71%
PM Peak Hour	15:00	13:00	16:00	16:00	19:00		17:00	15:00						12:00
Volume	3	202	57	2	5		1	1						259

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	141	5%	512	19%	441	16%	1638	60%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Sunday
Date: 9/8/2019

City: Grass Valley
Project #: CA19_7288_001

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	27	8	0	0	0	0	0	0	0	0	0	0	35
01:00	0	17	1	0	0	0	0	0	0	0	0	0	0	18
02:00	0	11	2	0	0	0	0	0	0	0	0	0	0	13
03:00	1	12	3	0	0	0	0	0	0	0	0	0	0	16
04:00	0	15	2	0	0	0	0	0	0	0	0	0	0	17
05:00	0	13	4	0	1	0	0	0	0	0	0	0	0	18
06:00	0	39	20	0	1	0	0	0	0	0	0	0	0	60
07:00	0	95	29	0	7	0	0	0	0	0	0	0	0	131
08:00	1	181	55	0	7	0	0	0	0	0	0	0	0	244
09:00	1	227	63	1	8	0	0	1	0	0	0	0	0	301
10:00	4	298	92	2	14	0	0	2	0	0	0	0	0	412
11:00	9	351	88	1	18	0	1	1	1	0	0	0	0	470
12:00 PM	7	410	101	2	13	0	0	2	0	0	0	0	0	535
13:00	4	384	84	3	12	0	0	1	0	0	0	0	0	488
14:00	0	331	71	0	12	0	0	0	0	0	0	0	0	414
15:00	7	372	78	2	18	0	0	1	0	0	0	0	0	478
16:00	1	321	104	2	13	0	0	0	0	0	0	0	0	441
17:00	5	292	73	0	10	0	1	2	0	0	0	0	0	383
18:00	1	218	69	0	13	0	0	1	0	0	0	0	0	302
19:00	0	211	51	2	7	0	0	0	0	0	0	0	0	271
20:00	0	129	33	0	4	0	0	0	0	0	0	0	0	166
21:00	0	85	21	0	3	0	0	0	0	0	0	0	0	109
22:00	0	54	6	0	0	0	0	0	0	0	0	0	0	60
23:00	0	24	3	0	2	0	0	0	0	0	0	0	0	29
Totals	**41**	**4117**	**1061**	**15**	**163**		**2**	**11**	**1**					**5411**
% of Totals	1%	76%	20%	0%	3%		0%	0%	0%					100%

AM Volumes	16	1286	367	4	56	0	1	4	1	0	0	0	0	1735
% AM	0%	24%	7%	0%	1%		0%	0%	0%					32%
AM Peak Hour	11:00	11:00	10:00	10:00	11:00		11:00	10:00	11:00					11:00
Volume	9	351	92	2	18		1	2	1					470
PM Volumes	25	2831	694	11	107	0	1	7	0	0	0	0	0	3676
% PM	0%	52%	13%	0%	2%		0%	0%						68%
PM Peak Hour	12:00	12:00	16:00	13:00	15:00		17:00	12:00						12:00
Volume	7	410	104	3	18		1	2						535

Directional Peak Periods	**AM 7-9**		**NOON 12-2**		**PM 4-6**		**Off Peak Volumes**	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	375	7%	1023	19%	824	15%	3189	59%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Monday
Date: 9/9/2019

City: Grass Valley
Project #: CA19_7288_001

DAILY TOTALS	NB	SB	EB	WB	Total
	4,539	4,520	0	0	9,059

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	1		1		0	0	2		**12:00**	81		67		0	0	148	
00:15	4		3		0	0	7		**12:15**	90		97		0	0	187	
00:30	3		1		0	0	4		**12:30**	71		78		0	0	149	
00:45	3	11	2	7	0	0	5	18	**12:45**	81	323	80	322	0	0	161	645
01:00	2		2		0	0	4		**13:00**	95		79		0	0	174	
01:15	0		4		0	0	4		**13:15**	70		62		0	0	132	
01:30	0		2		0	0	2		**13:30**	104		89		0	0	193	
01:45	1	3	2	10	0	0	3	13	**13:45**	78	347	93	323	0	0	171	670
02:00	1		1		0	0	2		**14:00**	77		88		0	0	165	
02:15	1		0		0	0	1		**14:15**	61		72		0	0	133	
02:30	1		2		0	0	3		**14:30**	85		111		0	0	196	
02:45	0	3	2	5	0	0	2	8	**14:45**	71	294	96	367	0	0	167	661
03:00	0		2		0	0	2		**15:00**	77		109		0	0	186	
03:15	2		0		0	0	2		**15:15**	115		96		0	0	211	
03:30	5		0		0	0	5		**15:30**	93		120		0	0	213	
03:45	2	9	1	3	0	0	3	12	**15:45**	99	384	115	440	0	0	214	824
04:00	3		0		0	0	3		**16:00**	85		92		0	0	177	
04:15	1		0		0	0	1		**16:15**	90		100		0	0	190	
04:30	5		4		0	0	9		**16:30**	74		128		0	0	202	
04:45	13	22	2	6	0	0	15	28	**16:45**	66	315	114	434	0	0	180	749
05:00	6		11		0	0	17		**17:00**	62		125		0	0	187	
05:15	7		11		0	0	18		**17:15**	73		135		0	0	208	
05:30	17		16		0	0	33		**17:30**	65		115		0	0	180	
05:45	30	60	26	64	0	0	56	124	**17:45**	46	246	83	458	0	0	129	704
06:00	29		14		0	0	43		**18:00**	55		57		0	0	112	
06:15	43		18		0	0	61		**18:15**	55		66		0	0	121	
06:30	49		26		0	0	75		**18:30**	37		84		0	0	121	
06:45	81	202	33	91	0	0	114	293	**18:45**	42	189	69	276	0	0	111	465
07:00	57		31		0	0	88		**19:00**	39		59		0	0	98	
07:15	101		33		0	0	134		**19:15**	31		62		0	0	93	
07:30	120		41		0	0	161		**19:30**	29		54		0	0	83	
07:45	136	414	54	159	0	0	190	573	**19:45**	26	125	32	207	0	0	58	332
08:00	123		62		0	0	185		**20:00**	27		29		0	0	56	
08:15	107		77		0	0	184		**20:15**	25		33		0	0	58	
08:30	128		68		0	0	196		**20:30**	6		37		0	0	43	
08:45	123	481	64	271	0	0	187	752	**20:45**	15	73	29	128	0	0	44	201
09:00	78		68		0	0	146		**21:00**	15		21		0	0	36	
09:15	94		55		0	0	149		**21:15**	8		16		0	0	24	
09:30	75		59		0	0	134		**21:30**	10		14		0	0	24	
09:45	86	333	70	252	0	0	156	585	**21:45**	5	38	13	64	0	0	18	102
10:00	73		73		0	0	146		**22:00**	9		18		0	0	27	
10:15	71		59		0	0	130		**22:15**	6		11		0	0	17	
10:30	80		67		0	0	147		**22:30**	15		9		0	0	24	
10:45	85	309	59	258	0	0	144	567	**22:45**	4	34	7	45	0	0	11	79
11:00	81		81		0	0	162		**23:00**	7		4		0	0	11	
11:15	75		79		0	0	154		**23:15**	2		11		0	0	13	
11:30	81		78		0	0	159		**23:30**	3		6		0	0	9	
11:45	72	309	66	304	0	0	138	613	**23:45**	3	15	5	26	0	0	8	41
TOTALS		2156		1430				**3586**	**TOTALS**		2383		3090				**5473**
SPLIT %		60.1%		39.9%				**39.6%**	**SPLIT %**		43.5%		56.5%				**60.4%**

DAILY TOTALS	NB	SB	EB	WB	Total
	4,539	4,520	0	0	9,059

AM Peak Hour	07:45	11:30				**07:45**	**PM Peak Hour**	15:15	16:30				**15:00**
AM Pk Volume	494	308				**755**	**PM Pk Volume**	392	502				**824**
Pk Hr Factor	0.908	0.794				**0.963**	**Pk Hr Factor**	0.852	0.930				**0.963**
7 - 9 Volume	895	430	0	0		**1325**	**4 - 6 Volume**	561	892	0	0		**1453**
7 - 9 Peak Hour	07:45	08:00				**07:45**	**4 - 6 Peak Hour**	16:00	16:30				**16:30**
7 - 9 Pk Volume	494	271	0	0		**755**	**4 - 6 Pk Volume**	315	502	0	0		**777**
Pk Hr Factor	0.908	0.880	0.000	0.000		**0.963**	**Pk Hr Factor**	0.875	0.930	0.000	0.000		**0.934**

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Monday
Date: 9/9/2019

City: Grass Valley
Project #: CA19_7288_001n

North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	9	2	0	0	0	0	0	0	0	0	0	0	11
01:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
02:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
03:00	0	7	2	0	0	0	0	0	0	0	0	0	0	9
04:00	0	12	8	0	2	0	0	0	0	0	0	0	0	22
05:00	0	31	21	0	7	1	0	0	0	0	0	0	0	60
06:00	3	114	56	1	27	0	0	1	0	0	0	0	0	202
07:00	0	277	92	1	42	2	0	0	0	0	0	0	0	414
08:00	2	337	115	1	23	1	0	1	0	0	1	0	0	481
09:00	1	233	76	0	23	0	0	0	0	0	0	0	0	333
10:00	2	212	63	1	26	1	0	2	2	0	0	0	0	309
11:00	1	209	77	1	20	0	0	1	0	0	0	0	0	309
12:00 PM	3	220	79	1	17	1	0	0	1	0	1	0	0	323
13:00	2	253	65	1	21	1	0	2	1	0	1	0	0	347
14:00	2	200	64	3	23	0	0	1	0	0	1	0	0	294
15:00	2	255	88	2	31	5	0	0	1	0	0	0	0	384
16:00	1	195	87	2	29	0	0	1	0	0	0	0	0	315
17:00	2	165	52	2	25	0	0	0	0	0	0	0	0	246
18:00	0	134	43	0	10	0	0	2	0	0	0	0	0	189
19:00	0	93	22	2	8	0	0	0	0	0	0	0	0	125
20:00	2	52	16	0	3	0	0	0	0	0	0	0	0	73
21:00	0	30	8	0	0	0	0	0	0	0	0	0	0	38
22:00	0	27	6	1	0	0	0	0	0	0	0	0	0	34
23:00	0	14	1	0	0	0	0	0	0	0	0	0	0	15
Totals	**23**	**3084**	**1044**	**19**	**337**	**12**		**11**	**5**		**4**			**4539**
% of Totals	1%	68%	23%	0%	7%	0%		0%	0%		0%			100%

AM Volumes	9	1446	513	5	170	5	0	5	2	0	1	0	0	2156
% AM	0%	32%	11%	0%	4%	0%		0%	0%		0%			47%
AM Peak Hour	06:00	08:00	08:00	06:00	07:00	07:00		10:00	10:00		08:00			08:00
Volume	3	337	115	1	42	2		2	2		1			481
PM Volumes	14	1638	531	14	167	7	0	6	3	0	3	0	0	2383
% PM	0%	36%	12%	0%	4%	0%		0%	0%		0%			53%
PM Peak Hour	12:00	15:00	15:00	14:00	15:00	15:00		13:00	12:00		12:00			15:00
Volume	3	255	88	3	31	5		2	1		1			384

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	895	⟷	20%	670	⟷	15%	561	⟷	12%	2413	⟷	53%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Monday
Date: 9/9/2019

City: Grass Valley
Project #: CA19_7288_001s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	4	3	0	0	0	0	0	0	0	0	0	0	7
01:00	0	8	1	0	0	0	0	0	0	0	1	0	0	10
02:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	3	3	0	0	0	0	0	0	0	0	0	0	6
05:00	0	21	33	1	8	1	0	0	0	0	0	0	0	64
06:00	0	59	23	0	2	2	0	0	2	0	3	0	0	91
07:00	0	101	44	2	12	0	0	0	0	0	0	0	0	159
08:00	0	183	65	0	18	2	0	2	0	0	1	0	0	271
09:00	1	174	63	0	13	1	0	0	0	0	0	0	0	252
10:00	0	179	66	1	7	1	0	1	1	0	2	0	0	258
11:00	1	214	73	1	11	4	0	0	0	0	0	0	0	304
12:00 PM	4	234	73	0	10	0	0	1	0	0	0	0	0	322
13:00	2	231	71	1	15	2	0	0	0	0	1	0	0	323
14:00	2	239	110	0	14	1	0	0	0	0	1	0	0	367
15:00	0	311	113	2	14	0	0	0	0	0	0	0	0	440
16:00	1	311	109	0	12	0	0	1	0	0	0	0	0	434
17:00	1	368	82	0	6	0	0	1	0	0	0	0	0	458
18:00	0	216	55	2	2	1	0	0	0	0	0	0	0	276
19:00	0	154	50	0	2	1	0	0	0	0	0	0	0	207
20:00	1	105	18	2	1	0	0	0	1	0	0	0	0	128
21:00	0	55	9	0	0	0	0	0	0	0	0	0	0	64
22:00	0	32	12	0	0	0	0	0	1	0	0	0	0	45
23:00	0	24	2	0	0	0	0	0	0	0	0	0	0	26
Totals	**13**	**3234**	**1078**	**12**	**147**	**16**		**6**	**5**		**9**			**4520**
% of Totals	0%	72%	24%	0%	3%	0%		0%	0%		0%			100%

AM Volumes	2	954	374	5	71	11	0	3	3	0	7	0	0	1430
% AM	0%	21%	8%	0%	2%	0%		0%	0%		0%			32%
AM Peak Hour	09:00	11:00	11:00	07:00	08:00	11:00		08:00	06:00		06:00			11:00
Volume	1	214	73	2	18	4		2	2		3			304
PM Volumes	11	2280	704	7	76	5	0	3	2	0	2	0	0	3090
% PM	0%	50%	16%	0%	2%	0%		0%	0%		0%			68%
PM Peak Hour	12:00	17:00	15:00	15:00	13:00	13:00		12:00	20:00		13:00			17:00
Volume	4	368	113	2	15	2		1	1		1			458

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	430	10%	645	14%	892	20%	2553	56%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Monday
Date: 9/9/2019

City: Grass Valley
Project #: CA19_7288_001

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	13	5	0	0	0	0	0	0	0	0	0	0	**18**
01:00	0	10	2	0	0	0	0	0	0	0	1	0	0	**13**
02:00	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
03:00	0	10	2	0	0	0	0	0	0	0	0	0	0	**12**
04:00	0	15	11	0	2	0	0	0	0	0	0	0	0	**28**
05:00	0	52	54	1	15	2	0	0	0	0	0	0	0	**124**
06:00	3	173	79	1	29	2	0	1	2	0	3	0	0	**293**
07:00	0	378	136	3	54	2	0	0	0	0	0	0	0	**573**
08:00	2	520	180	1	41	3	0	3	0	0	2	0	0	**752**
09:00	2	407	139	0	36	1	0	0	0	0	0	0	0	**585**
10:00	2	391	129	2	33	2	0	3	3	0	2	0	0	**567**
11:00	2	423	150	2	31	4	0	1	0	0	0	0	0	**613**
12:00 PM	7	454	152	1	27	1	0	1	1	0	1	0	0	**645**
13:00	4	484	136	2	36	3	0	2	1	0	2	0	0	**670**
14:00	4	439	174	3	37	1	0	1	0	0	2	0	0	**661**
15:00	2	566	201	4	45	5	0	0	1	0	0	0	0	**824**
16:00	2	506	196	2	41	0	0	2	0	0	0	0	0	**749**
17:00	3	533	134	2	31	0	0	1	0	0	0	0	0	**704**
18:00	0	350	98	2	12	1	0	2	0	0	0	0	0	**465**
19:00	0	247	72	2	10	1	0	0	0	0	0	0	0	**332**
20:00	3	157	34	2	4	0	0	0	1	0	0	0	0	**201**
21:00	0	85	17	0	0	0	0	0	0	0	0	0	0	**102**
22:00	0	59	18	1	0	0	0	0	1	0	0	0	0	**79**
23:00	0	38	3	0	0	0	0	0	0	0	0	0	0	**41**
Totals	**36**	**6318**	**2122**	**31**	**484**	**28**		**17**	**10**		**13**			**9059**
% of Totals	0%	70%	23%	0%	5%	0%		0%	0%		0%			100%

AM Volumes	11	2400	887	10	241	16	0	8	5	0	8	0	0	3586
% AM	0%	26%	10%	0%	3%	0%		0%	0%		0%			40%
AM Peak Hour	06:00	08:00	08:00	07:00	07:00	11:00		08:00	10:00		06:00			08:00
Volume	3	520	180	3	54	4		3	3		3			752
PM Volumes	25	3918	1235	21	243	12	0	9	5	0	5	0	0	5473
% PM	0%	43%	14%	0%	3%	0%		0%	0%		0%			60%
PM Peak Hour	12:00	15:00	15:00	15:00	15:00	15:00		13:00	12:00		13:00			15:00
Volume	7	566	201	4	45	5		2	1		2			824

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	1325		15%	1315		15%	1453		16%	4966		55%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Tuesday
Date: 9/10/2019

City: Grass Valley
Project #: CA19_7288_001

DAILY TOTALS	NB	SB	EB	WB	Total
	4,510	4,572	0	0	9,082

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		2		0	0	2		**12:00**	86		65		0	0	151	
00:15	1		3		0	0	4		**12:15**	82		98		0	0	180	
00:30	2		0		0	0	2		**12:30**	75		79		0	0	154	
00:45	2	5	2	7	0	0	4	12	**12:45**	84	327	75	317	0	0	159	644
01:00	1		3		0	0	4		**13:00**	94		69		0	0	163	
01:15	0		3		0	0	3		**13:15**	72		67		0	0	139	
01:30	0		0		0	0			**13:30**	99		85		0	0	184	
01:45	2	3	0	6	0	0	2	9	**13:45**	69	334	86	307	0	0	155	641
02:00	2		2		0	0	4		**14:00**	85		93		0	0	178	
02:15	0		0		0	0			**14:15**	59		69		0	0	128	
02:30	1		1		0	0	2		**14:30**	81		113		0	0	194	
02:45	0	3	0	3	0	0		6	**14:45**	62	287	92	367	0	0	154	654
03:00	1		2		0	0	3		**15:00**	76		115		0	0	191	
03:15	0		2		0	0	2		**15:15**	114		95		0	0	209	
03:30	7		0		0	0	7		**15:30**	91		116		0	0	207	
03:45	1	9	0	4	0	0	1	13	**15:45**	99	380	122	448	0	0	221	828
04:00	1		1		0	0	2		**16:00**	86		93		0	0	179	
04:15	2		2		0	0	4		**16:15**	91		109		0	0	200	
04:30	4		1		0	0	5		**16:30**	79		123		0	0	202	
04:45	13	20	1	5	0	0	14	25	**16:45**	58	314	116	441	0	0	174	755
05:00	12		7		0	0	19		**17:00**	54		127		0	0	181	
05:15	7		9		0	0	16		**17:15**	67		137		0	0	204	
05:30	14		18		0	0	32		**17:30**	59		120		0	0	179	
05:45	24	57	30	64	0	0	54	121	**17:45**	45	225	85	469	0	0	130	694
06:00	30		14		0	0	44		**18:00**	52		61		0	0	113	
06:15	46		7		0	0	53		**18:15**	56		72		0	0	128	
06:30	53		21		0	0	74		**18:30**	37		86		0	0	123	
06:45	78	207	25	67	0	0	103	274	**18:45**	42	187	66	285	0	0	108	472
07:00	50		28		0	0	78		**19:00**	40		62		0	0	102	
07:15	102		33		0	0	135		**19:15**	32		60		0	0	92	
07:30	116		41		0	0	157		**19:30**	34		37		0	0	71	
07:45	136	404	59	161	0	0	195	565	**19:45**	30	136	58	217	0	0	88	353
08:00	121		66		0	0	187		**20:00**	28		32		0	0	60	
08:15	104		74		0	0	178		**20:15**	17		49		0	0	66	
08:30	125		62		0	0	187		**20:30**	21		36		0	0	57	
08:45	129	479	57	259	0	0	186	738	**20:45**	21	87	30	147	0	0	51	234
09:00	76		76		0	0	152		**21:00**	12		32		0	0	44	
09:15	97		68		0	0	165		**21:15**	9		28		0	0	37	
09:30	76		52		0	0	128		**21:30**	18		22		0	0	40	
09:45	89	338	73	269	0	0	162	607	**21:45**	14	53	19	101	0	0	33	154
10:00	79		67		0	0	146		**22:00**	8		17		0	0	25	
10:15	63		55		0	0	118		**22:15**	9		10		0	0	19	
10:30	71		67		0	0	138		**22:30**	2		13		0	0	15	
10:45	81	294	56	245	0	0	137	539	**22:45**	8	27	5	45	0	0	13	72
11:00	79		78		0	0	157		**23:00**	7		9		0	0	16	
11:15	81		85		0	0	166		**23:15**	6		6		0	0	12	
11:30	74		83		0	0	157		**23:30**	2		5		0	0	7	
11:45	83	317	67	313	0	0	150	630	**23:45**	2	17	5	25	0	0	7	42
TOTALS		2136		1403				**3539**	**TOTALS**		2374		3169				**5543**
SPLIT %		60.4%		39.6%				**39.0%**	**SPLIT %**		42.8%		57.2%				**61.0%**

DAILY TOTALS	NB	SB	EB	WB	Total
	4,510	4,572	0	0	9,082

AM Peak Hour	07:45	11:00			**07:45**	**PM Peak Hour**	15:15	16:30			**15:00**
AM Pk Volume	486	313			**747**	**PM Pk Volume**	390	503			**828**
Pk Hr Factor	0.893	0.921			**0.958**	**Pk Hr Factor**	0.855	0.918			**0.937**
7 - 9 Volume	883	420	0	0	**1303**	**4 - 6 Volume**	539	910	0	0	**1449**
7 - 9 Peak Hour	07:45	07:45			**07:45**	**4 - 6 Peak Hour**	16:00	16:30			**16:30**
7 - 9 Pk Volume	486	261	0	0	**747**	**4 - 6 Pk Volume**	314	503	0	0	**761**
Pk Hr Factor	0.893	0.882	0.000	0.000	**0.958**	**Pk Hr Factor**	0.863	0.918	0.000	0.000	**0.933**

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Tuesday
Date: 9/10/2019

City: Grass Valley
Project #: CA19_7288_001n

North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	5
01:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	2	0	0	0	1	0	0	0	0	0	0	0	3
03:00	0	7	2	0	0	0	0	0	0	0	0	0	0	9
04:00	0	10	8	0	2	0	0	0	0	0	0	0	0	20
05:00	0	26	23	0	8	0	0	0	0	0	0	0	0	57
06:00	4	124	51	2	26	0	0	0	0	0	0	0	0	207
07:00	2	272	85	2	42	0	0	1	0	0	0	0	0	404
08:00	1	344	107	2	25	0	0	0	0	0	0	0	0	479
09:00	3	243	63	2	25	1	0	1	0	0	0	0	0	338
10:00	2	204	57	2	25	1	0	1	2	0	0	0	0	294
11:00	3	217	75	1	20	0	0	0	1	0	0	0	0	317
12:00 PM	2	230	73	2	18	1	0	1	0	0	0	0	0	327
13:00	3	251	53	2	25	0	0	0	0	0	0	0	0	334
14:00	2	206	60	1	17	0	0	1	0	0	0	0	0	287
15:00	4	257	89	0	28	2	0	0	0	0	0	0	0	380
16:00	3	203	83	1	23	0	0	0	1	0	0	0	0	314
17:00	2	155	49	1	17	1	0	0	0	0	0	0	0	225
18:00	0	136	42	2	7	0	0	0	0	0	0	0	0	187
19:00	0	118	14	1	3	0	0	0	0	0	0	0	0	136
20:00	0	65	19	0	3	0	0	0	0	0	0	0	0	87
21:00	2	35	13	0	3	0	0	0	0	0	0	0	0	53
22:00	0	23	3	0	1	0	0	0	0	0	0	0	0	27
23:00	0	16	0	0	1	0	0	0	0	0	0	0	0	17
Totals	**33**	**3151**	**970**	**21**	**319**	**7**		**5**	**4**					**4510**
% of Totals	1%	70%	22%	0%	7%	0%		0%	0%					100%

AM Volumes	15	1456	472	11	173	3	0	3	3	0	0	0	0	2136
% AM	0%	32%	10%	0%	4%	0%		0%	0%					47%
AM Peak Hour	06:00	08:00	08:00	06:00	07:00	02:00		07:00	10:00					08:00
Volume	4	344	107	2	42	1		1	2					479
PM Volumes	18	1695	498	10	146	4	0	2	1	0	0	0	0	2374
% PM	0%	38%	11%	0%	3%	0%		0%	0%					53%
PM Peak Hour	15:00	15:00	15:00	12:00	15:00	15:00		12:00	16:00					15:00
Volume	4	257	89	2	28	2		1	1					380

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	883	20%	661	15%	539	12%	2427	54%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Tuesday
Date: 9/10/2019

City: Grass Valley
Project #: CA19_7288_001s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	7
01:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
02:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
03:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
04:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
05:00	0	23	31	0	10	0	0	0	0	0	0	0	0	64
06:00	0	51	14	0	2	0	0	0	0	0	0	0	0	67
07:00	1	95	48	0	16	1	0	0	0	0	0	0	0	161
08:00	2	184	53	1	18	1	0	0	0	0	0	0	0	259
09:00	4	186	64	2	12	0	0	1	0	0	0	0	0	269
10:00	0	180	51	3	9	2	0	0	0	0	0	0	0	245
11:00	4	219	71	4	14	0	0	1	0	0	0	0	0	313
12:00 PM	1	235	67	2	10	1	0	0	1	0	0	0	0	317
13:00	3	229	58	0	17	0	0	0	0	0	0	0	0	307
14:00	2	245	99	0	19	1	0	1	0	0	0	0	0	367
15:00	1	321	109	1	15	0	0	0	1	0	0	0	0	448
16:00	2	320	100	3	15	1	0	0	0	0	0	0	0	441
17:00	3	376	81	0	8	0	0	1	0	0	0	0	0	469
18:00	1	229	52	0	2	1	0	0	0	0	0	0	0	285
19:00	0	167	45	0	5	0	0	0	0	0	0	0	0	217
20:00	1	113	32	0	1	0	0	0	0	0	0	0	0	147
21:00	0	77	23	0	1	0	0	0	0	0	0	0	0	101
22:00	0	35	10	0	0	0	0	0	0	0	0	0	0	45
23:00	0	24	1	0	0	0	0	0	0	0	0	0	0	25
Totals	**25**	**3332**	**1011**	**16**	**174**	**8**		**4**	**2**					**4572**
% of Totals	1%	73%	22%	0%	4%	0%		0%	0%					100%

AM Volumes	11	961	334	10	81	4	0	2	0	0	0	0	0	1403
% AM	0%	21%	7%	0%	2%	0%		0%						31%
AM Peak Hour	09:00	11:00	11:00	11:00	08:00	10:00		09:00						11:00
Volume	4	219	71	4	18	2		1						313
PM Volumes	14	2371	677	6	93	4	0	2	2	0	0	0	0	3169
% PM	0%	52%	15%	0%	2%	0%		0%	0%					69%
PM Peak Hour	13:00	17:00	15:00	16:00	14:00	12:00		14:00	12:00					17:00
Volume	3	376	109	3	19	1		1	1					469

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	420		9%	624		14%	910		20%	2618		57%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Project Dwy & E Bennett Rd

Day: Tuesday
Date: 9/10/2019

City: Grass Valley
Project #: CA19_7288_001

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	11	1	0	0	0	0	0	0	0	0	0	0	12
01:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
02:00	0	4	1	0	0	1	0	0	0	0	0	0	0	6
03:00	0	10	3	0	0	0	0	0	0	0	0	0	0	13
04:00	0	15	8	0	2	0	0	0	0	0	0	0	0	25
05:00	0	49	54	0	18	0	0	0	0	0	0	0	0	121
06:00	4	175	65	2	28	0	0	0	0	0	0	0	0	274
07:00	3	367	133	2	58	1	0	1	0	0	0	0	0	565
08:00	3	528	160	3	43	1	0	0	0	0	0	0	0	738
09:00	7	429	127	4	37	1	0	2	0	0	0	0	0	607
10:00	2	384	108	5	34	3	0	1	2	0	0	0	0	539
11:00	7	436	146	5	34	0	0	1	1	0	0	0	0	630
12:00 PM	3	465	140	4	28	2	0	1	1	0	0	0	0	644
13:00	6	480	111	2	42	0	0	0	0	0	0	0	0	641
14:00	4	451	159	1	36	1	0	2	0	0	0	0	0	654
15:00	5	578	198	1	43	2	0	0	1	0	0	0	0	828
16:00	5	523	183	4	38	1	0	0	1	0	0	0	0	755
17:00	5	531	130	1	25	1	0	1	0	0	0	0	0	694
18:00	1	365	94	2	9	1	0	0	0	0	0	0	0	472
19:00	0	285	59	1	8	0	0	0	0	0	0	0	0	353
20:00	1	178	51	0	4	0	0	0	0	0	0	0	0	234
21:00	2	112	36	0	4	0	0	0	0	0	0	0	0	154
22:00	0	58	13	0	1	0	0	0	0	0	0	0	0	72
23:00	0	40	1	0	1	0	0	0	0	0	0	0	0	42
Totals	**58**	**6483**	**1981**	**37**	**493**	**15**		**9**	**6**					**9082**
% of Totals	1%	71%	22%	0%	5%	0%		0%	0%					100%

AM Volumes	26	2417	806	21	254	7	0	5	3	0	0	0	0	3539
% AM	0%	27%	9%	0%	3%	0%		0%	0%					39%
AM Peak Hour	09:00	08:00	08:00	10:00	07:00	10:00		09:00	10:00					08:00
Volume	7	528	160	5	58	3		2	2					738
PM Volumes	32	4066	1175	16	239	8	0	4	3	0	0	0	0	5543
% PM	0%	45%	13%	0%	3%	0%		0%	0%					61%
PM Peak Hour	13:00	15:00	15:00	12:00	15:00	12:00		14:00	12:00					15:00
Volume	6	578	198	4	43	2		2	1					828

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	1303	14%	1285	14%	1449	16%	5045	56%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Wednesday
Date: 9/4/2019

City: Grass Valley
Project #: CA19_7288_002

DAILY TOTALS	NB	SB	EB	WB	Total
	7,860	7,742	0	0	15,602

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	7		4		0	0	11		**12:00**	161		150		0	0	311	
00:15	4		7		0	0	11		**12:15**	131		168		0	0	299	
00:30	3		7		0	0	10		**12:30**	147		150		0	0	297	
00:45	2	16	3	21	0	0	5	37	**12:45**	150	589	168	636	0	0	318	1225
01:00	3		5		0	0	8		**13:00**	150		132		0	0	282	
01:15	4		3		0	0	7		**13:15**	133		146		0	0	279	
01:30	2		2		0	0	4		**13:30**	146		157		0	0	303	
01:45	1	10	2	12	0	0	3	22	**13:45**	137	566	158	593	0	0	295	1159
02:00	2		4		0	0	6		**14:00**	143		157		0	0	300	
02:15	1		2		0	0	3		**14:15**	142		134		0	0	276	
02:30	1		3		0	0	4		**14:30**	129		141		0	0	270	
02:45	3	7	3	12	0	0	6	19	**14:45**	165	579	167	599	0	0	332	1178
03:00	2		0		0	0	2		**15:00**	126		173		0	0	299	
03:15	1		0		0	0	1		**15:15**	163		149		0	0	312	
03:30	2		4		0	0	6		**15:30**	204		168		0	0	372	
03:45	6	11	7	11	0	0	13	22	**15:45**	175	668	160	650	0	0	335	1318
04:00	3		4		0	0	7		**16:00**	155		157		0	0	312	
04:15	6		12		0	0	18		**16:15**	154		147		0	0	301	
04:30	8		18		0	0	26		**16:30**	176		197		0	0	373	
04:45	11	28	6	40	0	0	17	68	**16:45**	173	658	166	667	0	0	339	1325
05:00	29		19		0	0	48		**17:00**	179		196		0	0	375	
05:15	18		32		0	0	50		**17:15**	138		164		0	0	302	
05:30	25		30		0	0	55		**17:30**	108		126		0	0	234	
05:45	46	118	55	136	0	0	101	254	**17:45**	125	550	119	605	0	0	244	1155
06:00	42		35		0	0	77		**18:00**	102		118		0	0	220	
06:15	62		31		0	0	93		**18:15**	84		122		0	0	206	
06:30	73		63		0	0	136		**18:30**	79		117		0	0	196	
06:45	102	279	98	227	0	0	200	506	**18:45**	71	336	91	448	0	0	162	784
07:00	88		79		0	0	167		**19:00**	67		91		0	0	158	
07:15	131		89		0	0	220		**19:15**	51		79		0	0	130	
07:30	175		98		0	0	273		**19:30**	49		77		0	0	126	
07:45	185	579	111	377	0	0	296	956	**19:45**	40	207	58	305	0	0	98	512
08:00	166		126		0	0	292		**20:00**	45		55		0	0	100	
08:15	160		127		0	0	287		**20:15**	45		70		0	0	115	
08:30	164		120		0	0	284		**20:30**	35		52		0	0	87	
08:45	161	651	117	490	0	0	278	1141	**20:45**	20	145	51	228	0	0	71	373
09:00	152		114		0	0	266		**21:00**	19		44		0	0	63	
09:15	140		114		0	0	254		**21:15**	35		41		0	0	76	
09:30	156		111		0	0	267		**21:30**	19		30		0	0	49	
09:45	162	610	125	464	0	0	287	1074	**21:45**	13	86	23	138	0	0	36	224
10:00	115		103		0	0	218		**22:00**	23		30		0	0	53	
10:15	147		107		0	0	254		**22:15**	11		27		0	0	38	
10:30	123		109		0	0	232		**22:30**	10		11		0	0	21	
10:45	131	516	114	433	0	0	245	949	**22:45**	11	55	12	80	0	0	23	135
11:00	144		142		0	0	286		**23:00**	8		8		0	0	16	
11:15	151		138		0	0	289		**23:15**	10		8		0	0	18	
11:30	126		125		0	0	251		**23:30**	2		6		0	0	8	
11:45	148	569	138	543	0	0	286	1112	**23:45**	7	27	5	27	0	0	12	54
TOTALS		3394		2766				**6160**	**TOTALS**		4466		4976				**9442**
SPLIT %		55.1%		44.9%				**39.5%**	**SPLIT %**		47.3%		52.7%				**60.5%**

DAILY TOTALS	NB	SB	EB	WB	Total
	7,860	7,742	0	0	15,602

AM Peak Hour	07:30	11:45					**11:45**	**PM Peak Hour**	15:15	16:30					**16:30**
AM Pk Volume	686	606					**1193**	**PM Pk Volume**	697	723					**1389**
Pk Hr Factor	0.927	0.902					**0.959**	**Pk Hr Factor**	0.854	0.918					**0.926**
7 - 9 Volume	1230	867	0	0			**2097**	**4 - 6 Volume**	1208	1272	0	0			**2480**
7 - 9 Peak Hour	07:30	08:00					**07:45**	**4 - 6 Peak Hour**	16:15	16:30					**16:30**
7 - 9 Pk Volume	686	490	0	0			**1159**	**4 - 6 Pk Volume**	682	723	0	0			**1389**
Pk Hr Factor	0.927	0.965	0.000	0.000			**0.979**	**Pk Hr Factor**	0.953	0.918	0.000	0.000			**0.926**

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Wednesday
Date: 9/4/2019

City: Grass Valley
Project #: CA19_7288_002n

North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	12	4	0	0	0	0	0	0	0	0	0	0	16
01:00	0	9	1	0	0	0	0	0	0	0	0	0	0	10
02:00	0	6	0	0	1	0	0	0	0	0	0	0	0	7
03:00	0	9	2	0	0	0	0	0	0	0	0	0	0	11
04:00	0	15	7	0	6	0	0	0	0	0	0	0	0	28
05:00	0	54	33	0	19	9	1	0	2	0	0	0	0	118
06:00	0	141	81	2	45	5	0	1	1	0	3	0	0	279
07:00	1	355	147	3	65	0	0	2	3	0	3	0	0	579
08:00	0	408	168	5	60	3	0	3	3	0	1	0	0	651
09:00	1	389	159	3	50	3	0	1	2	0	2	0	0	610
10:00	0	326	140	2	43	3	0	1	0	0	1	0	0	516
11:00	1	363	145	4	48	5	0	0	3	0	0	0	0	569
12:00 PM	1	396	143	4	34	0	0	3	6	0	2	0	0	589
13:00	1	365	153	3	37	1	0	2	4	0	0	0	0	566
14:00	1	359	160	4	40	7	0	5	2	0	1	0	0	579
15:00	1	441	169	2	48	2	0	1	3	0	1	0	0	668
16:00	2	456	155	1	38	2	0	3	0	0	1	0	0	658
17:00	1	378	136	0	29	3	0	3	0	0	0	0	0	550
18:00	0	238	73	2	19	2	0	0	1	0	1	0	0	336
19:00	0	138	52	0	13	3	0	0	1	0	0	0	0	207
20:00	0	95	40	0	8	2	0	0	0	0	0	0	0	145
21:00	0	60	14	0	8	3	0	0	0	0	1	0	0	86
22:00	0	38	12	0	3	1	0	1	0	0	0	0	0	55
23:00	0	19	8	0	0	0	0	0	0	0	0	0	0	27
Totals	**10**	**5070**	**2002**	**35**	**614**	**54**	**1**	**26**	**31**		**17**			**7860**
% of Totals	0%	65%	25%	0%	8%	1%	0%	0%	0%		0%			100%

AM Volumes	3	2087	887	19	337	28	1	8	14	0	10	0	0	3394
% AM	0%	27%	11%	0%	4%	0%	0%	0%	0%		0%			43%
AM Peak Hour	07:00	08:00	08:00	08:00	07:00	05:00	05:00	08:00	07:00		06:00			08:00
Volume	1	408	168	5	65	9	1	3	3		3			651
PM Volumes	7	2983	1115	16	277	26	0	18	17	0	7	0	0	4466
% PM	0%	38%	14%	0%	4%	0%		0%	0%		0%			57%
PM Peak Hour	16:00	16:00	15:00	12:00	15:00	14:00		14:00	12:00		12:00			15:00
Volume	2	456	169	4	48	7		5	6		2			668

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	1230		16%	1155		15%	1208		15%	4267		54%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Wednesday
Date: 9/4/2019

City: Grass Valley
Project #: CA19_7288_002s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	17	3	0	1	0	0	0	0	0	0	0	0	21
01:00	0	10	2	0	0	0	0	0	0	0	0	0	0	12
02:00	0	8	3	0	1	0	0	0	0	0	0	0	0	12
03:00	0	5	3	0	1	0	0	0	0	0	2	0	0	11
04:00	0	25	14	0	1	0	0	0	0	0	0	0	0	40
05:00	0	54	54	1	26	0	0	0	1	0	0	0	0	136
06:00	1	132	65	1	22	1	0	1	2	0	2	0	0	227
07:00	0	233	103	3	32	2	0	4	0	0	0	0	0	377
08:00	0	311	128	4	44	0	0	3	0	0	0	0	0	490
09:00	0	301	131	1	27	3	0	1	0	0	0	0	0	464
10:00	2	291	94	3	39	0	0	2	0	0	2	0	0	433
11:00	1	346	148	5	38	1	0	2	1	0	1	0	0	543
12:00 PM	0	415	163	2	51	1	0	3	1	0	0	0	0	636
13:00	0	391	148	3	45	0	0	6	0	0	0	0	0	593
14:00	0	400	143	4	46	1	0	4	1	0	0	0	0	599
15:00	1	427	154	5	52	7	0	3	0	0	1	0	0	650
16:00	0	444	164	1	53	1	0	3	1	0	0	0	0	667
17:00	0	449	130	0	25	0	0	1	0	0	0	0	0	605
18:00	0	338	93	0	16	0	0	1	0	0	0	0	0	448
19:00	0	232	57	1	13	1	0	1	0	0	0	0	0	305
20:00	0	165	44	0	18	1	0	0	0	0	0	0	0	228
21:00	0	98	32	0	7	0	0	1	0	0	0	0	0	138
22:00	0	55	20	0	2	2	0	1	0	0	0	0	0	80
23:00	0	19	7	1	0	0	0	0	0	0	0	0	0	27
Totals	**5**	**5166**	**1903**	**35**	**560**	**21**		**37**	**7**		**8**			**7742**
% of Totals	0%	67%	25%	0%	7%	0%		0%	0%		0%			100%

AM Volumes	4	1733	748	18	232	7	0	13	4	0	7	0	0	2766
% AM	0%	22%	10%	0%	3%	0%		0%	0%		0%			36%
AM Peak Hour	10:00	11:00	11:00	11:00	08:00	09:00		07:00	06:00		03:00			11:00
Volume	2	346	148	5	44	3		4	2		2			543
PM Volumes	1	3433	1155	17	328	14	0	24	3	0	1	0	0	4976
% PM	0%	44%	15%	0%	4%	0%		0%	0%		0%			64%
PM Peak Hour	15:00	17:00	16:00	15:00	16:00	15:00		13:00	12:00		15:00			16:00
Volume	1	449	164	5	53	7		6	1		1			667

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	867	11%	1229	16%	1272	16%	4374	56%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Wednesday
Date: 9/4/2019

City: Grass Valley
Project #: CA19_7288_002

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	29	7	0	1	0	0	0	0	0	0	0	0	**37**
01:00	0	19	3	0	0	0	0	0	0	0	0	0	0	**22**
02:00	0	14	3	0	2	0	0	0	0	0	0	0	0	**19**
03:00	0	14	5	0	1	0	0	0	0	0	2	0	0	**22**
04:00	0	40	21	0	7	0	0	0	0	0	0	0	0	**68**
05:00	0	108	87	1	45	9	1	0	3	0	0	0	0	**254**
06:00	1	273	146	3	67	6	0	2	3	0	5	0	0	**506**
07:00	1	588	250	6	97	2	0	6	3	0	3	0	0	**956**
08:00	0	719	296	9	104	3	0	6	3	0	1	0	0	**1141**
09:00	1	690	290	4	77	6	0	2	2	0	2	0	0	**1074**
10:00	2	617	234	5	82	3	0	3	0	0	3	0	0	**949**
11:00	2	709	293	9	86	6	0	2	4	0	1	0	0	**1112**
12:00 PM	1	811	306	6	85	1	0	6	7	0	2	0	0	**1225**
13:00	1	756	301	6	82	1	0	8	4	0	0	0	0	**1159**
14:00	1	759	303	8	86	8	0	9	3	0	1	0	0	**1178**
15:00	2	868	323	7	100	9	0	4	3	0	2	0	0	**1318**
16:00	2	900	319	2	91	3	0	6	1	0	1	0	0	**1325**
17:00	1	827	266	0	54	3	0	4	0	0	0	0	0	**1155**
18:00	0	576	166	2	35	2	0	1	1	0	1	0	0	**784**
19:00	0	370	109	1	26	4	0	1	1	0	0	0	0	**512**
20:00	0	260	84	0	26	3	0	0	0	0	0	0	0	**373**
21:00	0	158	46	0	15	3	0	1	0	0	1	0	0	**224**
22:00	0	93	32	0	5	3	0	2	0	0	0	0	0	**135**
23:00	0	38	15	1	0	0	0	0	0	0	0	0	0	**54**
Totals	**15**	**10236**	**3905**	**70**	**1174**	**75**	**1**	**63**	**38**		**25**			**15602**
% of Totals	0%	66%	25%	0%	8%	0%	0%	0%	0%		0%			100%

AM Volumes	7	3820	1635	37	569	35	1	21	18	0	17	0	0	6160
% AM	0%	24%	10%	0%	4%	0%	0%	0%	0%		0%			39%
AM Peak Hour	10:00	08:00	08:00	08:00	08:00	05:00	05:00	07:00	11:00		06:00			08:00
Volume	2	719	296	9	104	9	1	6	4		5			1141
PM Volumes	8	6416	2270	33	605	40	0	42	20	0	8	0	0	9442
% PM	0%	41%	15%	0%	4%	0%		0%	0%		0%			61%
PM Peak Hour	15:00	16:00	15:00	14:00	15:00	15:00		14:00	12:00		12:00			16:00
Volume	2	900	323	8	100	9		9	7		2			1325

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	2097		13%	2384		15%	2480		16%	8641		55%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Thursday
Date: 9/5/2019

City: Grass Valley
Project #: CA19_7288_002

DAILY TOTALS	NB	SB	EB	WB	Total
	7,952	7,670	0	0	15,622

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	7		8		0	0	15		**12:00**	146		125		0	0	271	
00:15	3		11		0	0	14		**12:15**	116		150		0	0	266	
00:30	2		4		0	0	6		**12:30**	138		153		0	0	291	
00:45	2	14	3	26	0	0	5	40	**12:45**	136	536	141	569	0	0	277	1105
01:00	2		2		0	0	4		**13:00**	127		140		0	0	267	
01:15	3		1		0	0	4		**13:15**	141		135		0	0	276	
01:30	0		2		0	0	2		**13:30**	150		145		0	0	295	
01:45	5	10	3	8	0	0	8	18	**13:45**	128	546	145	565	0	0	273	1111
02:00	1		4		0	0	5		**14:00**	144		127		0	0	271	
02:15	0		2		0	0	2		**14:15**	157		145		0	0	302	
02:30	1		2		0	0	3		**14:30**	139		146		0	0	285	
02:45	1	3	2	10	0	0	3	13	**14:45**	152	592	174	592	0	0	326	1184
03:00	5		3		0	0	8		**15:00**	146		135		0	0	281	
03:15	3		3		0	0	6		**15:15**	174		152		0	0	326	
03:30	2		1		0	0	3		**15:30**	193		161		0	0	354	
03:45	4	14	5	12	0	0	9	26	**15:45**	172	685	160	608	0	0	332	1293
04:00	1		7		0	0	8		**16:00**	188		147		0	0	335	
04:15	7		12		0	0	19		**16:15**	150		170		0	0	320	
04:30	6		15		0	0	21		**16:30**	210		191		0	0	401	
04:45	11	25	6	40	0	0	17	65	**16:45**	171	719	192	700	0	0	363	1419
05:00	28		18		0	0	46		**17:00**	175		187		0	0	362	
05:15	20		23		0	0	43		**17:15**	151		181		0	0	332	
05:30	24		34		0	0	58		**17:30**	111		150		0	0	261	
05:45	40	112	53	128	0	0	93	240	**17:45**	104	541	131	649	0	0	235	1190
06:00	35		30		0	0	65		**18:00**	108		83		0	0	191	
06:15	51		38		0	0	89		**18:15**	77		88		0	0	165	
06:30	66		59		0	0	125		**18:30**	83		108		0	0	191	
06:45	89	241	113	240	0	0	202	481	**18:45**	94	362	112	391	0	0	206	753
07:00	105		73		0	0	178		**19:00**	56		100		0	0	156	
07:15	129		67		0	0	196		**19:15**	51		108		0	0	159	
07:30	173		99		0	0	272		**19:30**	59		66		0	0	125	
07:45	206	613	113	352	0	0	319	965	**19:45**	54	220	62	336	0	0	116	556
08:00	176		138		0	0	314		**20:00**	42		60		0	0	102	
08:15	187		132		0	0	319		**20:15**	49		86		0	0	135	
08:30	149		138		0	0	287		**20:30**	40		72		0	0	112	
08:45	204	716	115	523	0	0	319	1239	**20:45**	29	160	49	267	0	0	78	427
09:00	162		101		0	0	263		**21:00**	25		43		0	0	68	
09:15	141		109		0	0	250		**21:15**	22		31		0	0	53	
09:30	130		118		0	0	248		**21:30**	31		33		0	0	64	
09:45	132	565	128	456	0	0	260	1021	**21:45**	25	103	29	136	0	0	54	239
10:00	126		88		0	0	214		**22:00**	9		24		0	0	33	
10:15	124		96		0	0	220		**22:15**	10		19		0	0	29	
10:30	138		116		0	0	254		**22:30**	14		23		0	0	37	
10:45	136	524	121	421	0	0	257	945	**22:45**	22	55	14	80	0	0	36	135
11:00	120		122		0	0	242		**23:00**	12		6		0	0	18	
11:15	169		134		0	0	303		**23:15**	7		10		0	0	17	
11:30	132		134		0	0	266		**23:30**	10		10		0	0	20	
11:45	140	561	132	522	0	0	272	1083	**23:45**	6	35	13	39	0	0	19	74
TOTALS		3398		2738				**6136**	**TOTALS**		4554		4932				**9486**
SPLIT %		55.4%		44.6%				**39.3%**	**SPLIT %**		48.0%		52.0%				**60.7%**

DAILY TOTALS	NB	SB	EB	WB	Total
	7,952	7,670	0	0	15,622

AM Peak Hour	07:30		11:45					**07:45**	**PM Peak Hour**	15:15		16:30					**16:30**
AM Pk Volume	742		560					**1239**	**PM Pk Volume**	727		751					**1458**
Pk Hr Factor	0.900		0.915					**0.971**	**Pk Hr Factor**	0.942		0.978					**0.909**
7 - 9 Volume	1329		875		0	0		**2204**	**4 - 6 Volume**	1260		1349		0	0		**2609**
7 - 9 Peak Hour	07:30		08:00					**07:45**	**4 - 6 Peak Hour**	16:00		16:30					**16:30**
7 - 9 Pk Volume	742		523		0	0		**1239**	**4 - 6 Pk Volume**	719		751		0	0		**1458**
Pk Hr Factor	0.900		0.947		0.000	0.000		**0.971**	**Pk Hr Factor**	0.856		0.978		0.000	0.000		**0.909**

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Thursday
Date: 9/5/2019

City: Grass Valley
Project #: CA19_7288_002n

North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	12	2	0	0	0	0	0	0	0	0	0	0	14
01:00	0	10	0	0	0	0	0	0	0	0	0	0	0	10
02:00	0	1	0	0	2	0	0	0	0	0	0	0	0	3
03:00	0	10	4	0	0	0	0	0	0	0	0	0	0	14
04:00	0	17	6	0	2	0	0	0	0	0	0	0	0	25
05:00	0	52	30	0	16	13	0	0	1	0	0	0	0	112
06:00	1	129	70	2	31	5	0	1	0	0	2	0	0	241
07:00	1	369	163	5	61	4	0	3	3	0	4	0	0	613
08:00	1	470	169	3	64	5	0	2	1	0	0	1	0	716
09:00	0	345	165	2	45	4	0	0	2	0	2	0	0	565
10:00	1	330	137	3	47	0	0	1	4	0	1	0	0	524
11:00	0	357	157	0	39	3	0	2	1	0	2	0	0	561
12:00 PM	0	343	151	3	35	0	0	2	1	0	1	0	0	536
13:00	0	352	136	2	42	5	0	5	3	0	1	0	0	546
14:00	0	371	159	1	55	2	0	2	1	0	1	0	0	592
15:00	1	414	202	1	61	1	0	5	0	0	0	0	0	685
16:00	0	437	215	2	57	4	0	4	0	0	0	0	0	719
17:00	0	332	165	1	42	0	0	1	0	0	0	0	0	541
18:00	0	245	89	0	25	3	0	0	0	0	0	0	0	362
19:00	0	159	50	1	8	2	0	0	0	0	0	0	0	220
20:00	0	108	41	0	9	2	0	0	0	0	0	0	0	160
21:00	0	76	20	0	4	1	0	1	0	0	1	0	0	103
22:00	0	42	10	0	2	0	0	1	0	0	0	0	0	55
23:00	0	22	10	0	3	0	0	0	0	0	0	0	0	35
Totals	**5**	**5003**	**2151**	**26**	**650**	**54**		**30**	**17**		**15**	**1**		**7952**
% of Totals	0%	63%	27%	0%	8%	1%		0%	0%		0%	0%		100%

AM Volumes	4	2102	903	15	307	34	0	9	12	0	11	1	0	3398
% AM	0%	26%	11%	0%	4%	0%		0%	0%		0%	0%		43%
AM Peak Hour	06:00	08:00	08:00	07:00	08:00	05:00		07:00	10:00		07:00	08:00		08:00
Volume	1	470	169	5	64	13		3	4		4	1		716
PM Volumes	1	2901	1248	11	343	20	0	21	5	0	4	0	0	4554
% PM	0%	36%	16%	0%	4%	0%		0%	0%		0%			57%
PM Peak Hour	15:00	16:00	16:00	12:00	15:00	13:00		13:00	13:00		12:00			16:00
Volume	1	437	215	3	61	5		5	3		1			719

Directional Peak Periods All Classes	AM 7-9 Volume	AM 7-9 %	NOON 12-2 Volume	NOON 12-2 %	PM 4-6 Volume	PM 4-6 %	Off Peak Volumes Volume	Off Peak Volumes %
	1329	17%	1082	14%	1260	16%	4281	54%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Thursday
Date: 9/5/2019

City: Grass Valley
Project #: CA19_7288_002s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	21	5	0	0	0	0	0	0	0	0	0	0	26
01:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
02:00	0	7	3	0	0	0	0	0	0	0	0	0	0	10
03:00	0	6	5	0	0	0	0	0	0	0	1	0	0	12
04:00	0	24	14	0	2	0	0	0	0	0	0	0	0	40
05:00	0	61	47	1	17	0	0	0	1	0	0	1	0	128
06:00	0	128	77	1	28	1	0	2	1	0	2	0	0	240
07:00	0	205	108	2	31	2	0	1	2	0	0	1	0	352
08:00	0	328	140	3	45	2	0	2	3	0	0	0	0	523
09:00	0	296	119	1	36	1	0	2	1	0	0	0	0	456
10:00	0	264	123	3	27	0	1	1	1	0	1	0	0	421
11:00	1	340	151	1	25	2	0	1	0	0	1	0	0	522
12:00 PM	0	386	137	3	38	2	0	2	1	0	0	0	0	569
13:00	0	360	144	3	53	1	0	3	0	0	1	0	0	565
14:00	0	371	161	2	54	3	0	1	0	0	0	0	0	592
15:00	0	402	143	1	57	2	0	3	0	0	0	0	0	608
16:00	0	464	184	4	42	3	0	2	1	0	0	0	0	700
17:00	1	483	139	1	25	0	0	0	0	0	0	0	0	649
18:00	0	292	75	0	22	1	0	1	0	0	0	0	0	391
19:00	0	249	65	0	21	1	0	0	0	0	0	0	0	336
20:00	0	202	56	0	7	0	0	2	0	0	0	0	0	267
21:00	0	112	18	3	2	0	0	1	0	0	0	0	0	136
22:00	0	58	18	0	2	1	0	1	0	0	0	0	0	80
23:00	0	33	5	0	0	0	0	1	0	0	0	0	0	39
Totals	**2**	**5100**	**1937**	**29**	**534**	**22**	**1**	**26**	**11**		**6**	**2**		**7670**
% of Totals	0%	66%	25%	0%	7%	0%	0%	0%	0%		0%	0%		100%

AM Volumes	1	1688	792	12	211	8	1	9	9	0	5	2	0	2738
% AM	0%	22%	10%	0%	3%	0%	0%	0%	0%		0%	0%		36%
AM Peak Hour	11:00	11:00	11:00	08:00	08:00	07:00	10:00	06:00	08:00		06:00	05:00		08:00
Volume	1	340	151	3	45	2	1	2	3		2	1		523
PM Volumes	1	3412	1145	17	323	14	0	17	2	0	1	0	0	4932
% PM	0%	44%	15%	0%	4%	0%		0%	0%		0%			64%
PM Peak Hour	17:00	17:00	16:00	16:00	15:00	14:00		13:00	12:00		13:00			16:00
Volume	1	483	184	4	57	3		3	1		1			700

Directional Peak Periods	**AM 7-9**		**NOON 12-2**		**PM 4-6**		**Off Peak Volumes**	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	875	11%	1134	15%	1349	18%	4312	56%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Thursday
Date: 9/5/2019

City: Grass Valley
Project #: CA19_7288_002

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	33	7	0	0	0	0	0	0	0	0	0	0	40
01:00	0	18	0	0	0	0	0	0	0	0	0	0	0	18
02:00	0	8	3	0	2	0	0	0	0	0	0	0	0	13
03:00	0	16	9	0	0	0	0	0	0	0	1	0	0	26
04:00	0	41	20	0	4	0	0	0	0	0	0	0	0	65
05:00	0	113	77	1	33	13	0	0	2	0	0	1	0	240
06:00	1	257	147	3	59	6	0	3	1	0	4	0	0	481
07:00	1	574	271	7	92	6	0	4	5	0	4	1	0	965
08:00	1	798	309	6	109	7	0	4	4	0	0	1	0	1239
09:00	0	641	284	3	81	5	0	2	3	0	2	0	0	1021
10:00	1	594	260	6	74	0	1	2	5	0	2	0	0	945
11:00	1	697	308	1	64	5	0	3	1	0	3	0	0	1083
12:00 PM	0	729	288	6	73	2	0	4	2	0	1	0	0	1105
13:00	0	712	280	5	95	6	0	8	3	0	2	0	0	1111
14:00	0	742	320	3	109	5	0	3	1	0	1	0	0	1184
15:00	1	816	345	2	118	3	0	8	0	0	0	0	0	1293
16:00	0	901	399	6	99	7	0	6	1	0	0	0	0	1419
17:00	1	815	304	2	67	0	0	1	0	0	0	0	0	1190
18:00	0	537	164	0	47	4	0	1	0	0	0	0	0	753
19:00	0	408	115	1	29	3	0	0	0	0	0	0	0	556
20:00	0	310	97	0	16	2	0	2	0	0	0	0	0	427
21:00	0	188	38	3	6	1	0	2	0	0	1	0	0	239
22:00	0	100	28	0	4	1	0	2	0	0	0	0	0	135
23:00	0	55	15	0	3	0	0	1	0	0	0	0	0	74
Totals	**7**	**10103**	**4088**	**55**	**1184**	**76**	**1**	**56**	**28**		**21**	**3**		**15622**
% of Totals	0%	65%	26%	0%	8%	0%	0%	0%	0%		0%	0%		100%

AM Volumes	5	3790	1695	27	518	42	1	18	21	0	16	3	0	6136
% AM	0%	24%	11%	0%	3%	0%	0%	0%	0%		0%	0%		39%
AM Peak Hour	06:00	08:00	08:00	07:00	08:00	05:00	10:00	07:00	07:00		06:00	05:00		08:00
Volume	1	798	309	7	109	13	1	4	5		4	1		1239
PM Volumes	2	6313	2393	28	666	34	0	38	7	0	5	0	0	9486
% PM	0%	40%	15%	0%	4%	0%		0%	0%		0%			61%
PM Peak Hour	15:00	16:00	16:00	12:00	15:00	16:00		13:00	13:00		13:00			16:00
Volume	1	901	399	6	118	7		8	3		2			1419

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	2204		14%	2216		14%	2609		17%	8593		55%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Friday
Date: 9/6/2019

City: Grass Valley
Project #: CA19_7288_002

DAILY TOTALS	NB	SB	EB	WB	Total
	7,776	7,751	0	0	15,527

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	6		5		0	0	11		**12:00**	162		150		0	0	312	
00:15	5		3		0	0	8		**12:15**	161		175		0	0	336	
00:30	2		4		0	0	6		**12:30**	144		162		0	0	306	
00:45	1	14	2	14	0	0	3	28	**12:45**	170	637	157	644	0	0	327	1281
01:00	2		7		0	0	9		**13:00**	145		138		0	0	283	
01:15	2		1		0	0	3		**13:15**	133		158		0	0	291	
01:30	1		0		0	0	1		**13:30**	135		153		0	0	288	
01:45	3	8	4	12	0	0	7	20	**13:45**	156	569	145	594	0	0	301	1163
02:00	1		1		0	0	2		**14:00**	141		140		0	0	281	
02:15	0		3		0	0	3		**14:15**	157		151		0	0	308	
02:30	1		1		0	0	2		**14:30**	157		169		0	0	326	
02:45	4	6	3	8	0	0	7	14	**14:45**	165	620	163	623	0	0	328	1243
03:00	0		0		0	0			**15:00**	163		167		0	0	330	
03:15	3		4		0	0	7		**15:15**	162		172		0	0	334	
03:30	2		6		0	0	8		**15:30**	220		171		0	0	391	
03:45	3	8	7	17	0	0	10	25	**15:45**	162	707	163	673	0	0	325	1380
04:00	2		8		0	0	10		**16:00**	173		180		0	0	353	
04:15	2		8		0	0	10		**16:15**	162		165		0	0	327	
04:30	12		17		0	0	29		**16:30**	173		159		0	0	332	
04:45	12	28	7	40	0	0	19	68	**16:45**	140	648	148	652	0	0	288	1300
05:00	24		13		0	0	37		**17:00**	144		178		0	0	322	
05:15	17		18		0	0	35		**17:15**	145		163		0	0	308	
05:30	31		17		0	0	48		**17:30**	104		149		0	0	253	
05:45	31	103	43	91	0	0	74	194	**17:45**	104	497	95	585	0	0	199	1082
06:00	29		23		0	0	52		**18:00**	90		112		0	0	202	
06:15	39		39		0	0	78		**18:15**	85		104		0	0	189	
06:30	70		65		0	0	135		**18:30**	78		106		0	0	184	
06:45	72	210	91	218	0	0	163	428	**18:45**	80	333	87	409	0	0	167	742
07:00	79		73		0	0	152		**19:00**	66		73		0	0	139	
07:15	101		67		0	0	168		**19:15**	54		82		0	0	136	
07:30	141		100		0	0	241		**19:30**	65		85		0	0	150	
07:45	167	488	109	349	0	0	276	837	**19:45**	44	229	61	301	0	0	105	530
08:00	176		128		0	0	304		**20:00**	30		69		0	0	99	
08:15	153		138		0	0	291		**20:15**	36		70		0	0	106	
08:30	156		128		0	0	284		**20:30**	34		56		0	0	90	
08:45	170	655	129	523	0	0	299	1178	**20:45**	21	121	48	243	0	0	69	364
09:00	134		91		0	0	225		**21:00**	24		50		0	0	74	
09:15	128		106		0	0	234		**21:15**	28		32		0	0	60	
09:30	106		107		0	0	213		**21:30**	21		36		0	0	57	
09:45	137	505	135	439	0	0	272	944	**21:45**	26	99	24	142	0	0	50	241
10:00	143		110		0	0	253		**22:00**	25		28		0	0	53	
10:15	143		105		0	0	248		**22:15**	11		29		0	0	40	
10:30	133		106		0	0	239		**22:30**	17		27		0	0	44	
10:45	130	549	142	463	0	0	272	1012	**22:45**	13	66	15	99	0	0	28	165
11:00	154		116		0	0	270		**23:00**	8		16		0	0	24	
11:15	145		143		0	0	288		**23:15**	14		23		0	0	37	
11:30	176		124		0	0	300		**23:30**	5		12		0	0	17	
11:45	170	645	166	549	0	0	336	1194	**23:45**	4	31	12	63	0	0	16	94
TOTALS		3219		2723				**5942**	**TOTALS**		4557		5028				**9585**
SPLIT %		54.2%		45.8%				**38.3%**	**SPLIT %**		47.5%		52.5%				**61.7%**

DAILY TOTALS	NB	SB	EB	WB	Total
	7,776	7,751	0	0	15,527

AM Peak Hour	11:30	11:45					**11:45**	**PM Peak Hour**	15:15	15:15					**15:15**
AM Pk Volume	669	653					**1290**	**PM Pk Volume**	717	686					**1403**
Pk Hr Factor	0.950	0.933					**0.960**	**Pk Hr Factor**	0.815	0.953					**0.897**
7 - 9 Volume	1143	872	0	0			**2015**	**4 - 6 Volume**	1145	1237	0	0			**2382**
7 - 9 Peak Hour	08:00	08:00					**08:00**	**4 - 6 Peak Hour**	16:00	16:00					**16:00**
7 - 9 Pk Volume	655	523	0	0			**1178**	**4 - 6 Pk Volume**	648	652	0	0			**1300**
Pk Hr Factor	0.930	0.947	0.000	0.000			**0.969**	**Pk Hr Factor**	0.936	0.906	0.000	0.000			**0.921**

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Friday
Date: 9/6/2019

City: Grass Valley
Project #: CA19_7288_002n

North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	11	2	0	1	0	0	0	0	0	0	0	0	14
01:00	0	5	2	0	1	0	0	0	0	0	0	0	0	8
02:00	0	3	2	0	1	0	0	0	0	0	0	0	0	6
03:00	0	5	3	0	0	0	0	0	0	0	0	0	0	8
04:00	0	19	7	0	2	0	0	0	0	0	0	0	0	28
05:00	0	52	26	2	16	7	0	0	0	0	0	0	0	103
06:00	0	95	65	3	44	0	0	1	0	0	2	0	0	210
07:00	1	282	126	2	64	5	1	5	1	0	1	0	0	488
08:00	0	388	182	2	70	8	1	2	1	0	1	0	0	655
09:00	0	295	142	4	59	4	0	1	0	0	0	0	0	505
10:00	0	329	155	3	54	6	0	2	0	0	0	0	0	549
11:00	0	390	165	2	77	6	0	3	1	0	1	0	0	645
12:00 PM	1	404	171	2	44	10	1	3	1	0	0	0	0	637
13:00	0	345	145	3	60	10	2	3	1	0	0	0	0	569
14:00	0	371	180	4	50	9	2	3	1	0	0	0	0	620
15:00	0	416	209	3	65	9	1	3	0	0	1	0	0	707
16:00	0	389	190	4	58	3	0	2	1	0	1	0	0	648
17:00	0	336	123	0	33	2	0	3	0	0	0	0	0	497
18:00	0	210	92	2	25	0	0	4	0	0	0	0	0	333
19:00	0	154	59	0	16	0	0	0	0	0	0	0	0	229
20:00	0	75	35	0	11	0	0	0	0	0	0	0	0	121
21:00	0	70	24	0	3	1	0	0	0	0	1	0	0	99
22:00	0	45	17	0	4	0	0	0	0	0	0	0	0	66
23:00	0	19	7	0	5	0	0	0	0	0	0	0	0	31
Totals	2	4708	2129	36	763	80	8	35	7		8			7776
% of Totals	0%	61%	27%	0%	10%	1%	0%	0%	0%		0%			100%

AM Volumes	1	1874	877	18	389	36	2	14	3	0	5	0	0	3219
% AM	0%	24%	11%	0%	5%	0%	0%	0%	0%		0%			41%
AM Peak Hour	07:00	11:00	08:00	09:00	11:00	08:00	07:00	07:00	07:00		06:00			08:00
Volume	1	390	182	4	77	8	1	5	1		2			655
PM Volumes	1	2834	1252	18	374	44	6	21	4	0	3	0	0	4557
% PM	0%	36%	16%	0%	5%	1%	0%	0%	0%		0%			59%
PM Peak Hour	12:00	15:00	15:00	14:00	15:00	12:00	13:00	18:00	12:00		15:00			15:00
Volume	1	416	209	4	65	10	2	4	1		1			707

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	1143	15%	1206	16%	1145	15%	4282	55%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Friday
Date: 9/6/2019

City: Grass Valley
Project #: CA19_7288_002s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	11	2	0	1	0	0	0	0	0	0	0	0	14
01:00	0	7	5	0	0	0	0	0	0	0	0	0	0	12
02:00	0	5	3	0	0	0	0	0	0	0	0	0	0	8
03:00	0	11	4	0	1	0	0	0	0	0	1	0	0	17
04:00	0	24	14	0	2	0	0	0	0	0	0	0	0	40
05:00	0	40	38	0	10	1	0	0	2	0	0	0	0	91
06:00	0	116	80	0	18	2	0	1	1	0	0	0	0	218
07:00	0	230	94	3	20	0	0	0	1	0	1	0	0	349
08:00	0	360	116	4	39	3	0	1	0	0	0	0	0	523
09:00	0	285	123	3	25	0	0	1	1	0	1	0	0	439
10:00	0	284	136	1	36	3	0	3	0	0	0	0	0	463
11:00	0	346	155	2	40	2	0	4	0	0	0	0	0	549
12:00 PM	0	420	169	2	43	1	0	8	1	0	0	0	0	644
13:00	0	415	130	1	42	2	0	4	0	0	0	0	0	594
14:00	0	394	167	4	52	4	1	0	1	0	0	0	0	623
15:00	0	449	148	2	69	3	0	2	0	0	0	0	0	673
16:00	0	435	164	3	45	4	0	1	0	0	0	0	0	652
17:00	0	424	125	0	35	0	0	0	1	0	0	0	0	585
18:00	0	307	83	0	18	1	0	0	0	0	0	0	0	409
19:00	0	229	59	0	13	0	0	0	0	0	0	0	0	301
20:00	0	195	38	1	9	0	0	0	0	0	0	0	0	243
21:00	0	110	27	1	2	0	0	2	0	0	0	0	0	142
22:00	0	79	17	0	2	0	0	1	0	0	0	0	0	99
23:00	0	51	12	0	0	0	0	0	0	0	0	0	0	63
Totals		**5227**	**1909**	**27**	**522**	**26**	**1**	**28**	**8**		**3**			**7751**
% of Totals		67%	25%	0%	7%	0%	0%	0%	0%		0%			100%

AM Volumes	0	1719	770	13	192	11	0	10	5	0	3	0	0	2723
% AM		22%	10%	0%	2%	0%		0%	0%		0%			35%
AM Peak Hour		08:00	11:00	08:00	11:00	08:00		11:00	05:00		03:00			11:00
Volume		360	155	4	40	3		4	2		1			549
PM Volumes	0	3508	1139	14	330	15	1	18	3	0	0	0	0	5028
% PM		45%	15%	0%	4%	0%	0%	0%	0%					65%
PM Peak Hour		15:00	12:00	14:00	15:00	14:00	14:00	12:00	12:00					15:00
Volume		449	169	4	69	4	1	8	1					673

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	872		11%	1238		16%	1237		16%	4404		57%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Friday
Date: 9/6/2019

City: Grass Valley
Project #: CA19_7288_002

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	22	4	0	2	0	0	0	0	0	0	0	0	**28**
01:00	0	12	7	0	1	0	0	0	0	0	0	0	0	**20**
02:00	0	8	5	0	1	0	0	0	0	0	0	0	0	**14**
03:00	0	16	7	0	1	0	0	0	0	0	1	0	0	**25**
04:00	0	43	21	0	4	0	0	0	0	0	0	0	0	**68**
05:00	0	92	64	2	26	8	0	0	2	0	0	0	0	**194**
06:00	0	211	145	3	62	2	0	2	1	0	2	0	0	**428**
07:00	1	512	220	5	84	5	1	5	2	0	2	0	0	**837**
08:00	0	748	298	6	109	11	1	3	1	0	1	0	0	**1178**
09:00	0	580	265	7	84	4	0	2	1	0	1	0	0	**944**
10:00	0	613	291	4	90	9	0	5	0	0	0	0	0	**1012**
11:00	0	736	320	4	117	8	0	7	1	0	1	0	0	**1194**
12:00 PM	1	824	340	4	87	11	1	11	2	0	0	0	0	**1281**
13:00	0	760	275	4	102	12	2	7	1	0	0	0	0	**1163**
14:00	0	765	347	8	102	13	3	3	2	0	0	0	0	**1243**
15:00	0	865	357	5	134	12	1	5	0	0	1	0	0	**1380**
16:00	0	824	354	7	103	7	0	3	1	0	1	0	0	**1300**
17:00	0	760	248	0	68	2	0	3	1	0	0	0	0	**1082**
18:00	0	517	175	2	43	1	0	4	0	0	0	0	0	**742**
19:00	0	383	118	0	29	0	0	0	0	0	0	0	0	**530**
20:00	0	270	73	1	20	0	0	0	0	0	0	0	0	**364**
21:00	0	180	51	1	5	1	0	2	0	0	1	0	0	**241**
22:00	0	124	34	0	6	0	0	1	0	0	0	0	0	**165**
23:00	0	70	19	0	5	0	0	0	0	0	0	0	0	**94**
Totals	**2**	**9935**	**4038**	**63**	**1285**	**106**	**9**	**63**	**15**		**11**			**15527**
% of Totals	0%	64%	26%	0%	8%	1%	0%	0%	0%		0%			100%

AM Volumes	1	3593	1647	31	581	47	2	24	8	0	8	0	0	5942
% AM	0%	23%	11%	0%	4%	0%	0%	0%	0%		0%			38%
AM Peak Hour	07:00	08:00	11:00	09:00	11:00	08:00	07:00	11:00	05:00		06:00			11:00
Volume	1	748	320	7	117	11	1	7	2		2			1194
PM Volumes	1	6342	2391	32	704	59	7	39	7	0	3	0	0	9585
% PM	0%	41%	15%	0%	5%	0%	0%	0%	0%		0%			62%
PM Peak Hour	12:00	15:00	15:00	14:00	15:00	14:00	14:00	12:00	12:00		15:00			15:00
Volume	1	865	357	8	134	13	3	11	2		1			1380

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	2015		13%	2444		16%	2382		15%	8686		56%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Saturday
Date: 9/7/2019

City: Grass Valley
Project #: CA19_7288_002

DAILY TOTALS	NB	SB	EB	WB	Total
	4,959	4,779	0	0	9,738

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	4		8		0	0	12		**12:00**	108		97		0	0	205	
00:15	0		7		0	0	7		**12:15**	141		103		0	0	244	
00:30	7		12		0	0	19		**12:30**	141		89		0	0	230	
00:45	2	13	5	32	0	0	7	45	**12:45**	112	502	110	399	0	0	222	901
01:00	2		6		0	0	8		**13:00**	86		93		0	0	179	
01:15	3		7		0	0	10		**13:15**	109		102		0	0	211	
01:30	6		7		0	0	13		**13:30**	109		111		0	0	220	
01:45	4	15	6	26	0	0	10	41	**13:45**	94	398	123	429	0	0	217	827
02:00	4		9		0	0	13		**14:00**	101		93		0	0	194	
02:15	2		4		0	0	6		**14:15**	97		121		0	0	218	
02:30	1		3		0	0	4		**14:30**	100		106		0	0	206	
02:45	3	10	3	19	0	0	6	29	**14:45**	116	414	82	402	0	0	198	816
03:00	2		1		0	0	3		**15:00**	90		104		0	0	194	
03:15	2		1		0	0	3		**15:15**	106		101		0	0	207	
03:30	3		0		0	0	3		**15:30**	91		95		0	0	186	
03:45	1	8	1	3	0	0	2	11	**15:45**	120	407	78	378	0	0	198	785
04:00	2		1		0	0	3		**16:00**	101		104		0	0	205	
04:15	2		0		0	0	2		**16:15**	93		91		0	0	184	
04:30	2		2		0	0	4		**16:30**	77		88		0	0	165	
04:45	10	16	4	7	0	0	14	23	**16:45**	77	348	93	376	0	0	170	724
05:00	4		2		0	0	6		**17:00**	82		95		0	0	177	
05:15	8		6		0	0	14		**17:15**	87		88		0	0	175	
05:30	7		20		0	0	27		**17:30**	86		80		0	0	166	
05:45	13	32	26	54	0	0	39	86	**17:45**	85	340	66	329	0	0	151	669
06:00	12		6		0	0	18		**18:00**	88		69		0	0	157	
06:15	20		13		0	0	33		**18:15**	71		53		0	0	124	
06:30	18		21		0	0	39		**18:30**	59		64		0	0	123	
06:45	31	81	25	65	0	0	56	146	**18:45**	77	295	46	232	0	0	123	527
07:00	31		18		0	0	49		**19:00**	50		70		0	0	120	
07:15	52		23		0	0	75		**19:15**	41		51		0	0	92	
07:30	55		31		0	0	86		**19:30**	28		56		0	0	84	
07:45	65	203	32	104	0	0	97	307	**19:45**	26	145	47	224	0	0	73	369
08:00	64		33		0	0	97		**20:00**	33		39		0	0	72	
08:15	64		44		0	0	108		**20:15**	36		49		0	0	85	
08:30	82		49		0	0	131		**20:30**	39		49		0	0	88	
08:45	98	308	65	191	0	0	163	499	**20:45**	28	136	41	178	0	0	69	314
09:00	67		52		0	0	119		**21:00**	19		37		0	0	56	
09:15	82		78		0	0	160		**21:15**	15		50		0	0	65	
09:30	80		78		0	0	158		**21:30**	22		29		0	0	51	
09:45	119	348	84	292	0	0	203	640	**21:45**	23	79	23	139	0	0	46	218
10:00	94		66		0	0	160		**22:00**	17		26		0	0	43	
10:15	84		93		0	0	177		**22:15**	25		21		0	0	46	
10:30	68		103		0	0	171		**22:30**	11		20		0	0	31	
10:45	88	334	88	350	0	0	176	684	**22:45**	18	71	6	73	0	0	24	144
11:00	106		95		0	0	201		**23:00**	12		23		0	0	35	
11:15	92		98		0	0	190		**23:15**	11		16		0	0	27	
11:30	99		102		0	0	201		**23:30**	9		10		0	0	19	
11:45	123	420	119	414	0	0	242	834	**23:45**	4	36	14	63	0	0	18	99
TOTALS		1788		1557				**3345**	**TOTALS**		3171		3222				**6393**
SPLIT %		53.5%		46.5%				**34.3%**	**SPLIT %**		49.6%		50.4%				**65.7%**

DAILY TOTALS	NB	SB	EB	WB	Total
	4,959	4,779	0	0	9,738

AM Peak Hour	11:45	11:30				**11:45**	**PM Peak Hour**	12:00	13:30				**12:00**
AM Pk Volume	513	421				**921**	**PM Pk Volume**	502	448				**901**
Pk Hr Factor	0.910	0.884				**0.944**	**Pk Hr Factor**	0.890	0.911				**0.923**
7 - 9 Volume	511	295	0	0		**806**	**4 - 6 Volume**	688	705	0	0		**1393**
7 - 9 Peak Hour	08:00	08:00				**08:00**	**4 - 6 Peak Hour**	16:00	16:00				**16:00**
7 - 9 Pk Volume	308	191	0	0		**499**	**4 - 6 Pk Volume**	348	376	0	0		**724**
Pk Hr Factor	0.786	0.735	0.000	0.000		**0.765**	**Pk Hr Factor**	0.861	0.904	0.000	0.000		**0.883**

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Saturday
Date: 9/7/2019

City: Grass Valley
Project #: CA19_7288_002n

North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	7	5	0	1	0	0	0	0	0	0	0	0	13
01:00	0	12	2	0	1	0	0	0	0	0	0	0	0	15
02:00	0	6	3	0	1	0	0	0	0	0	0	0	0	10
03:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
04:00	0	8	5	0	3	0	0	0	0	0	0	0	0	16
05:00	0	21	10	0	1	0	0	0	0	0	0	0	0	32
06:00	0	49	17	0	14	0	0	1	0	0	0	0	0	81
07:00	0	112	53	0	38	0	0	0	0	0	0	0	0	203
08:00	0	201	80	0	27	0	0	0	0	0	0	0	0	308
09:00	0	200	109	0	39	0	0	0	0	0	0	0	0	348
10:00	0	217	89	0	27	0	0	1	0	0	0	0	0	334
11:00	0	278	110	0	29	0	0	3	0	0	0	0	0	420
12:00 PM	0	337	129	0	36	0	0	0	0	0	0	0	0	502
13:00	0	258	106	1	31	0	0	2	0	0	0	0	0	398
14:00	0	266	112	2	33	0	0	1	0	0	0	0	0	414
15:00	1	276	103	1	26	0	0	0	0	0	0	0	0	407
16:00	0	248	83	0	16	0	0	1	0	0	0	0	0	348
17:00	1	231	81	0	24	0	0	3	0	0	0	0	0	340
18:00	1	207	67	1	19	0	0	0	0	0	0	0	0	295
19:00	0	100	35	0	10	0	0	0	0	0	0	0	0	145
20:00	0	96	34	1	5	0	0	0	0	0	0	0	0	136
21:00	0	61	17	0	1	0	0	0	0	0	0	0	0	79
22:00	0	53	16	0	2	0	0	0	0	0	0	0	0	71
23:00	0	29	6	0	1	0	0	0	0	0	0	0	0	36
Totals	**3**	**3280**	**1273**	**6**	**385**			**12**						**4959**
% of Totals	0%	66%	26%	0%	8%			0%						100%

AM Volumes	0	1118	484	0	181	0	0	5	0	0	0	0	0	1788
% AM		23%	10%		4%			0%						36%
AM Peak Hour		11:00	11:00		09:00			11:00						11:00
Volume		278	110		39			3						420
PM Volumes	3	2162	789	6	204	0	0	7	0	0	0	0	0	3171
% PM	0%	44%	16%	0%	4%			0%						64%
PM Peak Hour	15:00	12:00	12:00	14:00	12:00			17:00						12:00
Volume	1	337	129	2	36			3						502

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	511		10%	900		18%	688		14%	2860		58%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Saturday
Date: 9/7/2019

City: Grass Valley
Project #: CA19_7288_002s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	24	8	0	0	0	0	0	0	0	0	0	0	32
01:00	0	22	4	0	0	0	0	0	0	0	0	0	0	26
02:00	0	16	3	0	0	0	0	0	0	0	0	0	0	19
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	3	2	0	1	0	0	0	1	0	0	0	0	7
05:00	0	16	29	0	9	0	0	0	0	0	0	0	0	54
06:00	0	38	21	1	2	2	0	0	0	0	1	0	0	65
07:00	0	63	32	0	9	0	0	0	0	0	0	0	0	104
08:00	0	130	45	1	12	1	0	1	0	0	1	0	0	191
09:00	0	199	70	2	21	0	0	0	0	0	0	0	0	292
10:00	0	250	82	0	18	0	0	0	0	0	0	0	0	350
11:00	1	293	91	0	26	0	0	2	1	0	0	0	0	414
12:00 PM	0	293	85	0	21	0	0	0	0	0	0	0	0	399
13:00	0	307	107	0	15	0	0	0	0	0	0	0	0	429
14:00	0	270	103	1	26	0	0	2	0	0	0	0	0	402
15:00	0	291	76	0	11	0	0	0	0	0	0	0	0	378
16:00	0	275	87	1	10	1	0	2	0	0	0	0	0	376
17:00	0	245	72	1	11	0	0	0	0	0	0	0	0	329
18:00	0	181	45	0	6	0	0	0	0	0	0	0	0	232
19:00	0	183	40	0	1	0	0	0	0	0	0	0	0	224
20:00	0	150	26	0	2	0	0	0	0	0	0	0	0	178
21:00	0	114	22	0	2	0	0	0	1	0	0	0	0	139
22:00	0	62	11	0	0	0	0	0	0	0	0	0	0	73
23:00	0	47	15	0	1	0	0	0	0	0	0	0	0	63
Totals	**1**	**3475**	**1076**	**7**	**204**	**4**		**7**	**3**		**2**			**4779**
% of Totals	0%	73%	23%	0%	4%	0%		0%	0%		0%			100%

AM Volumes	1	1057	387	4	98	3	0	3	2	0	2	0	0	1557
% AM	0%	22%	8%	0%	2%	0%		0%	0%		0%			33%
AM Peak Hour	11:00	11:00	11:00	09:00	11:00	06:00		11:00	04:00		06:00			11:00
Volume	1	293	91	2	26	2		2	1		1			414
PM Volumes	0	2418	689	3	106	1	0	4	1	0	0	0	0	3222
% PM		51%	14%	0%	2%	0%		0%	0%					67%
PM Peak Hour		13:00	13:00	14:00	14:00	16:00		14:00	21:00					13:00
Volume		307	107	1	26	1		2	1					429

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	295	6%	828	17%	705	15%	2951	62%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Saturday
Date: 9/7/2019

City: Grass Valley
Project #: CA19_7288_002

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	31	13	0	1	0	0	0	0	0	0	0	0	45
01:00	0	34	6	0	1	0	0	0	0	0	0	0	0	41
02:00	0	22	6	0	1	0	0	0	0	0	0	0	0	29
03:00	0	10	1	0	0	0	0	0	0	0	0	0	0	11
04:00	0	11	7	0	4	0	0	0	1	0	0	0	0	23
05:00	0	37	39	0	10	0	0	0	0	0	0	0	0	86
06:00	0	87	38	1	16	2	0	1	0	0	1	0	0	146
07:00	0	175	85	0	47	0	0	0	0	0	0	0	0	307
08:00	0	331	125	1	39	1	0	1	0	0	1	0	0	499
09:00	0	399	179	2	60	0	0	0	0	0	0	0	0	640
10:00	0	467	171	0	45	0	0	1	0	0	0	0	0	684
11:00	1	571	201	0	55	0	0	5	1	0	0	0	0	834
12:00 PM	0	630	214	0	57	0	0	0	0	0	0	0	0	901
13:00	0	565	213	1	46	0	0	2	0	0	0	0	0	827
14:00	0	536	215	3	59	0	0	3	0	0	0	0	0	816
15:00	1	567	179	1	37	0	0	0	0	0	0	0	0	785
16:00	0	523	170	1	26	1	0	3	0	0	0	0	0	724
17:00	1	476	153	1	35	0	0	3	0	0	0	0	0	669
18:00	1	388	112	1	25	0	0	0	0	0	0	0	0	527
19:00	0	283	75	0	11	0	0	0	0	0	0	0	0	369
20:00	0	246	60	1	7	0	0	0	0	0	0	0	0	314
21:00	0	175	39	0	3	0	0	0	1	0	0	0	0	218
22:00	0	115	27	0	2	0	0	0	0	0	0	0	0	144
23:00	0	76	21	0	2	0	0	0	0	0	0	0	0	99
Totals	**4**	**6755**	**2349**	**13**	**589**	**4**		**19**	**3**		**2**			**9738**
% of Totals	0%	69%	24%	0%	6%	0%		0%	0%		0%			100%

AM Volumes	1	2175	871	4	279	3	0	8	2	0	2	0	0	3345
% AM	0%	22%	9%	0%	3%	0%		0%	0%		0%			34%
AM Peak Hour	11:00	11:00	11:00	09:00	09:00	06:00		11:00	04:00		06:00			11:00
Volume	1	571	201	2	60	2		5	1		1			834
PM Volumes	3	4580	1478	9	310	1	0	11	1	0	0	0	0	6393
% PM	0%	47%	15%	0%	3%	0%		0%	0%					66%
PM Peak Hour	15:00	12:00	14:00	14:00	14:00	16:00		14:00	21:00					12:00
Volume	1	630	215	3	59	1		3	1					901

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	806	8%	1728	18%	1393	14%	5811	60%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Sunday
Date: 9/8/2019

City: Grass Valley
Project #: CA19_7288_002

DAILY TOTALS	NB	SB	EB	WB	Total
	3,816	3,768	0	0	7,584

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	11		8		0	0	19		**12:00**	98		69		0	0	167	
00:15	9		14		0	0	23		**12:15**	102		93		0	0	195	
00:30	7		7		0	0	14		**12:30**	96		95		0	0	191	
00:45	5	32	3	32	0	0	8	64	**12:45**	91	387	89	346	0	0	180	733
01:00	6		3		0	0	9		**13:00**	85		93		0	0	178	
01:15	2		3		0	0	5		**13:15**	78		81		0	0	159	
01:30	0		6		0	0	6		**13:30**	84		84		0	0	168	
01:45	3	11	3	15	0	0	6	26	**13:45**	75	322	99	357	0	0	174	679
02:00	5		2		0	0	7		**14:00**	87		84		0	0	171	
02:15	1		3		0	0	4		**14:15**	60		86		0	0	146	
02:30	1		6		0	0	7		**14:30**	85		86		0	0	171	
02:45	1	8	1	12	0	0	2	20	**14:45**	78	310	85	341	0	0	163	651
03:00	2		2		0	0	4		**15:00**	89		71		0	0	160	
03:15	1		3		0	0	4		**15:15**	78		80		0	0	158	
03:30	4		1		0	0	5		**15:30**	66		83		0	0	149	
03:45	3	10	1	7	0	0	4	17	**15:45**	67	300	79	313	0	0	146	613
04:00	2		3		0	0	5		**16:00**	72		83		0	0	155	
04:15	1		2		0	0	3		**16:15**	74		80		0	0	154	
04:30	2		0		0	0	2		**16:30**	65		86		0	0	151	
04:45	6	11	5	10	0	0	11	21	**16:45**	78	289	93	342	0	0	171	631
05:00	2		0		0	0	2		**17:00**	66		86		0	0	152	
05:15	2		0		0	0	2		**17:15**	66		77		0	0	143	
05:30	5		3		0	0	8		**17:30**	69		65		0	0	134	
05:45	7	16	2	5	0	0	9	21	**17:45**	76	277	51	279	0	0	127	556
06:00	6		2		0	0	8		**18:00**	59		57		0	0	116	
06:15	13		8		0	0	21		**18:15**	67		63		0	0	130	
06:30	16		14		0	0	30		**18:30**	47		52		0	0	99	
06:45	30	65	12	36	0	0	42	101	**18:45**	40	213	44	216	0	0	84	429
07:00	17		10		0	0	27		**19:00**	37		56		0	0	93	
07:15	20		14		0	0	34		**19:15**	32		68		0	0	100	
07:30	31		28		0	0	59		**19:30**	37		45		0	0	82	
07:45	34	102	23	75	0	0	57	177	**19:45**	31	137	50	219	0	0	81	356
08:00	36		23		0	0	59		**20:00**	27		47		0	0	74	
08:15	31		29		0	0	60		**20:15**	22		40		0	0	62	
08:30	51		17		0	0	68		**20:30**	29		39		0	0	68	
08:45	68	186	27	96	0	0	95	282	**20:45**	20	98	25	151	0	0	45	249
09:00	65		34		0	0	99		**21:00**	18		34		0	0	52	
09:15	71		36		0	0	107		**21:15**	17		24		0	0	41	
09:30	65		55		0	0	120		**21:30**	17		22		0	0	39	
09:45	74	275	59	184	0	0	133	459	**21:45**	16	68	18	98	0	0	34	166
10:00	66		64		0	0	130		**22:00**	11		21		0	0	32	
10:15	85		51		0	0	136		**22:15**	12		10		0	0	22	
10:30	90		59		0	0	149		**22:30**	7		17		0	0	24	
10:45	74	315	57	231	0	0	131	546	**22:45**	12	42	11	59	0	0	23	101
11:00	83		74		0	0	157		**23:00**	10		9		0	0	19	
11:15	63		67		0	0	130		**23:15**	6		7		0	0	13	
11:30	75		88		0	0	163		**23:30**	2		6		0	0	8	
11:45	99	320	88	317	0	0	187	637	**23:45**	4	22	5	27	0	0	9	49
TOTALS		1351		1020				**2371**	**TOTALS**		2465		2748				**5213**
SPLIT %		57.0%		43.0%				**31.3%**	**SPLIT %**		47.3%		52.7%				**68.7%**

DAILY TOTALS	NB	SB	EB	WB	Total
	3,816	3,768	0	0	7,584

AM Peak Hour	11:45		11:45					**11:45**	**PM Peak Hour**	12:00		12:15					**12:15**
AM Pk Volume	395		345					**740**	**PM Pk Volume**	387		370					**744**
Pk Hr Factor	0.968		0.908					**0.949**	**Pk Hr Factor**	0.949		0.974					**0.954**
7 - 9 Volume	288		171		0	0		**459**	**4 - 6 Volume**	566		621		0	0		**1187**
7 - 9 Peak Hour	08:00		07:30					**08:00**	**4 - 6 Peak Hour**	16:00		16:15					**16:00**
7 - 9 Pk Volume	186		103		0	0		**282**	**4 - 6 Pk Volume**	289		345		0	0		**631**
Pk Hr Factor	0.684		0.888		0.000	0.000		**0.742**	**Pk Hr Factor**	0.926		0.927		0.000	0.000		**0.923**

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Sunday
Date: 9/8/2019

City: Grass Valley
Project #: CA19_7288_002n

North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	22	8	0	2	0	0	0	0	0	0	0	0	32
01:00	0	7	3	0	1	0	0	0	0	0	0	0	0	11
02:00	0	5	3	0	0	0	0	0	0	0	0	0	0	8
03:00	0	8	2	0	0	0	0	0	0	0	0	0	0	10
04:00	0	8	3	0	0	0	0	0	0	0	0	0	0	11
05:00	0	13	2	0	1	0	0	0	0	0	0	0	0	16
06:00	0	45	13	0	6	0	0	1	0	0	0	0	0	65
07:00	0	63	34	0	5	0	0	0	0	0	0	0	0	102
08:00	0	122	44	0	18	0	0	2	0	0	0	0	0	186
09:00	0	190	69	0	16	0	0	0	0	0	0	0	0	275
10:00	0	203	93	0	18	0	0	1	0	0	0	0	0	315
11:00	0	216	81	1	22	0	0	0	0	0	0	0	0	320
12:00 PM	0	272	96	0	18	0	0	1	0	0	0	0	0	387
13:00	0	214	97	0	11	0	0	0	0	0	0	0	0	322
14:00	0	206	86	0	17	0	0	1	0	0	0	0	0	310
15:00	0	209	72	1	18	0	0	0	0	0	0	0	0	300
16:00	0	211	63	0	13	0	0	2	0	0	0	0	0	289
17:00	0	186	72	0	17	0	0	2	0	0	0	0	0	277
18:00	0	148	49	0	15	0	0	1	0	0	0	0	0	213
19:00	0	103	27	0	6	0	0	1	0	0	0	0	0	137
20:00	0	69	25	0	4	0	0	0	0	0	0	0	0	98
21:00	0	48	17	0	3	0	0	0	0	0	0	0	0	68
22:00	0	29	12	0	1	0	0	0	0	0	0	0	0	42
23:00	0	15	7	0	0	0	0	0	0	0	0	0	0	22
Totals		**2612**	**978**	**2**	**212**			**12**						**3816**
% of Totals		68%	26%	0%	6%			0%						100%

AM Volumes	0	902	355	1	89	0	0	4	0	0	0	0	0	1351
% AM		24%	9%	0%	2%			0%						35%
AM Peak Hour		11:00	10:00	11:00	11:00			08:00						11:00
Volume		216	93	1	22			2						320
PM Volumes	0	1710	623	1	123	0	0	8	0	0	0	0	0	2465
% PM		45%	16%	0%	3%			0%						65%
PM Peak Hour		12:00	13:00	15:00	12:00			16:00						12:00
Volume		272	97	1	18			2						387

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	288		8%	709		19%	566		15%	2253		59%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Sunday
Date: 9/8/2019

City: Grass Valley
Project #: CA19_7288_002s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	24	8	0	0	0	0	0	0	0	0	0	0	32
01:00	0	15	0	0	0	0	0	0	0	0	0	0	0	15
02:00	0	9	3	0	0	0	0	0	0	0	0	0	0	12
03:00	0	5	2	0	0	0	0	0	0	0	0	0	0	7
04:00	0	6	4	0	0	0	0	0	0	0	0	0	0	10
05:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
06:00	0	23	12	0	1	0	0	0	0	0	0	0	0	36
07:00	0	48	24	0	2	0	0	0	1	0	0	0	0	75
08:00	0	76	19	0	1	0	0	0	0	0	0	0	0	96
09:00	0	137	41	1	4	0	0	1	0	0	0	0	0	184
10:00	0	164	56	2	8	0	0	1	0	0	0	0	0	231
11:00	0	233	71	0	12	0	0	1	0	0	0	0	0	317
12:00 PM	0	246	88	0	11	0	0	1	0	0	0	0	0	346
13:00	0	273	72	1	8	1	0	2	0	0	0	0	0	357
14:00	0	275	57	0	9	0	0	0	0	0	0	0	0	341
15:00	0	246	57	1	6	0	0	2	1	0	0	0	0	313
16:00	0	244	87	2	9	0	0	0	0	0	0	0	0	342
17:00	0	213	57	0	7	0	0	2	0	0	0	0	0	279
18:00	0	165	45	0	4	0	0	2	0	0	0	0	0	216
19:00	0	174	35	0	9	0	0	0	1	0	0	0	0	219
20:00	0	121	28	0	1	0	0	1	0	0	0	0	0	151
21:00	0	78	17	0	1	0	0	1	1	0	0	0	0	98
22:00	0	49	9	1	0	0	0	0	0	0	0	0	0	59
23:00	0	20	4	0	3	0	0	0	0	0	0	0	0	27
Totals		**2849**	**796**	**8**	**96**	**1**		**14**	**4**					**3768**
% of Totals		76%	21%	0%	3%	0%		0%	0%					100%

AM Volumes	0	745	240	3	28	0	0	3	1	0	0	0	0	1020
% AM		20%	6%	0%	1%			0%	0%					27%
AM Peak Hour		11:00	11:00	10:00	11:00			09:00	07:00					11:00
Volume		233	71	2	12			1	1					317
PM Volumes	0	2104	556	5	68	1	0	11	3	0	0	0	0	2748
% PM		56%	15%	0%	2%	0%		0%	0%					73%
PM Peak Hour		14:00	12:00	16:00	12:00	13:00		13:00	15:00					13:00
Volume		275	88	2	11	1		2	1					357

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	171		5%	703		19%	621		16%	2273		60%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Sunday
Date: 9/8/2019

City: Grass Valley
Project #: CA19_7288_002

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	46	16	0	2	0	0	0	0	0	0	0	0	64
01:00	0	22	3	0	1	0	0	0	0	0	0	0	0	26
02:00	0	14	6	0	0	0	0	0	0	0	0	0	0	20
03:00	0	13	4	0	0	0	0	0	0	0	0	0	0	17
04:00	0	14	7	0	0	0	0	0	0	0	0	0	0	21
05:00	0	18	2	0	1	0	0	0	0	0	0	0	0	21
06:00	0	68	25	0	7	0	0	1	0	0	0	0	0	101
07:00	0	111	58	0	7	0	0	0	1	0	0	0	0	177
08:00	0	198	63	0	19	0	0	2	0	0	0	0	0	282
09:00	0	327	110	1	20	0	0	1	0	0	0	0	0	459
10:00	0	367	149	2	26	0	0	2	0	0	0	0	0	546
11:00	0	449	152	1	34	0	0	1	0	0	0	0	0	637
12:00 PM	0	518	184	0	29	0	0	2	0	0	0	0	0	733
13:00	0	487	169	1	19	1	0	2	0	0	0	0	0	679
14:00	0	481	143	0	26	0	0	1	0	0	0	0	0	651
15:00	0	455	129	2	24	0	0	2	1	0	0	0	0	613
16:00	0	455	150	2	22	0	0	2	0	0	0	0	0	631
17:00	0	399	129	0	24	0	0	4	0	0	0	0	0	556
18:00	0	313	94	0	19	0	0	3	0	0	0	0	0	429
19:00	0	277	62	0	15	0	0	1	1	0	0	0	0	356
20:00	0	190	53	0	5	0	0	1	0	0	0	0	0	249
21:00	0	126	34	0	4	0	0	1	1	0	0	0	0	166
22:00	0	78	21	1	1	0	0	0	0	0	0	0	0	101
23:00	0	35	11	0	3	0	0	0	0	0	0	0	0	49
Totals		5461	1774	10	308	1		26	4					7584
% of Totals		72%	23%	0%	4%	0%		0%	0%					100%

AM Volumes	0	1647	595	4	117	0	0	7	1	0	0	0	0	2371
% AM		22%	8%	0%	2%			0%	0%					31%
AM Peak Hour		11:00	11:00	10:00	11:00			08:00	07:00					11:00
Volume		449	152	2	34			2	1					637
PM Volumes	0	3814	1179	6	191	1	0	19	3	0	0	0	0	5213
% PM		50%	16%	0%	3%	0%		0%	0%					69%
PM Peak Hour		12:00	12:00	15:00	12:00	13:00		17:00	15:00					12:00
Volume		518	184	2	29	1		4	1					733

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	459	6%	1412	19%	1187	16%	4526	60%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Monday
Date: 9/9/2019

City: Grass Valley
Project #: CA19_7288_002

DAILY TOTALS	NB	SB	EB	WB	Total
	7,335	7,460	0	0	14,795

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	5		1		0	0	6		**12:00**	151		143		0	0	294	
00:15	0		4		0	0	4		**12:15**	124		160		0	0	284	
00:30	3		2		0	0	5		**12:30**	142		139		0	0	281	
00:45	2	10	3	10	0	0	5	20	**12:45**	133	550	133	575	0	0	266	1125
01:00	0		5		0	0	5		**13:00**	141		132		0	0	273	
01:15	2		4		0	0	6		**13:15**	150		114		0	0	264	
01:30	4		2		0	0	6		**13:30**	138		144		0	0	282	
01:45	4	10	3	14	0	0	7	24	**13:45**	135	564	144	534	0	0	279	1098
02:00	2		1		0	0	3		**14:00**	132		142		0	0	274	
02:15	0		1		0	0	1		**14:15**	155		133		0	0	288	
02:30	2		3		0	0	5		**14:30**	131		161		0	0	292	
02:45	2	6	2	7	0	0	4	13	**14:45**	139	557	145	581	0	0	284	1138
03:00	3		2		0	0	5		**15:00**	124		171		0	0	295	
03:15	4		1		0	0	5		**15:15**	125		136		0	0	261	
03:30	6		3		0	0	9		**15:30**	186		164		0	0	350	
03:45	5	18	7	13	0	0	12	31	**15:45**	177	612	171	642	0	0	348	1254
04:00	0		6		0	0	6		**16:00**	182		155		0	0	337	
04:15	0		8		0	0	8		**16:15**	161		164		0	0	325	
04:30	10		14		0	0	24		**16:30**	205		168		0	0	373	
04:45	11	21	10	38	0	0	21	59	**16:45**	155	703	179	666	0	0	334	1369
05:00	13		14		0	0	27		**17:00**	160		188		0	0	348	
05:15	27		22		0	0	49		**17:15**	125		175		0	0	300	
05:30	22		35		0	0	57		**17:30**	108		159		0	0	267	
05:45	35	97	44	115	0	0	79	212	**17:45**	108	501	131	653	0	0	239	1154
06:00	22		24		0	0	46		**18:00**	97		96		0	0	193	
06:15	49		45		0	0	94		**18:15**	100		94		0	0	194	
06:30	58		53		0	0	111		**18:30**	66		118		0	0	184	
06:45	107	236	112	234	0	0	219	470	**18:45**	65	328	112	420	0	0	177	748
07:00	71		78		0	0	149		**19:00**	48		82		0	0	130	
07:15	82		73		0	0	155		**19:15**	58		90		0	0	148	
07:30	119		82		0	0	201		**19:30**	57		65		0	0	122	
07:45	166	438	125	358	0	0	291	796	**19:45**	55	218	51	288	0	0	106	506
08:00	127		116		0	0	243		**20:00**	38		44		0	0	82	
08:15	150		138		0	0	288		**20:15**	26		56		0	0	82	
08:30	164		120		0	0	284		**20:30**	36		51		0	0	87	
08:45	170	611	115	489	0	0	285	1100	**20:45**	32	132	42	193	0	0	74	325
09:00	135		105		0	0	240		**21:00**	21		36		0	0	57	
09:15	121		118		0	0	239		**21:15**	25		24		0	0	49	
09:30	128		110		0	0	238		**21:30**	11		26		0	0	37	
09:45	121	505	110	443	0	0	231	948	**21:45**	14	71	25	111	0	0	39	182
10:00	127		133		0	0	260		**22:00**	13		20		0	0	33	
10:15	146		101		0	0	247		**22:15**	12		18		0	0	30	
10:30	116		116		0	0	232		**22:30**	10		11		0	0	21	
10:45	138	527	108	458	0	0	246	985	**22:45**	10	45	10	59	0	0	20	104
11:00	124		121		0	0	245		**23:00**	8		8		0	0	16	
11:15	141		128		0	0	269		**23:15**	3		14		0	0	17	
11:30	116		127		0	0	243		**23:30**	3		9		0	0	12	
11:45	172	553	143	519	0	0	315	1072	**23:45**	8	22	9	40	0	0	17	62
TOTALS		3032		2698				**5730**	**TOTALS**		4303		4762				**9065**
SPLIT %		52.9%		47.1%				**38.7%**	**SPLIT %**		47.5%		52.5%				**61.3%**

DAILY TOTALS	NB	SB	EB	WB	Total
	7,335	7,460	0	0	14,795

AM Peak Hour	08:15	11:45					**11:45**	**PM Peak Hour**	15:45	16:30					**15:45**
AM Pk Volume	619	585					**1174**	**PM Pk Volume**	725	710					**1383**
Pk Hr Factor	0.910	0.914					**0.932**	**Pk Hr Factor**	0.884	0.944					**0.927**
7 - 9 Volume	1049	847	0	0			**1896**	**4 - 6 Volume**	1204	1319	0	0			**2523**
7 - 9 Peak Hour	08:00	07:45					**07:45**	**4 - 6 Peak Hour**	16:00	16:30					**16:15**
7 - 9 Pk Volume	611	499	0	0			**1106**	**4 - 6 Pk Volume**	703	710	0	0			**1380**
Pk Hr Factor	0.899	0.904	0.000	0.000			**0.950**	**Pk Hr Factor**	0.857	0.944	0.000	0.000			**0.925**

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Monday
Date: 9/9/2019

City: Grass Valley
Project #: CA19_7288_002n

North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	9	1	0	0	0	0	0	0	0	0	0	0	10
01:00	0	7	0	0	2	0	0	0	0	0	0	1	0	10
02:00	0	2	3	0	1	0	0	0	0	0	0	0	0	6
03:00	0	12	4	0	1	0	0	0	1	0	0	0	0	18
04:00	0	10	7	0	4	0	0	0	0	0	0	0	0	21
05:00	0	44	22	1	22	8	0	0	0	0	0	0	0	97
06:00	0	102	70	3	55	3	1	2	0	0	0	0	0	236
07:00	1	244	122	3	61	2	2	1	1	0	0	1	0	438
08:00	1	341	177	6	78	2	1	4	1	0	0	0	0	611
09:00	0	288	153	4	55	2	0	2	0	0	1	0	0	505
10:00	0	305	157	1	54	5	2	2	0	0	1	0	0	527
11:00	1	339	147	2	58	1	2	3	0	0	0	0	0	553
12:00 PM	0	354	128	7	46	2	4	5	4	0	0	0	0	550
13:00	0	341	157	3	53	7	1	1	1	0	0	0	0	564
14:00	1	342	157	2	46	2	3	2	2	0	0	0	0	557
15:00	1	355	186	1	55	6	3	4	1	0	0	0	0	612
16:00	0	422	206	2	61	6	2	4	0	0	0	0	0	703
17:00	0	323	132	1	42	0	0	3	0	0	0	0	0	501
18:00	0	204	105	0	18	1	0	0	0	0	0	0	0	328
19:00	0	129	65	2	22	0	0	0	0	0	0	0	0	218
20:00	1	72	44	0	14	1	0	0	0	0	0	0	0	132
21:00	0	47	17	0	6	0	0	1	0	0	0	0	0	71
22:00	0	35	8	0	1	0	0	0	0	0	1	0	0	45
23:00	0	17	4	0	1	0	0	0	0	0	0	0	0	22
Totals	**6**	**4344**	**2072**	**38**	**756**	**48**	**21**	**34**	**11**		**3**	**2**		**7335**
% of Totals	0%	59%	28%	1%	10%	1%	0%	0%	0%		0%	0%		100%

AM Volumes	3	1703	863	20	391	23	8	14	3	0	2	2	0	3032
% AM	0%	23%	12%	0%	5%	0%	0%	0%	0%		0%	0%		41%
AM Peak Hour	07:00	08:00	08:00	08:00	08:00	05:00	07:00	08:00	03:00		09:00	01:00		08:00
Volume	1	341	177	6	78	8	2	4	1		1	1		611
PM Volumes	3	2641	1209	18	365	25	13	20	8	0	1	0	0	4303
% PM	0%	36%	16%	0%	5%	0%	0%	0%	0%		0%			59%
PM Peak Hour	14:00	16:00	16:00	12:00	16:00	13:00	12:00	12:00	12:00		22:00			16:00
Volume	1	422	206	7	61	7	4	5	4		1			703

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	1049	14%	1114	15%	1204	16%	3968	54%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Monday
Date: 9/9/2019

City: Grass Valley
Project #: CA19_7288_002s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	7	3	0	0	0	0	0	0	0	0	0	0	10
01:00	0	10	1	0	2	1	0	0	0	0	0	0	0	14
02:00	0	5	1	1	0	0	0	0	0	0	0	0	0	7
03:00	0	8	4	0	0	0	0	0	1	0	0	0	0	13
04:00	0	25	11	0	1	0	0	0	0	0	1	0	0	38
05:00	0	51	48	1	13	1	0	0	1	0	0	0	0	115
06:00	0	147	68	0	14	0	0	0	3	0	2	0	0	234
07:00	0	218	107	1	30	0	0	1	1	0	0	0	0	358
08:00	0	312	140	0	32	0	0	4	0	0	1	0	0	489
09:00	0	285	131	1	25	1	0	0	0	0	0	0	0	443
10:00	0	308	115	1	29	2	0	2	1	0	0	0	0	458
11:00	0	346	136	2	32	2	0	1	0	0	0	0	0	519
12:00 PM	0	411	124	2	33	1	0	2	2	0	0	0	0	575
13:00	0	364	118	4	39	5	0	3	1	0	0	0	0	534
14:00	1	364	163	2	47	2	0	2	0	0	0	0	0	581
15:00	0	430	156	2	43	9	0	2	0	0	0	0	0	642
16:00	1	447	180	1	34	2	0	1	0	0	0	0	0	666
17:00	0	507	126	0	19	0	0	1	0	0	0	0	0	653
18:00	0	321	84	2	13	0	0	0	0	0	0	0	0	420
19:00	0	207	66	1	13	1	0	0	0	0	0	0	0	288
20:00	0	149	34	3	4	2	0	0	1	0	0	0	0	193
21:00	0	89	19	0	3	0	0	0	0	0	0	0	0	111
22:00	0	45	13	0	0	0	0	1	0	0	0	0	0	59
23:00	0	36	4	0	0	0	0	0	0	0	0	0	0	40
Totals	**2**	**5092**	**1852**	**24**	**426**	**29**		**20**	**11**		**4**			**7460**
% of Totals	0%	68%	25%	0%	6%	0%		0%	0%		0%			100%

AM Volumes	0	1722	765	7	178	7	0	8	7	0	4	0	0	2698
% AM		23%	10%	0%	2%	0%		0%	0%		0%			36%
AM Peak Hour		11:00	08:00	11:00	08:00	10:00		08:00	06:00		06:00			11:00
Volume		346	140	2	32	2		4	3		2			519
PM Volumes	2	3370	1087	17	248	22	0	12	4	0	0	0	0	4762
% PM	0%	45%	15%	0%	3%	0%		0%	0%					64%
PM Peak Hour	14:00	17:00	16:00	13:00	14:00	15:00		13:00	12:00					16:00
Volume	1	507	180	4	47	9		3	2					666

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	847		11%	1109		15%	1319		18%	4185		56%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Monday
Date: 9/9/2019

City: Grass Valley
Project #: CA19_7288_002

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	16	4	0	0	0	0	0	0	0	0	0	0	20
01:00	0	17	1	0	4	1	0	0	0	0	0	1	0	24
02:00	0	7	4	1	1	0	0	0	0	0	0	0	0	13
03:00	0	20	8	0	1	0	0	0	2	0	0	0	0	31
04:00	0	35	18	0	5	0	0	0	0	0	1	0	0	59
05:00	0	95	70	2	35	9	0	0	1	0	0	0	0	212
06:00	0	249	138	3	69	3	1	2	3	0	2	0	0	470
07:00	1	462	229	4	91	2	2	2	2	0	0	1	0	796
08:00	1	653	317	6	110	2	1	8	1	0	1	0	0	1100
09:00	0	573	284	5	80	3	0	2	0	0	1	0	0	948
10:00	0	613	272	2	83	7	2	4	1	0	1	0	0	985
11:00	1	685	283	4	90	3	2	4	0	0	0	0	0	1072
12:00 PM	0	765	252	9	79	3	4	7	6	0	0	0	0	1125
13:00	0	705	275	7	92	12	1	4	2	0	0	0	0	1098
14:00	2	706	320	4	93	4	3	4	2	0	0	0	0	1138
15:00	1	785	342	3	98	15	3	6	1	0	0	0	0	1254
16:00	1	869	386	3	95	8	2	5	0	0	0	0	0	1369
17:00	0	830	258	1	61	0	0	4	0	0	0	0	0	1154
18:00	0	525	189	2	31	1	0	0	0	0	0	0	0	748
19:00	0	336	131	3	35	1	0	0	0	0	0	0	0	506
20:00	1	221	78	3	18	3	0	0	1	0	0	0	0	325
21:00	0	136	36	0	9	0	0	1	0	0	0	0	0	182
22:00	0	80	21	0	1	0	0	1	0	0	1	0	0	104
23:00	0	53	8	0	1	0	0	0	0	0	0	0	0	62
Totals	**8**	**9436**	**3924**	**62**	**1182**	**77**	**21**	**54**	**22**		**7**	**2**		**14795**
% of Totals	0%	64%	27%	0%	8%	1%	0%	0%	0%		0%	0%		100%

AM Volumes	3	3425	1628	27	569	30	8	22	10	0	6	2	0	5730
% AM	0%	23%	11%	0%	4%	0%	0%	0%	0%		0%	0%		39%
AM Peak Hour	07:00	11:00	08:00	08:00	08:00	05:00	07:00	08:00	06:00		06:00	01:00		08:00
Volume	1	685	317	6	110	9	2	8	3		2	1		1100
PM Volumes	5	6011	2296	35	613	47	13	32	12	0	1	0	0	9065
% PM	0%	41%	16%	0%	4%	0%	0%	0%	0%		0%			61%
PM Peak Hour	14:00	16:00	16:00	12:00	15:00	15:00	12:00	12:00	12:00		22:00			16:00
Volume	2	869	386	9	98	15	4	7	6		1			1369

Directional Peak Periods All Classes	AM 7-9 Volume	AM 7-9 %	NOON 12-2 Volume	NOON 12-2 %	PM 4-6 Volume	PM 4-6 %	Off Peak Volumes Volume	Off Peak Volumes %
	1896	13%	2223	15%	2523	17%	8153	55%

Classification Definitions

1 Motorcycles
2 Passenger Cars
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4 Buses
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8 <=4-Axle Single Trailers
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11 <=5-Axle Multi-Trailers
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13 >=7-Axle Multi-Trailers

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Tuesday
Date: 9/10/2019

City: Grass Valley
Project #: CA19_7288_002

DAILY TOTALS	NB	SB	EB	WB	Total
	7,445	7,430	0	0	14,875

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	3		1		0	0	4		**12:00**	150		135		0	0	285	
00:15	2		1		0	0	3		**12:15**	119		167		0	0	286	
00:30	2		1		0	0	3		**12:30**	135		139		0	0	274	
00:45	0	7	0	3	0	0		10	**12:45**	138	542	122	563	0	0	260	1105
01:00	1		4		0	0	5		**13:00**	138		126		0	0	264	
01:15	2		1		0	0	3		**13:15**	149		111		0	0	260	
01:30	2		1		0	0	3		**13:30**	132		126		0	0	258	
01:45	1	6	5	11	0	0	6	17	**13:45**	133	552	141	504	0	0	274	1056
02:00	4		3		0	0	7		**14:00**	133		146		0	0	279	
02:15	2		0		0	0	2		**14:15**	113		135		0	0	248	
02:30	1		0		0	0	1		**14:30**	127		141		0	0	268	
02:45	1	8	2	5	0	0	3	13	**14:45**	159	532	141	563	0	0	300	1095
03:00	5		1		0	0	6		**15:00**	154		163		0	0	317	
03:15	6		1		0	0	7		**15:15**	182		151		0	0	333	
03:30	9		5		0	0	14		**15:30**	204		157		0	0	361	
03:45	6	26	6	13	0	0	12	39	**15:45**	169	709	176	647	0	0	345	1356
04:00	1		2		0	0	3		**16:00**	180		148		0	0	328	
04:15	2		11		0	0	13		**16:15**	164		165		0	0	329	
04:30	9		13		0	0	22		**16:30**	183		172		0	0	355	
04:45	15	27	5	31	0	0	20	58	**16:45**	150	677	196	681	0	0	346	1358
05:00	9		16		0	0	25		**17:00**	175		181		0	0	356	
05:15	29		16		0	0	45		**17:15**	142		159		0	0	301	
05:30	26		38		0	0	64		**17:30**	115		151		0	0	266	
05:45	29	93	45	115	0	0	74	208	**17:45**	102	534	144	635	0	0	246	1169
06:00	20		28		0	0	48		**18:00**	105		94		0	0	199	
06:15	54		33		0	0	87		**18:15**	85		115		0	0	200	
06:30	58		50		0	0	108		**18:30**	67		105		0	0	172	
06:45	109	241	113	224	0	0	222	465	**18:45**	86	343	128	442	0	0	214	785
07:00	68		69		0	0	137		**19:00**	80		81		0	0	161	
07:15	83		68		0	0	151		**19:15**	72		87		0	0	159	
07:30	120		73		0	0	193		**19:30**	57		75		0	0	132	
07:45	167	438	120	330	0	0	287	768	**19:45**	25	234	78	321	0	0	103	555
08:00	127		126		0	0	253		**20:00**	35		55		0	0	90	
08:15	148		138		0	0	286		**20:15**	30		76		0	0	106	
08:30	159		111		0	0	270		**20:30**	24		47		0	0	71	
08:45	174	608	109	484	0	0	283	1092	**20:45**	20	109	47	225	0	0	67	334
09:00	138		102		0	0	240		**21:00**	19		43		0	0	62	
09:15	116		116		0	0	232		**21:15**	28		45		0	0	73	
09:30	131		108		0	0	239		**21:30**	30		27		0	0	57	
09:45	121	506	109	435	0	0	230	941	**21:45**	20	97	25	140	0	0	45	237
10:00	123		127		0	0	250		**22:00**	16		22		0	0	38	
10:15	145		93		0	0	238		**22:15**	10		15		0	0	25	
10:30	116		123		0	0	239		**22:30**	18		16		0	0	34	
10:45	138	522	111	454	0	0	249	976	**22:45**	11	55	12	65	0	0	23	120
11:00	121		115		0	0	236		**23:00**	8		9		0	0	17	
11:15	131		128		0	0	259		**23:15**	6		11		0	0	17	
11:30	122		120		0	0	242		**23:30**	9		6		0	0	15	
11:45	172	546	142	505	0	0	314	1051	**23:45**	10	33	8	34	0	0	18	67
TOTALS		3028		2610				**5638**	**TOTALS**		4417		4820				**9237**
SPLIT %		53.7%		46.3%				**37.9%**	**SPLIT %**		47.8%		52.2%				**62.1%**

DAILY TOTALS	NB	SB	EB	WB	Total
	7,445	7,430	0	0	14,875

AM Peak Hour	08:15	11:45					**11:45**	**PM Peak Hour**	15:15	16:15					**16:15**
AM Pk Volume	619	583					**1159**	**PM Pk Volume**	735	714					**1386**
Pk Hr Factor	0.889	0.873					**0.923**	**Pk Hr Factor**	0.901	0.911					**0.973**
7 - 9 Volume	1046	814	0	0			**1860**	**4 - 6 Volume**	1211	1316	0	0			**2527**
7 - 9 Peak Hour	08:00	07:45					**07:45**	**4 - 6 Peak Hour**	16:00	16:15					**16:15**
7 - 9 Pk Volume	608	495	0	0			**1096**	**4 - 6 Pk Volume**	677	714	0	0			**1386**
Pk Hr Factor	0.874	0.897	0.000	0.000			**0.955**	**Pk Hr Factor**	0.925	0.911	0.000	0.000			**0.973**

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Tuesday
Date: 9/10/2019

City: Grass Valley
Project #: CA19_7288_002n

North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	4	1	0	2	0	0	0	0	0	0	0	0	7
01:00	0	4	1	0	1	0	0	0	0	0	0	0	0	6
02:00	0	3	2	0	3	0	0	0	0	0	0	0	0	8
03:00	0	17	8	0	1	0	0	0	0	0	0	0	0	26
04:00	0	12	6	0	9	0	0	0	0	0	0	0	0	27
05:00	0	42	22	1	18	10	0	0	0	0	0	0	0	93
06:00	0	104	75	4	52	5	1	0	0	0	0	0	0	241
07:00	0	244	128	3	55	3	3	1	1	0	0	0	0	438
08:00	0	332	186	6	78	2	0	3	1	0	0	0	0	608
09:00	1	282	161	6	51	2	0	3	0	0	0	0	0	506
10:00	0	309	148	4	54	4	2	1	0	0	0	0	0	522
11:00	2	341	141	3	54	1	1	2	1	0	0	0	0	546
12:00 PM	0	353	131	6	44	2	1	3	2	0	0	0	0	542
13:00	0	339	151	5	50	5	1	0	1	0	0	0	0	552
14:00	0	318	153	4	52	1	0	4	0	0	0	0	0	532
15:00	0	423	209	1	66	2	1	6	1	0	0	0	0	709
16:00	0	424	197	2	52	1	0	0	0	0	1	0	0	677
17:00	0	361	142	0	30	1	0	0	0	0	0	0	0	534
18:00	0	215	93	1	31	2	0	0	1	0	0	0	0	343
19:00	0	153	63	1	16	0	0	1	0	0	0	0	0	234
20:00	0	62	37	0	9	1	0	0	0	0	0	0	0	109
21:00	0	62	25	1	5	1	0	1	1	0	1	0	0	97
22:00	0	39	13	0	3	0	0	0	0	0	0	0	0	55
23:00	0	22	11	0	0	0	0	0	0	0	0	0	0	33
Totals	**3**	**4465**	**2104**	**48**	**736**	**43**	**10**	**25**	**9**		**2**			**7445**
% of Totals	0%	60%	28%	1%	10%	1%	0%	0%	0%		0%			100%

AM Volumes	3	1694	879	27	378	27	7	10	3	0	0	0	0	3028
% AM	0%	23%	12%	0%	5%	0%	0%	0%	0%					41%
AM Peak Hour	11:00	11:00	08:00	08:00	08:00	05:00	07:00	08:00	07:00					08:00
Volume	2	341	186	6	78	10	3	3	1					608
PM Volumes	0	2771	1225	21	358	16	3	15	6	0	2	0	0	4417
% PM		37%	16%	0%	5%	0%	0%	0%	0%		0%			59%
PM Peak Hour		16:00	15:00	12:00	15:00	13:00	12:00	15:00	12:00		16:00			15:00
Volume		424	209	6	66	5	1	6	2		1			709

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	1046	14%	1094	15%	1211	16%	4094	55%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Tuesday
Date: 9/10/2019

City: Grass Valley
Project #: CA19_7288_002s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	3
01:00	0	9	1	0	1	0	0	0	0	0	0	0	0	11
02:00	0	2	3	0	0	0	0	0	0	0	0	0	0	5
03:00	0	12	1	0	0	0	0	0	0	0	0	0	0	13
04:00	0	19	12	0	0	0	0	0	0	0	0	0	0	31
05:00	0	49	56	0	9	0	0	0	1	0	0	0	0	115
06:00	0	136	67	0	18	0	0	0	3	0	0	0	0	224
07:00	0	210	98	0	21	0	0	1	0	0	0	0	0	330
08:00	0	303	150	2	27	0	0	2	0	0	0	0	0	484
09:00	1	284	128	2	18	1	0	1	0	0	0	0	0	435
10:00	0	305	113	3	27	3	0	2	1	0	0	0	0	454
11:00	0	317	144	2	40	1	0	1	0	0	0	0	0	505
12:00 PM	0	409	119	2	31	1	0	0	1	0	0	0	0	563
13:00	0	337	115	3	42	4	0	2	1	0	0	0	0	504
14:00	0	347	162	2	49	2	0	1	0	0	0	0	0	563
15:00	0	435	163	3	39	6	0	1	0	0	0	0	0	647
16:00	1	454	186	2	36	1	0	1	0	0	0	0	0	681
17:00	0	500	121	2	9	1	0	1	1	0	0	0	0	635
18:00	0	343	87	1	11	0	0	0	0	0	0	0	0	442
19:00	0	226	73	1	18	3	0	0	0	0	0	0	0	321
20:00	0	151	61	0	12	1	0	0	0	0	0	0	0	225
21:00	0	101	33	0	4	1	0	1	0	0	0	0	0	140
22:00	0	51	10	0	3	0	0	1	0	0	0	0	0	65
23:00	0	27	4	0	3	0	0	0	0	0	0	0	0	34
Totals	**2**	**5030**	**1907**	**25**	**418**	**25**		**15**	**8**					**7430**
% of Totals	0%	68%	26%	0%	6%	0%		0%	0%					100%

AM Volumes	1	1649	773	9	161	5	0	7	5	0	0	0	0	2610
% AM	0%	22%	10%	0%	2%	0%		0%	0%					35%
AM Peak Hour	09:00	11:00	08:00	10:00	11:00	10:00		08:00	06:00					11:00
Volume	1	317	150	3	40	3		2	3					505
PM Volumes	1	3381	1134	16	257	20	0	8	3	0	0	0	0	4820
% PM	0%	46%	15%	0%	3%	0%		0%	0%					65%
PM Peak Hour	16:00	17:00	16:00	13:00	14:00	15:00		13:00	12:00					16:00
Volume	1	500	186	3	49	6		2	1					681

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	814		11%	1067		14%	1316		18%	4233		57%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. E Bennett Rd & Whispering Pines Ln

Day: Tuesday
Date: 9/10/2019

City: Grass Valley
Project #: CA19_7288_002

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	7	1	0	2	0	0	0	0	0	0	0	0	10
01:00	0	13	2	0	2	0	0	0	0	0	0	0	0	17
02:00	0	5	5	0	3	0	0	0	0	0	0	0	0	13
03:00	0	29	9	0	1	0	0	0	0	0	0	0	0	39
04:00	0	31	18	0	9	0	0	0	0	0	0	0	0	58
05:00	0	91	78	1	27	10	0	0	1	0	0	0	0	208
06:00	0	240	142	4	70	5	1	0	3	0	0	0	0	465
07:00	0	454	226	3	76	3	3	2	1	0	0	0	0	768
08:00	0	635	336	8	105	2	0	5	1	0	0	0	0	1092
09:00	2	566	289	8	69	3	0	4	0	0	0	0	0	941
10:00	0	614	261	7	81	7	2	3	1	0	0	0	0	976
11:00	2	658	285	5	94	2	1	3	1	0	0	0	0	1051
12:00 PM	0	762	250	8	75	3	1	3	3	0	0	0	0	1105
13:00	0	676	266	8	92	9	1	2	2	0	0	0	0	1056
14:00	0	665	315	6	101	3	0	5	0	0	0	0	0	1095
15:00	0	858	372	4	105	8	1	7	1	0	0	0	0	1356
16:00	1	878	383	4	88	2	0	1	0	0	1	0	0	1358
17:00	0	861	263	2	39	2	0	1	1	0	0	0	0	1169
18:00	0	558	180	2	42	2	0	0	1	0	0	0	0	785
19:00	0	379	136	2	34	3	0	1	0	0	0	0	0	555
20:00	0	213	98	0	21	2	0	0	0	0	0	0	0	334
21:00	0	163	58	1	9	2	0	2	1	0	1	0	0	237
22:00	0	90	23	0	6	0	0	1	0	0	0	0	0	120
23:00	0	49	15	0	3	0	0	0	0	0	0	0	0	67
Totals	5	9495	4011	73	1154	68	10	40	17		2			14875
% of Totals	0%	64%	27%	0%	8%	0%	0%	0%	0%		0%			100%

AM Volumes	4	3343	1652	36	539	32	7	17	8	0	0	0	0	5638
% AM	0%	22%	11%	0%	4%	0%	0%	0%	0%					38%
AM Peak Hour	09:00	11:00	08:00	08:00	08:00	05:00	07:00	08:00	06:00					08:00
Volume	2	658	336	8	105	10	3	5	3					1092
PM Volumes	1	6152	2359	37	615	36	3	23	9	0	2	0	0	9237
% PM	0%	41%	16%	0%	4%	0%	0%	0%	0%		0%			62%
PM Peak Hour	16:00	16:00	16:00	12:00	15:00	13:00	12:00	15:00	12:00		16:00			16:00
Volume	1	878	383	8	105	9	1	7	3		1			1358

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	1860		13%	2161		15%	2527		17%	8327		56%

Classification Definitions

1	Motorcycles	**4**	Buses	**7**	> =4-Axle Single Units	**10**	>=6-Axle Single Trailers	**13**	>=7-Axle Multi-Trailers
2	Passenger Cars	**5**	2-Axle, 6-Tire Single Units	**8**	<=4-Axle Single Trailers	**11**	<=5-Axle Multi-Trailers		
3	2-Axle, 4-Tire Single Units	**6**	3-Axle Single Units	**9**	5-Axle Single Trailers	**12**	6-Axle Multi-Trailers		

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Wednesday
Date: 9/4/2019

City: Grass Valley
Project #: CA19_7288_003

DAILY TOTALS	NB	SB	EB	WB	Total
	6,332	6,267	0	0	12,599

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	4		4		0	0	8		**12:00**	146		119		0	0	265	
00:15	5		4		0	0	9		**12:15**	114		128		0	0	242	
00:30	5		8		0	0	13		**12:30**	117		131		0	0	248	
00:45	1	15	4	20	0	0	5	35	**12:45**	110	487	143	521	0	0	253	1008
01:00	0		5		0	0	5		**13:00**	121		108		0	0	229	
01:15	2		4		0	0	6		**13:15**	114		123		0	0	237	
01:30	3		3		0	0	6		**13:30**	108		137		0	0	245	
01:45	2	7	3	15	0	0	5	22	**13:45**	93	436	125	493	0	0	218	929
02:00	0		1		0	0	1		**14:00**	90		135		0	0	225	
02:15	1		2		0	0	3		**14:15**	127		100		0	0	227	
02:30	1		2		0	0	3		**14:30**	120		112		0	0	232	
02:45	2	4	2	7	0	0	4	11	**14:45**	107	444	138	485	0	0	245	929
03:00	3		0		0	0	3		**15:00**	116		124		0	0	240	
03:15	1		1		0	0	2		**15:15**	143		105		0	0	248	
03:30	1		3		0	0	4		**15:30**	142		136		0	0	278	
03:45	5	10	6	10	0	0	11	20	**15:45**	111	512	138	503	0	0	249	1015
04:00	2		2		0	0	4		**16:00**	148		126		0	0	274	
04:15	4		11		0	0	15		**16:15**	132		144		0	0	276	
04:30	5		8		0	0	13		**16:30**	151		161		0	0	312	
04:45	8	19	5	26	0	0	13	45	**16:45**	137	568	146	577	0	0	283	1145
05:00	18		9		0	0	27		**17:00**	134		138		0	0	272	
05:15	11		19		0	0	30		**17:15**	115		131		0	0	246	
05:30	22		24		0	0	46		**17:30**	92		127		0	0	219	
05:45	38	89	36	88	0	0	74	177	**17:45**	94	435	103	499	0	0	197	934
06:00	31		27		0	0	58		**18:00**	85		83		0	0	168	
06:15	37		22		0	0	59		**18:15**	56		88		0	0	144	
06:30	45		42		0	0	87		**18:30**	62		95		0	0	157	
06:45	76	189	59	150	0	0	135	339	**18:45**	71	274	95	361	0	0	166	635
07:00	69		45		0	0	114		**19:00**	63		85		0	0	148	
07:15	104		52		0	0	156		**19:15**	47		83		0	0	130	
07:30	126		72		0	0	198		**19:30**	44		69		0	0	113	
07:45	155	454	78	247	0	0	233	701	**19:45**	42	196	66	303	0	0	108	499
08:00	142		88		0	0	230		**20:00**	32		51		0	0	83	
08:15	129		93		0	0	222		**20:15**	40		50		0	0	90	
08:30	119		99		0	0	218		**20:30**	26		46		0	0	72	
08:45	137	527	103	383	0	0	240	910	**20:45**	24	122	42	189	0	0	66	311
09:00	121		91		0	0	212		**21:00**	15		37		0	0	52	
09:15	122		89		0	0	211		**21:15**	13		36		0	0	49	
09:30	124		87		0	0	211		**21:30**	22		21		0	0	43	
09:45	106	473	105	372	0	0	211	845	**21:45**	14	64	27	121	0	0	41	185
10:00	104		80		0	0	184		**22:00**	11		17		0	0	28	
10:15	105		82		0	0	187		**22:15**	11		12		0	0	23	
10:30	111		93		0	0	204		**22:30**	2		14		0	0	16	
10:45	111	431	104	359	0	0	215	790	**22:45**	10	34	12	55	0	0	22	89
11:00	117		115		0	0	232		**23:00**	10		11		0	0	21	
11:15	129		122		0	0	251		**23:15**	7		7		0	0	14	
11:30	137		98		0	0	235		**23:30**	4		8		0	0	12	
11:45	135	518	113	448	0	0	248	966	**23:45**	3	24	9	35	0	0	12	59
TOTALS		2736		2125				**4861**	**TOTALS**		3596		4142				**7738**
SPLIT %		56.3%		43.7%				**38.6%**	**SPLIT %**		46.5%		53.5%				**61.4%**

DAILY TOTALS	NB	SB	EB	WB	Total
	6,332	6,267	0	0	12,599

AM Peak Hour	07:30	11:45					**11:45**	**PM Peak Hour**	16:00	16:15					**16:00**
AM Pk Volume	552	491					**1003**	**PM Pk Volume**	568	589					**1145**
Pk Hr Factor	0.890	0.937					**0.946**	**Pk Hr Factor**	0.940	0.915					**0.917**
7 - 9 Volume	981	630	0	0			**1611**	**4 - 6 Volume**	1003	1076	0	0			**2079**
7 - 9 Peak Hour	07:30	08:00					**08:00**	**4 - 6 Peak Hour**	16:00	16:15					**16:00**
7 - 9 Pk Volume	552	383	0	0			**910**	**4 - 6 Pk Volume**	568	589	0	0			**1145**
Pk Hr Factor	0.890	0.930	0.000	0.000			**0.948**	**Pk Hr Factor**	0.940	0.915	0.000	0.000			**0.917**

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Wednesday
Date: 9/4/2019

City: Grass Valley
Project #: CA19_7288_003n

North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	11	4	0	0	0	0	0	0	0	0	0	0	15
01:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
02:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
03:00	0	8	2	0	0	0	0	0	0	0	0	0	0	10
04:00	0	9	6	0	4	0	0	0	0	0	0	0	0	19
05:00	0	48	23	1	16	0	0	1	0	0	0	0	0	89
06:00	0	102	63	2	21	0	0	1	0	0	0	0	0	189
07:00	0	298	118	0	33	0	0	4	0	0	1	0	0	454
08:00	0	378	115	3	26	0	0	4	0	0	1	0	0	527
09:00	0	343	102	3	22	0	0	3	0	0	0	0	0	473
10:00	0	315	92	3	19	0	0	2	0	0	0	0	0	431
11:00	0	375	111	3	27	0	0	2	0	0	0	0	0	518
12:00 PM	0	359	99	1	23	0	0	5	0	0	0	0	0	487
13:00	0	295	115	2	16	0	3	4	0	1	0	0	0	436
14:00	0	325	101	0	17	0	0	1	0	0	0	0	0	444
15:00	0	363	128	3	16	0	0	2	0	0	0	0	0	512
16:00	0	420	132	1	14	0	0	1	0	0	0	0	0	568
17:00	0	348	77	3	5	0	0	2	0	0	0	0	0	435
18:00	0	223	43	2	6	0	0	0	0	0	0	0	0	274
19:00	0	157	34	0	5	0	0	0	0	0	0	0	0	196
20:00	0	98	21	0	3	0	0	0	0	0	0	0	0	122
21:00	0	45	16	0	1	0	0	1	0	0	1	0	0	64
22:00	0	29	5	0	0	0	0	0	0	0	0	0	0	34
23:00	0	20	4	0	0	0	0	0	0	0	0	0	0	24
Totals		**4579**	**1412**	**27**	**274**		**3**	**33**		**1**	**3**			**6332**
% of Totals		72%	22%	0%	4%		0%	1%		0%	0%			100%

AM Volumes	0	1897	637	15	168	0	0	17	0	0	2	0	0	2736
% AM		30%	10%	0%	3%			0%			0%			43%
AM Peak Hour		08:00	07:00	08:00	07:00			07:00			07:00			08:00
Volume		378	118	3	33			4			1			527
PM Volumes	0	2682	775	12	106	0	3	16	0	1	1	0	0	3596
% PM		42%	12%	0%	2%		0%	0%		0%	0%			57%
PM Peak Hour		16:00	16:00	15:00	12:00		13:00	12:00		13:00	21:00			16:00
Volume		420	132	3	23		3	5		1	1			568

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	981		15%	923		15%	1003		16%	3425		54%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Wednesday
Date: 9/4/2019

City: Grass Valley
Project #: CA19_7288_003s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	15	4	0	1	0	0	0	0	0	0	0	0	20
01:00	0	12	3	0	0	0	0	0	0	0	0	0	0	15
02:00	0	4	2	0	1	0	0	0	0	0	0	0	0	7
03:00	0	4	3	0	2	0	0	0	0	0	1	0	0	10
04:00	0	17	8	0	1	0	0	0	0	0	0	0	0	26
05:00	0	44	30	1	13	0	0	0	0	0	0	0	0	88
06:00	0	88	46	0	13	0	0	1	1	0	1	0	0	150
07:00	0	166	63	0	12	0	0	6	0	0	0	0	0	247
08:00	0	271	88	1	20	0	0	3	0	0	0	0	0	383
09:00	0	272	83	0	17	0	0	0	0	0	0	0	0	372
10:00	1	259	80	0	15	0	0	4	0	0	0	0	0	359
11:00	0	316	107	3	21	0	0	1	0	0	0	0	0	448
12:00 PM	0	375	117	2	25	0	0	2	0	0	0	0	0	521
13:00	0	357	113	0	19	0	0	4	0	0	0	0	0	493
14:00	0	356	106	3	18	0	0	2	0	0	0	0	0	485
15:00	0	367	110	2	23	0	0	1	0	0	0	0	0	503
16:00	0	424	135	2	15	0	0	1	0	0	0	0	0	577
17:00	0	392	96	2	8	0	0	1	0	0	0	0	0	499
18:00	0	280	63	2	15	0	0	1	0	0	0	0	0	361
19:00	0	237	53	0	12	1	0	0	0	0	0	0	0	303
20:00	0	137	48	0	4	0	0	0	0	0	0	0	0	189
21:00	0	89	28	0	3	0	0	1	0	0	0	0	0	121
22:00	0	46	8	0	0	0	0	1	0	0	0	0	0	55
23:00	0	27	6	0	2	0	0	0	0	0	0	0	0	35
Totals	**1**	**4555**	**1400**	**18**	**260**	**1**		**29**	**1**		**2**			**6267**
% of Totals	0%	73%	22%	0%	4%	0%		0%	0%		0%			100%

AM Volumes	1	1468	517	5	116	0	0	15	1	0	2	0	0	2125
% AM	0%	23%	8%	0%	2%			0%	0%		0%			34%
AM Peak Hour	10:00	11:00	11:00	11:00	11:00			07:00	06:00		03:00			11:00
Volume	1	316	107	3	21			6	1		1			448
PM Volumes	0	3087	883	13	144	1	0	14	0	0	0	0	0	4142
% PM		49%	14%	0%	2%	0%		0%						66%
PM Peak Hour		16:00	16:00	14:00	12:00	19:00		13:00						16:00
Volume		424	135	3	25	1		4						577

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	630	10%	1014	16%	1076	17%	3547	57%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Wednesday
Date: 9/4/2019

City: Grass Valley
Project #: CA19_7288_003

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	26	8	0	1	0	0	0	0	0	0	0	0	35
01:00	0	18	4	0	0	0	0	0	0	0	0	0	0	22
02:00	0	8	2	0	1	0	0	0	0	0	0	0	0	11
03:00	0	12	5	0	2	0	0	0	0	0	1	0	0	20
04:00	0	26	14	0	5	0	0	0	0	0	0	0	0	45
05:00	0	92	53	2	29	0	0	1	0	0	0	0	0	177
06:00	0	190	109	2	34	0	0	2	1	0	1	0	0	339
07:00	0	464	181	0	45	0	0	10	0	0	1	0	0	701
08:00	0	649	203	4	46	0	0	7	0	0	1	0	0	910
09:00	0	615	185	3	39	0	0	3	0	0	0	0	0	845
10:00	1	574	172	3	34	0	0	6	0	0	0	0	0	790
11:00	0	691	218	6	48	0	0	3	0	0	0	0	0	966
12:00 PM	0	734	216	3	48	0	0	7	0	0	0	0	0	1008
13:00	0	652	228	2	35	0	3	8	0	1	0	0	0	929
14:00	0	681	207	3	35	0	0	3	0	0	0	0	0	929
15:00	0	730	238	5	39	0	0	3	0	0	0	0	0	1015
16:00	0	844	267	3	29	0	0	2	0	0	0	0	0	1145
17:00	0	740	173	5	13	0	0	3	0	0	0	0	0	934
18:00	0	503	106	4	21	0	0	1	0	0	0	0	0	635
19:00	0	394	87	0	17	1	0	0	0	0	0	0	0	499
20:00	0	235	69	0	7	0	0	0	0	0	0	0	0	311
21:00	0	134	44	0	4	0	0	2	0	0	1	0	0	185
22:00	0	75	13	0	0	0	0	1	0	0	0	0	0	89
23:00	0	47	10	0	2	0	0	0	0	0	0	0	0	59
Totals	**1**	**9134**	**2812**	**45**	**534**	**1**	**3**	**62**	**1**	**1**	**5**			**12599**
% of Totals	0%	72%	22%	0%	4%	0%	0%	0%	0%	0%	0%			100%

AM Volumes	1	3365	1154	20	284	0	0	32	1	0	4	0	0	4861
% AM	0%	27%	9%	0%	2%			0%	0%		0%			39%
AM Peak Hour	10:00	11:00	11:00	11:00	11:00			07:00	06:00		03:00			11:00
Volume	1	691	218	6	48			10	1		1			966
PM Volumes	0	5769	1658	25	250	1	3	30	0	1	1	0	0	7738
% PM		46%	13%	0%	2%	0%	0%	0%		0%	0%			61%
PM Peak Hour		16:00	16:00	15:00	12:00	19:00	13:00	13:00		13:00	21:00			16:00
Volume		844	267	5	48	1	3	8		1	1			1145

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	1611		13%	1937		15%	2079		17%	6972		55%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Thursday
Date: 9/5/2019

City: Grass Valley
Project #: CA19_7288_003

DAILY TOTALS	NB	SB	EB	WB	Total
	6,259	6,166	0	0	12,425

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	4		9		0	0	13		**12:00**	132		117		0	0	249	
00:15	3		9		0	0	12		**12:15**	83		127		0	0	210	
00:30	2		5		0	0	7		**12:30**	130		121		0	0	251	
00:45	2	11	1	24	0	0	3	35	**12:45**	106	451	136	501	0	0	242	952
01:00	3		0		0	0	3		**13:00**	96		121		0	0	217	
01:15	3		1		0	0	4		**13:15**	113		103		0	0	216	
01:30	2		1		0	0	3		**13:30**	109		121		0	0	230	
01:45	3	11	2	4	0	0	5	15	**13:45**	94	412	110	455	0	0	204	867
02:00	0		4		0	0	4		**14:00**	101		111		0	0	212	
02:15	0		2		0	0	2		**14:15**	132		102		0	0	234	
02:30	1		0		0	0	1		**14:30**	117		102		0	0	219	
02:45	1	2	1	7	0	0	2	9	**14:45**	114	464	129	444	0	0	243	908
03:00	5		3		0	0	8		**15:00**	118		124		0	0	242	
03:15	1		3		0	0	4		**15:15**	148		113		0	0	261	
03:30	2		1		0	0	3		**15:30**	141		134		0	0	275	
03:45	3	11	3	10	0	0	6	21	**15:45**	122	529	138	509	0	0	260	1038
04:00	1		7		0	0	8		**16:00**	150		132		0	0	282	
04:15	5		6		0	0	11		**16:15**	130		142		0	0	272	
04:30	6		10		0	0	16		**16:30**	167		162		0	0	329	
04:45	10	22	5	28	0	0	15	50	**16:45**	140	587	144	580	0	0	284	1167
05:00	23		11		0	0	34		**17:00**	132		145		0	0	277	
05:15	13		17		0	0	30		**17:15**	121		136		0	0	257	
05:30	21		24		0	0	45		**17:30**	95		120		0	0	215	
05:45	39	96	38	90	0	0	77	186	**17:45**	92	440	100	501	0	0	192	941
06:00	24		19		0	0	43		**18:00**	87		77		0	0	164	
06:15	34		29		0	0	63		**18:15**	58		86		0	0	144	
06:30	43		43		0	0	86		**18:30**	64		95		0	0	159	
06:45	68	169	69	160	0	0	137	329	**18:45**	79	288	95	353	0	0	174	641
07:00	77		54		0	0	131		**19:00**	42		79		0	0	121	
07:15	88		51		0	0	139		**19:15**	41		95		0	0	136	
07:30	130		66		0	0	196		**19:30**	49		60		0	0	109	
07:45	159	454	74	245	0	0	233	699	**19:45**	45	177	73	307	0	0	118	484
08:00	148		98		0	0	246		**20:00**	33		49		0	0	82	
08:15	138		81		0	0	219		**20:15**	42		80		0	0	122	
08:30	108		96		0	0	204		**20:30**	39		60		0	0	99	
08:45	134	528	90	365	0	0	224	893	**20:45**	25	139	50	239	0	0	75	378
09:00	107		89		0	0	196		**21:00**	17		32		0	0	49	
09:15	106		91		0	0	197		**21:15**	15		27		0	0	42	
09:30	96		91		0	0	187		**21:30**	22		30		0	0	52	
09:45	106	415	99	370	0	0	205	785	**21:45**	29	83	28	117	0	0	57	200
10:00	99		76		0	0	175		**22:00**	10		20		0	0	30	
10:15	91		82		0	0	173		**22:15**	4		18		0	0	22	
10:30	120		84		0	0	204		**22:30**	7		16		0	0	23	
10:45	105	415	87	329	0	0	192	744	**22:45**	19	40	15	69	0	0	34	109
11:00	114		99		0	0	213		**23:00**	9		7		0	0	16	
11:15	133		110		0	0	243		**23:15**	5		10		0	0	15	
11:30	128		108		0	0	236		**23:30**	7		8		0	0	15	
11:45	114	489	103	420	0	0	217	909	**23:45**	5	26	14	39	0	0	19	65
TOTALS		2623		2052				**4675**	**TOTALS**		3636		4114				**7750**
SPLIT %		56.1%		43.9%				**37.6%**	**SPLIT %**		46.9%		53.1%				**62.4%**

DAILY TOTALS	NB	SB	EB	WB	Total
	6,259	6,166	0	0	12,425

AM Peak Hour	07:30	11:45					**11:15**	**PM Peak Hour**	16:00	16:15					**16:00**
AM Pk Volume	575	468					**945**	**PM Pk Volume**	587	593					**1167**
Pk Hr Factor	0.904	0.921					**0.949**	**Pk Hr Factor**	0.879	0.915					**0.887**
7 - 9 Volume	982	610	0	0			**1592**	**4 - 6 Volume**	1027	1081	0	0			**2108**
7 - 9 Peak Hour	07:30	08:00					**07:45**	**4 - 6 Peak Hour**	16:00	16:15					**16:00**
7 - 9 Pk Volume	575	365	0	0			**902**	**4 - 6 Pk Volume**	587	593	0	0			**1167**
Pk Hr Factor	0.904	0.931	0.000	0.000			**0.917**	**Pk Hr Factor**	0.879	0.915	0.000	0.000			**0.887**

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Thursday
Date: 9/5/2019

City: Grass Valley
Project #: CA19_7288_003n

North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	8	3	0	0	0	0	0	0	0	0	0	0	11
01:00	0	11	0	0	0	0	0	0	0	0	0	0	0	11
02:00	0	1	0	0	1	0	0	0	0	0	0	0	0	2
03:00	0	8	3	0	0	0	0	0	0	0	0	0	0	11
04:00	0	16	5	0	1	0	0	0	0	0	0	0	0	22
05:00	0	50	24	1	21	0	0	0	0	0	0	0	0	96
06:00	0	96	50	2	19	0	0	1	0	0	1	0	0	169
07:00	0	296	103	1	51	0	0	3	0	0	0	0	0	454
08:00	0	370	113	6	35	0	0	2	0	0	2	0	0	528
09:00	0	289	91	2	32	0	0	1	0	0	0	0	0	415
10:00	0	292	93	1	27	0	0	2	0	0	0	0	0	415
11:00	0	336	127	1	22	0	0	2	0	0	1	0	0	489
12:00 PM	0	333	100	2	15	0	0	1	0	0	0	0	0	451
13:00	0	297	87	0	22	0	0	6	0	0	0	0	0	412
14:00	0	331	111	0	20	0	0	2	0	0	0	0	0	464
15:00	0	372	136	0	20	0	0	1	0	0	0	0	0	529
16:00	0	415	147	3	21	0	0	1	0	0	0	0	0	587
17:00	0	345	86	1	7	0	0	1	0	0	0	0	0	440
18:00	0	228	50	0	10	0	0	0	0	0	0	0	0	288
19:00	0	139	35	0	3	0	0	0	0	0	0	0	0	177
20:00	0	100	29	2	8	0	0	0	0	0	0	0	0	139
21:00	0	70	10	0	1	0	0	1	0	0	1	0	0	83
22:00	0	33	6	0	1	0	0	0	0	0	0	0	0	40
23:00	0	19	7	0	0	0	0	0	0	0	0	0	0	26
Totals		**4455**	**1416**	**22**	**337**			**24**			**5**			**6259**
% of Totals		71%	23%	0%	5%			0%			0%			100%

AM Volumes	0	1773	612	14	209	0	0	11	0	0	4	0	0	2623
% AM		28%	10%	0%	3%			0%			0%			42%
AM Peak Hour		08:00	11:00	08:00	07:00			07:00			08:00			08:00
Volume		370	127	6	51			3			2			528
PM Volumes	0	2682	804	8	128	0	0	13	0	0	1	0	0	3636
% PM		43%	13%	0%	2%			0%			0%			58%
PM Peak Hour		16:00	16:00	16:00	13:00			13:00			21:00			16:00
Volume		415	147	3	22			6			1			587

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	982		16%	863		14%	1027		16%	3387		54%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Thursday
Date: 9/5/2019

City: Grass Valley
Project #: CA19_7288_003s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	20	4	0	0	0	0	0	0	0	0	0	0	24
01:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
02:00	0	5	2	0	0	0	0	0	0	0	0	0	0	7
03:00	0	6	3	0	0	0	0	0	0	0	1	0	0	10
04:00	0	19	7	0	2	0	0	0	0	0	0	0	0	28
05:00	0	51	29	1	8	0	0	0	0	0	1	0	0	90
06:00	0	90	50	1	18	0	0	1	0	0	0	0	0	160
07:00	0	160	69	0	16	0	0	0	0	0	0	0	0	245
08:00	1	247	86	3	24	0	0	4	0	0	0	0	0	365
09:00	0	267	75	0	27	0	0	1	0	0	0	0	0	370
10:00	0	237	81	1	9	0	0	0	0	0	1	0	0	329
11:00	0	297	105	1	17	0	0	0	0	0	0	0	0	420
12:00 PM	1	375	100	2	22	0	0	1	0	0	0	0	0	501
13:00	0	316	111	1	24	0	0	3	0	0	0	0	0	455
14:00	0	305	112	0	26	0	0	1	0	0	0	0	0	444
15:00	0	367	116	1	24	0	0	1	0	0	0	0	0	509
16:00	0	413	142	4	17	0	0	4	0	0	0	0	0	580
17:00	0	390	101	0	10	0	0	0	0	0	0	0	0	501
18:00	0	271	70	0	11	0	0	1	0	0	0	0	0	353
19:00	0	235	58	0	14	0	0	0	0	0	0	0	0	307
20:00	0	183	49	0	5	0	0	2	0	0	0	0	0	239
21:00	0	96	18	3	0	0	0	0	0	0	0	0	0	117
22:00	0	52	14	0	2	0	0	1	0	0	0	0	0	69
23:00	0	33	4	0	1	0	0	1	0	0	0	0	0	39
Totals	**2**	**4439**	**1406**	**18**	**277**			**21**			**3**			**6166**
% of Totals	0%	72%	23%	0%	4%			0%			0%			100%

AM Volumes	1	1403	511	7	121	0	0	6	0	0	3	0	0	2052
% AM	0%	23%	8%	0%	2%			0%			0%			33%
AM Peak Hour	08:00	11:00	11:00	08:00	09:00			08:00			03:00			11:00
Volume	1	297	105	3	27			4			1			420
PM Volumes	1	3036	895	11	156	0	0	15	0	0	0	0	0	4114
% PM	0%	49%	15%	0%	3%			0%						67%
PM Peak Hour	12:00	16:00	16:00	16:00	14:00			16:00						16:00
Volume	1	413	142	4	26			4						580

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	610		10%	956		16%	1081		18%	3519		57%

Classification Definitions

1	Motorcycles	**4**	Buses	**7**	> =4-Axle Single Units	**10**	>=6-Axle Single Trailers	**13**	>=7-Axle Multi-Trailers
2	Passenger Cars	**5**	2-Axle, 6-Tire Single Units	**8**	<=4-Axle Single Trailers	**11**	<=5-Axle Multi-Trailers		
3	2-Axle, 4-Tire Single Units	**6**	3-Axle Single Units	**9**	5-Axle Single Trailers	**12**	6-Axle Multi-Trailers		

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Thursday
Date: 9/5/2019

City: Grass Valley
Project #: CA19_7288_003

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	28	7	0	0	0	0	0	0	0	0	0	0	35
01:00	0	15	0	0	0	0	0	0	0	0	0	0	0	15
02:00	0	6	2	0	1	0	0	0	0	0	0	0	0	9
03:00	0	14	6	0	0	0	0	0	0	0	1	0	0	21
04:00	0	35	12	0	3	0	0	0	0	0	0	0	0	50
05:00	0	101	53	2	29	0	0	0	0	0	1	0	0	186
06:00	0	186	100	3	37	0	0	2	0	0	1	0	0	329
07:00	0	456	172	1	67	0	0	3	0	0	0	0	0	699
08:00	1	617	199	9	59	0	0	6	0	0	2	0	0	893
09:00	0	556	166	2	59	0	0	2	0	0	0	0	0	785
10:00	0	529	174	2	36	0	0	2	0	0	1	0	0	744
11:00	0	633	232	2	39	0	0	2	0	0	1	0	0	909
12:00 PM	1	708	200	4	37	0	0	2	0	0	0	0	0	952
13:00	0	613	198	1	46	0	0	9	0	0	0	0	0	867
14:00	0	636	223	0	46	0	0	3	0	0	0	0	0	908
15:00	0	739	252	1	44	0	0	2	0	0	0	0	0	1038
16:00	0	828	289	7	38	0	0	5	0	0	0	0	0	1167
17:00	0	735	187	1	17	0	0	1	0	0	0	0	0	941
18:00	0	499	120	0	21	0	0	1	0	0	0	0	0	641
19:00	0	374	93	0	17	0	0	0	0	0	0	0	0	484
20:00	0	283	78	2	13	0	0	2	0	0	0	0	0	378
21:00	0	166	28	3	1	0	0	1	0	0	1	0	0	200
22:00	0	85	20	0	3	0	0	1	0	0	0	0	0	109
23:00	0	52	11	0	1	0	0	1	0	0	0	0	0	65
Totals	2	8894	2822	40	614			45			8			12425
% of Totals	0%	72%	23%	0%	5%			0%			0%			100%

AM Volumes	1	3176	1123	21	330	0	0	17	0	0	7	0	0	4675
% AM	0%	26%	9%	0%	3%			0%			0%			38%
AM Peak Hour	08:00	11:00	11:00	08:00	07:00			08:00			08:00			11:00
Volume	1	633	232	9	67			6			2			909
PM Volumes	1	5718	1699	19	284	0	0	28	0	0	1	0	0	7750
% PM	0%	46%	14%	0%	2%			0%			0%			62%
PM Peak Hour	12:00	16:00	16:00	16:00	13:00			13:00			21:00			16:00
Volume	1	828	289	7	46			9			1			1167

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	1592	13%	1819	15%	2108	17%	6906	56%

Classification Definitions

1	Motorcycles	**4**	Buses	**7**	> =4-Axle Single Units	**10**	>=6-Axle Single Trailers	**13**	>=7-Axle Multi-Trailers
2	Passenger Cars	**5**	2-Axle, 6-Tire Single Units	**8**	<=4-Axle Single Trailers	**11**	<=5-Axle Multi-Trailers		
3	2-Axle, 4-Tire Single Units	**6**	3-Axle Single Units	**9**	5-Axle Single Trailers	**12**	6-Axle Multi-Trailers		

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Friday
Date: 9/6/2019

City: Grass Valley
Project #: CA19_7288_003

DAILY TOTALS	NB	SB	EB	WB	Total
	6,239	6,217	0	0	12,456

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	9		9		0	0	18		**12:00**	160		111		0	0	271	
00:15	4		7		0	0	11		**12:15**	124		140		0	0	264	
00:30	3		4		0	0	7		**12:30**	144		131		0	0	275	
00:45	3	19	0	20	0	0	3	39	**12:45**	139	567	134	516	0	0	273	1083
01:00	1		4		0	0	5		**13:00**	110		112		0	0	222	
01:15	2		2		0	0	4		**13:15**	116		146		0	0	262	
01:30	3		0		0	0	3		**13:30**	98		129		0	0	227	
01:45	2	8	4	10	0	0	6	18	**13:45**	125	449	128	515	0	0	253	964
02:00	0		3		0	0	3		**14:00**	135		156		0	0	291	
02:15	0		0		0	0			**14:15**	116		119		0	0	235	
02:30	1		3		0	0	4		**14:30**	121		114		0	0	235	
02:45	1	2	2	8	0	0	3	10	**14:45**	106	478	139	528	0	0	245	1006
03:00	3		2		0	0	5		**15:00**	122		140		0	0	262	
03:15	1		0		0	0	1		**15:15**	113		125		0	0	238	
03:30	2		5		0	0	7		**15:30**	129		93		0	0	222	
03:45	3	9	4	11	0	0	7	20	**15:45**	144	508	168	526	0	0	312	1034
04:00	3		4		0	0	7		**16:00**	120		117		0	0	237	
04:15	2		10		0	0	12		**16:15**	119		153		0	0	272	
04:30	9		9		0	0	18		**16:30**	145		123		0	0	268	
04:45	8	22	6	29	0	0	14	51	**16:45**	122	506	137	530	0	0	259	1036
05:00	9		5		0	0	14		**17:00**	131		120		0	0	251	
05:15	18		14		0	0	32		**17:15**	142		107		0	0	249	
05:30	24		20		0	0	44		**17:30**	95		112		0	0	207	
05:45	27	78	19	58	0	0	46	136	**17:45**	110	478	102	441	0	0	212	919
06:00	22		25		0	0	47		**18:00**	64		98		0	0	162	
06:15	24		23		0	0	47		**18:15**	76		96		0	0	172	
06:30	42		27		0	0	69		**18:30**	67		73		0	0	140	
06:45	57	145	55	130	0	0	112	275	**18:45**	64	271	87	354	0	0	151	625
07:00	58		56		0	0	114		**19:00**	50		53		0	0	103	
07:15	66		48		0	0	114		**19:15**	48		62		0	0	110	
07:30	98		64		0	0	162		**19:30**	50		74		0	0	124	
07:45	128	350	57	225	0	0	185	575	**19:45**	38	186	55	244	0	0	93	430
08:00	145		76		0	0	221		**20:00**	29		53		0	0	82	
08:15	139		89		0	0	228		**20:15**	31		53		0	0	84	
08:30	121		95		0	0	216		**20:30**	21		44		0	0	65	
08:45	119	524	108	368	0	0	227	892	**20:45**	19	100	54	204	0	0	73	304
09:00	116		85		0	0	201		**21:00**	17		38		0	0	55	
09:15	113		80		0	0	193		**21:15**	14		38		0	0	52	
09:30	90		79		0	0	169		**21:30**	26		31		0	0	57	
09:45	100	419	95	339	0	0	195	758	**21:45**	18	75	40	147	0	0	58	222
10:00	119		104		0	0	223		**22:00**	18		33		0	0	51	
10:15	131		103		0	0	234		**22:15**	8		37		0	0	45	
10:30	104		83		0	0	187		**22:30**	13		22		0	0	35	
10:45	101	455	99	389	0	0	200	844	**22:45**	10	49	18	110	0	0	28	159
11:00	106		104		0	0	210		**23:00**	10		14		0	0	24	
11:15	117		119		0	0	236		**23:15**	5		19		0	0	24	
11:30	133		108		0	0	241		**23:30**	10		16		0	0	26	
11:45	156	512	123	454	0	0	279	966	**23:45**	4	29	12	61	0	0	16	90
TOTALS		2543		2041				**4584**	**TOTALS**		3696		4176				**7872**
SPLIT %		55.5%		44.5%				**36.8%**	**SPLIT %**		47.0%		53.0%				**63.2%**

DAILY TOTALS	NB	SB	EB	WB	Total
	6,239	6,217	0	0	12,456

AM Peak Hour	11:45		11:45					**11:45**	**PM Peak Hour**	12:00		15:45					**15:45**
AM Pk Volume	584		505					**1089**	**PM Pk Volume**	567		561					**1089**
Pk Hr Factor	0.913		0.902					**0.976**	**Pk Hr Factor**	0.886		0.835					**0.873**
7 - 9 Volume	874		593		0	0		**1467**	**4 - 6 Volume**	984		971		0	0		**1955**
7 - 9 Peak Hour	07:45		08:00					**08:00**	**4 - 6 Peak Hour**	16:30		16:15					**16:15**
7 - 9 Pk Volume	533		368		0	0		**892**	**4 - 6 Pk Volume**	540		533		0	0		**1050**
Pk Hr Factor	0.919		0.852		0.000	0.000		**0.978**	**Pk Hr Factor**	0.931		0.871		0.000	0.000		**0.965**

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Friday
Date: 9/6/2019

City: Grass Valley
Project #: CA19_7288_003n

North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	16	3	0	0	0	0	0	0	0	0	0	0	19
01:00	0	6	2	0	0	0	0	0	0	0	0	0	0	8
02:00	0	1	0	0	1	0	0	0	0	0	0	0	0	2
03:00	0	7	2	0	0	0	0	0	0	0	0	0	0	9
04:00	0	13	8	0	1	0	0	0	0	0	0	0	0	22
05:00	1	46	12	2	16	0	0	1	0	0	0	0	0	78
06:00	0	86	39	2	15	0	0	0	0	0	3	0	0	145
07:00	1	225	94	0	25	0	0	4	0	0	1	0	0	350
08:00	1	366	115	3	35	1	0	3	0	0	0	0	0	524
09:00	0	299	98	0	22	0	0	0	0	0	0	0	0	419
10:00	1	314	103	4	29	2	0	2	0	0	0	0	0	455
11:00	0	368	103	1	38	1	0	1	0	0	0	0	0	512
12:00 PM	0	418	117	1	29	0	0	2	0	0	0	0	0	567
13:00	0	322	95	2	30	0	0	0	0	0	0	0	0	449
14:00	0	334	111	2	29	1	0	1	0	0	0	0	0	478
15:00	1	360	109	1	31	1	0	5	0	0	0	0	0	508
16:00	0	371	105	1	26	0	0	3	0	0	0	0	0	506
17:00	0	359	103	1	13	1	0	1	0	0	0	0	0	478
18:00	0	211	48	2	8	0	0	2	0	0	0	0	0	271
19:00	0	138	43	0	5	0	0	0	0	0	0	0	0	186
20:00	0	73	23	0	4	0	0	0	0	0	0	0	0	100
21:00	0	64	8	0	1	0	0	1	0	0	1	0	0	75
22:00	0	38	9	0	2	0	0	0	0	0	0	0	0	49
23:00	0	20	7	0	2	0	0	0	0	0	0	0	0	29
Totals	**5**	**4455**	**1357**	**22**	**362**	**7**		**26**			**5**			**6239**
% of Totals	0%	71%	22%	0%	6%	0%		0%			0%			100%

AM Volumes	4	1747	579	12	182	4	0	11	0	0	4	0	0	2543
% AM	0%	28%	9%	0%	3%	0%		0%			0%			41%
AM Peak Hour	05:00	11:00	08:00	10:00	11:00	10:00		07:00			06:00			08:00
Volume	1	368	115	4	38	2		4			3			524
PM Volumes	1	2708	778	10	180	3	0	15	0	0	1	0	0	3696
% PM	0%	43%	12%	0%	3%	0%		0%			0%			59%
PM Peak Hour	15:00	12:00	12:00	13:00	15:00	14:00		15:00			21:00			12:00
Volume	1	418	117	2	31	1		5			1			567

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	874		14%	1016		16%	984		16%	3365		54%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Friday
Date: 9/6/2019

City: Grass Valley
Project #: CA19_7288_003s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	19	1	0	0	0	0	0	0	0	0	0	0	20
01:00	0	7	3	0	0	0	0	0	0	0	0	0	0	10
02:00	0	4	3	0	0	0	0	0	0	0	1	0	0	8
03:00	0	7	4	0	0	0	0	0	0	0	0	0	0	11
04:00	0	19	7	0	3	0	0	0	0	0	0	0	0	29
05:00	0	31	22	1	3	0	0	0	0	0	1	0	0	58
06:00	0	84	31	0	15	0	0	0	0	0	0	0	0	130
07:00	0	157	53	0	12	0	0	3	0	0	0	0	0	225
08:00	0	245	99	1	23	0	0	0	0	0	0	0	0	368
09:00	0	228	83	1	26	0	0	1	0	0	0	0	0	339
10:00	0	262	92	2	31	0	0	2	0	0	0	0	0	389
11:00	0	323	94	2	33	0	0	2	0	0	0	0	0	454
12:00 PM	0	364	121	1	30	0	0	0	0	0	0	0	0	516
13:00	0	362	125	2	22	0	0	4	0	0	0	0	0	515
14:00	1	367	121	2	36	0	0	1	0	0	0	0	0	528
15:00	0	377	107	1	34	4	0	2	0	0	1	0	0	526
16:00	0	379	125	3	21	0	0	2	0	0	0	0	0	530
17:00	0	340	86	0	15	0	0	0	0	0	0	0	0	441
18:00	0	270	70	0	14	0	0	0	0	0	0	0	0	354
19:00	0	190	44	2	8	0	0	0	0	0	0	0	0	244
20:00	0	157	42	0	4	0	0	1	0	0	0	0	0	204
21:00	0	115	30	0	2	0	0	0	0	0	0	0	0	147
22:00	0	91	16	0	3	0	0	0	0	0	0	0	0	110
23:00	0	51	8	0	1	0	0	1	0	0	0	0	0	61
Totals	**1**	**4449**	**1387**	**18**	**336**	**4**		**19**			**3**			**6217**
% of Totals	0%	72%	22%	0%	5%	0%		0%			0%			100%

AM Volumes	0	1386	492	7	146	0	0	8	0	0	2	0	0	2041
% AM		22%	8%	0%	2%			0%			0%			33%
AM Peak Hour		11:00	08:00	10:00	11:00			07:00			02:00			11:00
Volume		323	99	2	33			3			1			454
PM Volumes	1	3063	895	11	190	4	0	11	0	0	1	0	0	4176
% PM	0%	49%	14%	0%	3%	0%		0%			0%			67%
PM Peak Hour	14:00	16:00	13:00	16:00	14:00	15:00		13:00			15:00			16:00
Volume	1	379	125	3	36	4		4			1			530

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	593	10%	1031	17%	971	16%	3622	58%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Friday
Date: 9/6/2019

City: Grass Valley
Project #: CA19_7288_003

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	35	4	0	0	0	0	0	0	0	0	0	0	39
01:00	0	13	5	0	0	0	0	0	0	0	0	0	0	18
02:00	0	5	3	0	1	0	0	0	0	0	1	0	0	10
03:00	0	14	6	0	0	0	0	0	0	0	0	0	0	20
04:00	0	32	15	0	4	0	0	0	0	0	0	0	0	51
05:00	1	77	34	3	19	0	0	1	0	0	1	0	0	136
06:00	0	170	70	2	30	0	0	0	0	0	3	0	0	275
07:00	1	382	147	0	37	0	0	7	0	0	1	0	0	575
08:00	1	611	214	4	58	1	0	3	0	0	0	0	0	892
09:00	0	527	181	1	48	0	0	1	0	0	0	0	0	758
10:00	1	576	195	6	60	2	0	4	0	0	0	0	0	844
11:00	0	691	197	3	71	1	0	3	0	0	0	0	0	966
12:00 PM	0	782	238	2	59	0	0	2	0	0	0	0	0	1083
13:00	0	684	220	4	52	0	0	4	0	0	0	0	0	964
14:00	1	701	232	4	65	1	0	2	0	0	0	0	0	1006
15:00	1	737	216	2	65	5	0	7	0	0	1	0	0	1034
16:00	0	750	230	4	47	0	0	5	0	0	0	0	0	1036
17:00	0	699	189	1	28	1	0	1	0	0	0	0	0	919
18:00	0	481	118	2	22	0	0	2	0	0	0	0	0	625
19:00	0	328	87	2	13	0	0	0	0	0	0	0	0	430
20:00	0	230	65	0	8	0	0	1	0	0	0	0	0	304
21:00	0	179	38	0	3	0	0	1	0	0	1	0	0	222
22:00	0	129	25	0	5	0	0	0	0	0	0	0	0	159
23:00	0	71	15	0	3	0	0	1	0	0	0	0	0	90
Totals	6	8904	2744	40	698	11		45			8			12456
% of Totals	0%	71%	22%	0%	6%	0%		0%			0%			100%

AM Volumes	4	3133	1071	19	328	4	0	19	0	0	6	0	0	4584
% AM	0%	25%	9%	0%	3%	0%		0%			0%			37%
AM Peak Hour	05:00	11:00	08:00	10:00	11:00	10:00		07:00			06:00			11:00
Volume	1	691	214	6	71	2		7			3			966
PM Volumes	2	5771	1673	21	370	7	0	26	0	0	2	0	0	7872
% PM	0%	46%	13%	0%	3%	0%		0%			0%			63%
PM Peak Hour	14:00	12:00	12:00	13:00	14:00	15:00		15:00			15:00			12:00
Volume	1	782	238	4	65	5		7			1			1083

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	1467	12%	2047	16%	1955	16%	6987	56%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Saturday
Date: 9/7/2019

City: Grass Valley
Project #: CA19_7288_003

DAILY TOTALS	NB	SB	EB	WB	Total
	4,686	4,491	0	0	9,177

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	6		9		0	0	15		**12:00**	121		114		0	0	235	
00:15	2		10		0	0	12		**12:15**	130		106		0	0	236	
00:30	4		7		0	0	11		**12:30**	119		95		0	0	214	
00:45	5	17	4	30	0	0	9	47	**12:45**	111	481	112	427	0	0	223	908
01:00	2		6		0	0	8		**13:00**	76		108		0	0	184	
01:15	1		7		0	0	8		**13:15**	69		96		0	0	165	
01:30	5		4		0	0	9		**13:30**	98		92		0	0	190	
01:45	1	9	5	22	0	0	6	31	**13:45**	96	339	109	405	0	0	205	744
02:00	4		4		0	0	8		**14:00**	81		81		0	0	162	
02:15	2		4		0	0	6		**14:15**	77		100		0	0	177	
02:30	2		1		0	0	3		**14:30**	85		92		0	0	177	
02:45	0	8	3	12	0	0	3	20	**14:45**	90	333	90	363	0	0	180	696
03:00	1		5		0	0	6		**15:00**	82		97		0	0	179	
03:15	1		2		0	0	3		**15:15**	80		99		0	0	179	
03:30	2		2		0	0	4		**15:30**	66		96		0	0	162	
03:45	3	7	0	9	0	0	3	16	**15:45**	102	330	69	361	0	0	171	691
04:00	0		3		0	0	3		**16:00**	93		83		0	0	176	
04:15	3		1		0	0	4		**16:15**	105		71		0	0	176	
04:30	1		0		0	0	1		**16:30**	76		81		0	0	157	
04:45	6	10	2	6	0	0	8	16	**16:45**	61	335	76	311	0	0	137	646
05:00	4		3		0	0	7		**17:00**	61		71		0	0	132	
05:15	3		5		0	0	8		**17:15**	79		69		0	0	148	
05:30	8		9		0	0	17		**17:30**	72		75		0	0	147	
05:45	14	29	14	31	0	0	28	60	**17:45**	72	284	78	293	0	0	150	577
06:00	9		12		0	0	21		**18:00**	85		57		0	0	142	
06:15	16		14		0	0	30		**18:15**	62		68		0	0	130	
06:30	20		14		0	0	34		**18:30**	49		63		0	0	112	
06:45	26	71	11	51	0	0	37	122	**18:45**	63	259	59	247	0	0	122	506
07:00	30		8		0	0	38		**19:00**	43		63		0	0	106	
07:15	40		18		0	0	58		**19:15**	46		55		0	0	101	
07:30	49		21		0	0	70		**19:30**	22		41		0	0	63	
07:45	64	183	30	77	0	0	94	260	**19:45**	24	135	61	220	0	0	85	355
08:00	63		30		0	0	93		**20:00**	35		54		0	0	89	
08:15	49		36		0	0	85		**20:15**	27		47		0	0	74	
08:30	108		45		0	0	153		**20:30**	32		46		0	0	78	
08:45	98	318	63	174	0	0	161	492	**20:45**	33	127	43	190	0	0	76	317
09:00	85		55		0	0	140		**21:00**	12		52		0	0	64	
09:15	90		53		0	0	143		**21:15**	22		42		0	0	64	
09:30	97		74		0	0	171		**21:30**	22		35		0	0	57	
09:45	120	392	89	271	0	0	209	663	**21:45**	16	72	26	155	0	0	42	227
10:00	121		78		0	0	199		**22:00**	26		11		0	0	37	
10:15	108		75		0	0	183		**22:15**	20		27		0	0	47	
10:30	81		85		0	0	166		**22:30**	15		20		0	0	35	
10:45	91	401	95	333	0	0	186	734	**22:45**	13	74	16	74	0	0	29	148
11:00	103		82		0	0	185		**23:00**	18		16		0	0	34	
11:15	109		84		0	0	193		**23:15**	6		14		0	0	20	
11:30	105		100		0	0	205		**23:30**	9		17		0	0	26	
11:45	118	435	103	369	0	0	221	804	**23:45**	4	37	13	60	0	0	17	97
TOTALS		1880		1385				**3265**	**TOTALS**		2806		3106				**5912**
SPLIT %		57.6%		42.4%				**35.6%**	**SPLIT %**		47.5%		52.5%				**64.4%**

DAILY TOTALS	NB	SB	EB	WB	Total
	4,686	4,491	0	0	9,177

AM Peak Hour	11:45		11:30					**11:45**	**PM Peak Hour**	12:00		12:00					**12:00**
AM Pk Volume	488		423					**906**	**PM Pk Volume**	481		427					**908**
Pk Hr Factor	0.938		0.928					**0.960**	**Pk Hr Factor**	0.925		0.936					**0.962**
7 - 9 Volume	501		251		0	0		**752**	**4 - 6 Volume**	619		604		0	0		**1223**
7 - 9 Peak Hour	08:00		08:00					**08:00**	**4 - 6 Peak Hour**	16:00		16:00					**16:00**
7 - 9 Pk Volume	318		174		0	0		**492**	**4 - 6 Pk Volume**	335		311		0	0		**646**
Pk Hr Factor	0.736		0.690		0.000	0.000		**0.764**	**Pk Hr Factor**	0.798		0.937		0.000	0.000		**0.918**

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Saturday
Date: 9/7/2019

City: Grass Valley
Project #: CA19_7288_003n

North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	14	3	0	0	0	0	0	0	0	0	0	0	17
01:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
02:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
03:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
04:00	0	4	4	0	2	0	0	0	0	0	0	0	0	10
05:00	0	24	5	0	0	0	0	0	0	0	0	0	0	29
06:00	0	48	22	0	0	0	0	1	0	0	0	0	0	71
07:00	0	111	52	0	20	0	0	0	0	0	0	0	0	183
08:00	0	235	71	0	12	0	0	0	0	0	0	0	0	318
09:00	0	286	94	0	12	0	0	0	0	0	0	0	0	392
10:00	0	304	83	0	13	0	0	1	0	0	0	0	0	401
11:00	0	322	99	0	14	0	0	0	0	0	0	0	0	435
12:00 PM	0	354	113	0	13	0	0	1	0	0	0	0	0	481
13:00	0	261	65	1	12	0	0	0	0	0	0	0	0	339
14:00	0	256	62	1	14	0	0	0	0	0	0	0	0	333
15:00	0	256	63	1	10	0	0	0	0	0	0	0	0	330
16:00	0	263	62	0	9	0	0	1	0	0	0	0	0	335
17:00	0	224	54	0	6	0	0	0	0	0	0	0	0	284
18:00	0	206	46	1	6	0	0	0	0	0	0	0	0	259
19:00	0	105	27	0	3	0	0	0	0	0	0	0	0	135
20:00	0	101	21	0	5	0	0	0	0	0	0	0	0	127
21:00	0	62	10	0	0	0	0	0	0	0	0	0	0	72
22:00	0	60	12	0	2	0	0	0	0	0	0	0	0	74
23:00	0	30	6	0	1	0	0	0	0	0	0	0	0	37
Totals		**3547**	**977**	**4**	**154**			**4**						**4686**
% of Totals		76%	21%	0%	3%			0%						100%

AM Volumes	0	1369	436	0	73	0	0	2	0	0	0	0	0	1880
% AM		29%	9%		2%			0%						40%
AM Peak Hour		11:00	11:00		07:00			06:00						11:00
Volume		322	99		20			1						435
PM Volumes	0	2178	541	4	81	0	0	2	0	0	0	0	0	2806
% PM		46%	12%	0%	2%			0%						60%
PM Peak Hour		12:00	12:00	13:00	14:00			12:00						12:00
Volume		354	113	1	14			1						481

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	501		11%	820		17%	619		13%	2746		59%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Saturday
Date: 9/7/2019

City: Grass Valley
Project #: CA19_7288_003s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	24	6	0	0	0	0	0	0	0	0	0	0	30
01:00	0	13	9	0	0	0	0	0	0	0	0	0	0	22
02:00	0	8	3	0	1	0	0	0	0	0	0	0	0	12
03:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
04:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
05:00	0	16	11	0	4	0	0	0	0	0	0	0	0	31
06:00	0	31	17	0	3	0	0	0	0	0	0	0	0	51
07:00	0	49	25	0	3	0	0	0	0	0	0	0	0	77
08:00	0	123	40	0	10	0	0	1	0	0	0	0	0	174
09:00	0	188	74	1	7	0	0	0	0	0	1	0	0	271
10:00	0	249	77	0	7	0	0	0	0	0	0	0	0	333
11:00	0	269	86	0	12	0	0	2	0	0	0	0	0	369
12:00 PM	0	311	99	0	16	0	0	0	0	0	1	0	0	427
13:00	0	311	79	0	15	0	0	0	0	0	0	0	0	405
14:00	0	270	84	0	8	0	0	1	0	0	0	0	0	363
15:00	0	280	74	0	7	0	0	0	0	0	0	0	0	361
16:00	0	241	62	0	8	0	0	0	0	0	0	0	0	311
17:00	0	232	49	2	10	0	0	0	0	0	0	0	0	293
18:00	0	191	51	0	4	0	0	1	0	0	0	0	0	247
19:00	0	170	46	0	4	0	0	0	0	0	0	0	0	220
20:00	0	156	33	0	1	0	0	0	0	0	0	0	0	190
21:00	0	128	22	0	5	0	0	0	0	0	0	0	0	155
22:00	0	57	16	0	1	0	0	0	0	0	0	0	0	74
23:00	0	53	6	0	1	0	0	0	0	0	0	0	0	60
Totals		**3385**	**969**	**3**	**127**			**5**			**2**			**4491**
% of Totals		75%	22%	0%	3%			0%			0%			100%

AM Volumes	0	985	348	1	47	0	0	3	0	0	1	0	0	1385
% AM		22%	8%	0%	1%			0%			0%			31%
AM Peak Hour		11:00	11:00	09:00	11:00			11:00			09:00			11:00
Volume		269	86	1	12			2			1			369
PM Volumes	0	2400	621	2	80	0	0	2	0	0	1	0	0	3106
% PM		53%	14%	0%	2%			0%			0%			69%
PM Peak Hour		12:00	12:00	17:00	12:00			14:00			12:00			12:00
Volume		311	99	2	16			1			1			427

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	251		6%	832		19%	604		13%	2804		62%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Saturday
Date: 9/7/2019

City: Grass Valley
Project #: CA19_7288_003

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	38	9	0	0	0	0	0	0	0	0	0	0	47
01:00	0	21	10	0	0	0	0	0	0	0	0	0	0	31
02:00	0	15	4	0	1	0	0	0	0	0	0	0	0	20
03:00	0	15	1	0	0	0	0	0	0	0	0	0	0	16
04:00	0	10	4	0	2	0	0	0	0	0	0	0	0	16
05:00	0	40	16	0	4	0	0	0	0	0	0	0	0	60
06:00	0	79	39	0	3	0	0	1	0	0	0	0	0	122
07:00	0	160	77	0	23	0	0	0	0	0	0	0	0	260
08:00	0	358	111	0	22	0	0	1	0	0	0	0	0	492
09:00	0	474	168	1	19	0	0	0	0	0	1	0	0	663
10:00	0	553	160	0	20	0	0	1	0	0	0	0	0	734
11:00	0	591	185	0	26	0	0	2	0	0	0	0	0	804
12:00 PM	0	665	212	0	29	0	0	1	0	0	1	0	0	908
13:00	0	572	144	1	27	0	0	0	0	0	0	0	0	744
14:00	0	526	146	1	22	0	0	1	0	0	0	0	0	696
15:00	0	536	137	1	17	0	0	0	0	0	0	0	0	691
16:00	0	504	124	0	17	0	0	1	0	0	0	0	0	646
17:00	0	456	103	2	16	0	0	0	0	0	0	0	0	577
18:00	0	397	97	1	10	0	0	1	0	0	0	0	0	506
19:00	0	275	73	0	7	0	0	0	0	0	0	0	0	355
20:00	0	257	54	0	6	0	0	0	0	0	0	0	0	317
21:00	0	190	32	0	5	0	0	0	0	0	0	0	0	227
22:00	0	117	28	0	3	0	0	0	0	0	0	0	0	148
23:00	0	83	12	0	2	0	0	0	0	0	0	0	0	97
Totals		6932	1946	7	281			9			2			9177
% of Totals		76%	21%	0%	3%			0%			0%			100%

AM Volumes	0	2354	784	1	120	0	0	5	0	0	1	0	0	3265
% AM		26%	9%	0%	1%			0%			0%			36%
AM Peak Hour		11:00	11:00	09:00	11:00			11:00			09:00			11:00
Volume		591	185	1	26			2			1			804
PM Volumes	0	4578	1162	6	161	0	0	4	0	0	1	0	0	5912
% PM		50%	13%	0%	2%			0%			0%			64%
PM Peak Hour		12:00	12:00	17:00	12:00			12:00			12:00			12:00
Volume		665	212	2	29			1			1			908

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	752		8%	1652		18%	1223		13%	5550		60%

Classification Definitions

1	Motorcycles	**4**	Buses	**7**	> =4-Axle Single Units	**10**	>=6-Axle Single Trailers	**13**	>=7-Axle Multi-Trailers
2	Passenger Cars	**5**	2-Axle, 6-Tire Single Units	**8**	<=4-Axle Single Trailers	**11**	<=5-Axle Multi-Trailers		
3	2-Axle, 4-Tire Single Units	**6**	3-Axle Single Units	**9**	5-Axle Single Trailers	**12**	6-Axle Multi-Trailers		

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Sunday
Date: 9/8/2019

City: Grass Valley
Project #: CA19_7288_003

DAILY TOTALS	NB	SB	EB	WB	Total
	3,478	3,492	0	0	6,970

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	4		4		0	0	8		**12:00**	95		88		0	0	183	
00:15	6		10		0	0	16		**12:15**	78		79		0	0	157	
00:30	9		12		0	0	21		**12:30**	94		90		0	0	184	
00:45	8	27	8	34	0	0	16	61	**12:45**	67	334	105	362	0	0	172	696
01:00	4		6		0	0	10		**13:00**	76		85		0	0	161	
01:15	4		5		0	0	9		**13:15**	91		87		0	0	178	
01:30	1		6		0	0	7		**13:30**	74		86		0	0	160	
01:45	1	10	2	19	0	0	3	29	**13:45**	74	315	82	340	0	0	156	655
02:00	2		5		0	0	7		**14:00**	64		68		0	0	132	
02:15	3		4		0	0	7		**14:15**	57		70		0	0	127	
02:30	0		2		0	0	2		**14:30**	71		75		0	0	146	
02:45	0	5	0	11	0	0		16	**14:45**	59	251	74	287	0	0	133	538
03:00	2		4		0	0	6		**15:00**	76		67		0	0	143	
03:15	2		1		0	0	3		**15:15**	76		64		0	0	140	
03:30	3		0		0	0	3		**15:30**	54		77		0	0	131	
03:45	4	11	1	6	0	0	5	17	**15:45**	57	263	69	277	0	0	126	540
04:00	2		2		0	0	4		**16:00**	63		84		0	0	147	
04:15	3		1		0	0	4		**16:15**	62		66		0	0	128	
04:30	3		0		0	0	3		**16:30**	71		55		0	0	126	
04:45	5	13	1	4	0	0	6	17	**16:45**	60	256	82	287	0	0	142	543
05:00	1		0		0	0	1		**17:00**	72		84		0	0	156	
05:15	0		1		0	0	1		**17:15**	58		56		0	0	114	
05:30	5		0		0	0	5		**17:30**	64		65		0	0	129	
05:45	8	14	2	3	0	0	10	17	**17:45**	64	258	67	272	0	0	131	530
06:00	7		1		0	0	8		**18:00**	50		47		0	0	97	
06:15	8		4		0	0	12		**18:15**	56		53		0	0	109	
06:30	15		9		0	0	24		**18:30**	50		53		0	0	103	
06:45	22	52	9	23	0	0	31	75	**18:45**	43	199	65	218	0	0	108	417
07:00	21		10		0	0	31		**19:00**	40		49		0	0	89	
07:15	18		9		0	0	27		**19:15**	38		58		0	0	96	
07:30	30		10		0	0	40		**19:30**	37		46		0	0	83	
07:45	35	104	25	54	0	0	60	158	**19:45**	29	144	43	196	0	0	72	340
08:00	38		20		0	0	58		**20:00**	25		35		0	0	60	
08:15	30		25		0	0	55		**20:15**	20		27		0	0	47	
08:30	42		22		0	0	64		**20:30**	27		31		0	0	58	
08:45	63	173	38	105	0	0	101	278	**20:45**	11	83	23	116	0	0	34	199
09:00	55		27		0	0	82		**21:00**	20		30		0	0	50	
09:15	60		38		0	0	98		**21:15**	15		21		0	0	36	
09:30	69		38		0	0	107		**21:30**	12		23		0	0	35	
09:45	57	241	60	163	0	0	117	404	**21:45**	14	61	27	101	0	0	41	162
10:00	70		58		0	0	128		**22:00**	12		22		0	0	34	
10:15	58		62		0	0	120		**22:15**	11		19		0	0	30	
10:30	90		62		0	0	152		**22:30**	8		17		0	0	25	
10:45	69	287	53	235	0	0	122	522	**22:45**	11	42	14	72	0	0	25	114
11:00	87		62		0	0	149		**23:00**	8		8		0	0	16	
11:15	73		61		0	0	134		**23:15**	9		10		0	0	19	
11:30	64		66		0	0	130		**23:30**	4		11		0	0	15	
11:45	88	312	83	272	0	0	171	584	**23:45**	2	23	6	35	0	0	8	58
TOTALS		1249		929				**2178**	**TOTALS**		2229		2563				**4792**
SPLIT %		57.3%		42.7%				**31.2%**	**SPLIT %**		46.5%		53.5%				**68.8%**

DAILY TOTALS	NB	SB	EB	WB	Total
	3,478	3,492	0	0	6,970

AM Peak Hour	11:45		11:45					**11:45**	**PM Peak Hour**	12:00		12:30					**12:00**
AM Pk Volume	355		340					**695**	**PM Pk Volume**	334		367					**696**
Pk Hr Factor	0.934		0.944					**0.944**	**Pk Hr Factor**	0.879		0.874					**0.946**
7 - 9 Volume	277		159		0	0		**436**	**4 - 6 Volume**	514		559		0	0		**1073**
7 - 9 Peak Hour	08:00		08:00					**08:00**	**4 - 6 Peak Hour**	16:15		16:00					**16:15**
7 - 9 Pk Volume	173		105		0	0		**278**	**4 - 6 Pk Volume**	265		287		0	0		**552**
Pk Hr Factor	0.687		0.691		0.000	0.000		**0.688**	**Pk Hr Factor**	0.920		0.854		0.000	0.000		**0.885**

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Sunday
Date: 9/8/2019

City: Grass Valley
Project #: CA19_7288_003n

North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	20	6	0	1	0	0	0	0	0	0	0	0	27
01:00	0	9	1	0	0	0	0	0	0	0	0	0	0	10
02:00	0	3	2	0	0	0	0	0	0	0	0	0	0	5
03:00	0	11	0	0	0	0	0	0	0	0	0	0	0	11
04:00	0	11	2	0	0	0	0	0	0	0	0	0	0	13
05:00	0	11	2	0	1	0	0	0	0	0	0	0	0	14
06:00	0	36	13	0	3	0	0	0	0	0	0	0	0	52
07:00	0	74	26	0	4	0	0	0	0	0	0	0	0	104
08:00	0	133	30	0	9	0	0	1	0	0	0	0	0	173
09:00	0	182	53	0	6	0	0	0	0	0	0	0	0	241
10:00	0	207	71	0	7	0	0	2	0	0	0	0	0	287
11:00	0	235	68	2	7	0	0	0	0	0	0	0	0	312
12:00 PM	0	271	56	0	6	0	0	1	0	0	0	0	0	334
13:00	0	238	68	0	9	0	0	0	0	0	0	0	0	315
14:00	0	193	50	0	7	0	0	1	0	0	0	0	0	251
15:00	0	205	53	0	4	0	0	1	0	0	0	0	0	263
16:00	0	196	54	0	6	0	0	0	0	0	0	0	0	256
17:00	0	205	45	0	8	0	0	0	0	0	0	0	0	258
18:00	0	157	34	0	8	0	0	0	0	0	0	0	0	199
19:00	0	118	24	0	1	0	0	1	0	0	0	0	0	144
20:00	0	74	8	0	1	0	0	0	0	0	0	0	0	83
21:00	0	47	9	0	5	0	0	0	0	0	0	0	0	61
22:00	0	34	8	0	0	0	0	0	0	0	0	0	0	42
23:00	0	18	5	0	0	0	0	0	0	0	0	0	0	23
Totals		**2688**	**688**	**2**	**93**			**7**						**3478**
% of Totals		77%	20%	0%	3%			0%						100%

AM Volumes	0	932	274	2	38	0	0	3	0	0	0	0	0	1249
% AM		27%	8%	0%	1%			0%						36%
AM Peak Hour		11:00	10:00	11:00	08:00			10:00						11:00
Volume		235	71	2	9			2						312
PM Volumes	0	1756	414	0	55	0	0	4	0	0	0	0	0	2229
% PM		50%	12%		2%			0%						64%
PM Peak Hour		12:00	13:00		13:00			12:00						12:00
Volume		271	68		9			1						334

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	277		8%	649		19%	514		15%	2038		59%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Sunday
Date: 9/8/2019

City: Grass Valley
Project #: CA19_7288_003s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	30	3	0	1	0	0	0	0	0	0	0	0	34
01:00	0	16	3	0	0	0	0	0	0	0	0	0	0	19
02:00	0	10	1	0	0	0	0	0	0	0	0	0	0	11
03:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
04:00	0	3	0	0	1	0	0	0	0	0	0	0	0	4
05:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
06:00	0	11	9	0	3	0	0	0	0	0	0	0	0	23
07:00	0	33	19	0	2	0	0	0	0	0	0	0	0	54
08:00	0	78	25	0	2	0	0	0	0	0	0	0	0	105
09:00	0	128	32	0	3	0	0	0	0	0	0	0	0	163
10:00	0	185	44	0	6	0	0	0	0	0	0	0	0	235
11:00	0	204	63	0	4	0	0	1	0	0	0	0	0	272
12:00 PM	0	284	69	0	8	0	0	1	0	0	0	0	0	362
13:00	0	266	67	0	6	0	0	1	0	0	0	0	0	340
14:00	0	228	52	0	7	0	0	0	0	0	0	0	0	287
15:00	0	219	54	0	4	0	0	0	0	0	0	0	0	277
16:00	0	232	53	0	2	0	0	0	0	0	0	0	0	287
17:00	0	209	57	0	6	0	0	0	0	0	0	0	0	272
18:00	0	156	54	0	6	0	0	2	0	0	0	0	0	218
19:00	0	157	32	0	6	0	0	1	0	0	0	0	0	196
20:00	0	91	24	0	1	0	0	0	0	0	0	0	0	116
21:00	0	79	18	0	4	0	0	0	0	0	0	0	0	101
22:00	0	57	10	0	4	0	0	1	0	0	0	0	0	72
23:00	0	28	6	0	1	0	0	0	0	0	0	0	0	35
Totals		**2711**	**697**		**77**			**7**						**3492**
% of Totals		78%	20%		2%			0%						100%

AM Volumes	0	705	201	0	22	0	0	1	0	0	0	0	0	929
% AM		20%	6%		1%			0%						27%
AM Peak Hour		11:00	11:00		10:00			11:00						11:00
Volume		204	63		6			1						272
PM Volumes	0	2006	496	0	55	0	0	6	0	0	0	0	0	2563
% PM		57%	14%		2%			0%						73%
PM Peak Hour		12:00	12:00		12:00			18:00						12:00
Volume		284	69		8			2						362

Directional Peak Periods	**AM 7-9**		**NOON 12-2**		**PM 4-6**		**Off Peak Volumes**	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	159	5%	702	20%	559	16%	2072	59%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Sunday
Date: 9/8/2019

City: Grass Valley
Project #: CA19_7288_003

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	50	9	0	2	0	0	0	0	0	0	0	0	**61**
01:00	0	25	4	0	0	0	0	0	0	0	0	0	0	**29**
02:00	0	13	3	0	0	0	0	0	0	0	0	0	0	**16**
03:00	0	15	2	0	0	0	0	0	0	0	0	0	0	**17**
04:00	0	14	2	0	1	0	0	0	0	0	0	0	0	**17**
05:00	0	14	2	0	1	0	0	0	0	0	0	0	0	**17**
06:00	0	47	22	0	6	0	0	0	0	0	0	0	0	**75**
07:00	0	107	45	0	6	0	0	0	0	0	0	0	0	**158**
08:00	0	211	55	0	11	0	0	1	0	0	0	0	0	**278**
09:00	0	310	85	0	9	0	0	0	0	0	0	0	0	**404**
10:00	0	392	115	0	13	0	0	2	0	0	0	0	0	**522**
11:00	0	439	131	2	11	0	0	1	0	0	0	0	0	**584**
12:00 PM	0	555	125	0	14	0	0	2	0	0	0	0	0	**696**
13:00	0	504	135	0	15	0	0	1	0	0	0	0	0	**655**
14:00	0	421	102	0	14	0	0	1	0	0	0	0	0	**538**
15:00	0	424	107	0	8	0	0	1	0	0	0	0	0	**540**
16:00	0	428	107	0	8	0	0	0	0	0	0	0	0	**543**
17:00	0	414	102	0	14	0	0	0	0	0	0	0	0	**530**
18:00	0	313	88	0	14	0	0	2	0	0	0	0	0	**417**
19:00	0	275	56	0	7	0	0	2	0	0	0	0	0	**340**
20:00	0	165	32	0	2	0	0	0	0	0	0	0	0	**199**
21:00	0	126	27	0	9	0	0	0	0	0	0	0	0	**162**
22:00	0	91	18	0	4	0	0	1	0	0	0	0	0	**114**
23:00	0	46	11	0	1	0	0	0	0	0	0	0	0	**58**
Totals		**5399**	**1385**	**2**	**170**			**14**						**6970**
% of Totals		77%	20%	0%	2%			0%						100%

AM Volumes	0	1637	475	2	60	0	0	4	0	0	0	0	0	2178
% AM		23%	7%	0%	1%			0%						31%
AM Peak Hour		11:00	11:00	11:00	10:00			10:00						11:00
Volume		439	131	2	13			2						584
PM Volumes	0	3762	910	0	110	0	0	10	0	0	0	0	0	4792
% PM		54%	13%		2%			0%						69%
PM Peak Hour		12:00	13:00		13:00			12:00						12:00
Volume		555	135		15			2						696

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	436		6%	1351		19%	1073		15%	4110		59%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Monday
Date: 9/9/2019

City: Grass Valley
Project #: CA19_7288_003

DAILY TOTALS	NB	SB	EB	WB	Total
	5,928	5,779	0	0	11,707

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	5		4		0	0	9		**12:00**	132		115		0	0	247	
00:15	3		8		0	0	11		**12:15**	101		142		0	0	243	
00:30	2		3		0	0	5		**12:30**	123		122		0	0	245	
00:45	2	12	2	17	0	0	4	29	**12:45**	121	477	141	520	0	0	262	997
01:00	0		4		0	0	4		**13:00**	123		121		0	0	244	
01:15	3		2		0	0	5		**13:15**	130		120		0	0	250	
01:30	0		3		0	0	3		**13:30**	107		122		0	0	229	
01:45	6	9	4	13	0	0	10	22	**13:45**	126	486	117	480	0	0	243	966
02:00	2		2		0	0	4		**14:00**	110		119		0	0	229	
02:15	1		2		0	0	3		**14:15**	118		106		0	0	224	
02:30	1		1		0	0	2		**14:30**	104		119		0	0	223	
02:45	3	7	2	7	0	0	5	14	**14:45**	105	437	102	446	0	0	207	883
03:00	1		5		0	0	6		**15:00**	108		79		0	0	187	
03:15	4		1		0	0	5		**15:15**	110		36		0	0	146	
03:30	6		3		0	0	9		**15:30**	128		103		0	0	231	
03:45	4	15	3	12	0	0	7	27	**15:45**	142	488	88	306	0	0	230	794
04:00	2		8		0	0	10		**16:00**	147		129		0	0	276	
04:15	0		7		0	0	7		**16:15**	136		134		0	0	270	
04:30	9		11		0	0	20		**16:30**	131		110		0	0	241	
04:45	8	19	6	32	0	0	14	51	**16:45**	154	568	140	513	0	0	294	1081
05:00	6		11		0	0	17		**17:00**	118		159		0	0	277	
05:15	27		9		0	0	36		**17:15**	118		162		0	0	280	
05:30	15		15		0	0	30		**17:30**	90		127		0	0	217	
05:45	23	71	32	67	0	0	55	138	**17:45**	85	411	105	553	0	0	190	964
06:00	21		16		0	0	37		**18:00**	68		111		0	0	179	
06:15	33		29		0	0	62		**18:15**	85		96		0	0	181	
06:30	37		29		0	0	66		**18:30**	59		89		0	0	148	
06:45	71	162	69	143	0	0	140	305	**18:45**	46	258	72	368	0	0	118	626
07:00	79		52		0	0	131		**19:00**	47		91		0	0	138	
07:15	69		42		0	0	111		**19:15**	55		75		0	0	130	
07:30	81		59		0	0	140		**19:30**	48		73		0	0	121	
07:45	111	340	88	241	0	0	199	581	**19:45**	41	191	54	293	0	0	95	484
08:00	100		74		0	0	174		**20:00**	36		47		0	0	83	
08:15	119		80		0	0	199		**20:15**	25		48		0	0	73	
08:30	118		74		0	0	192		**20:30**	41		42		0	0	83	
08:45	112	449	70	298	0	0	182	747	**20:45**	29	131	24	161	0	0	53	292
09:00	119		84		0	0	203		**21:00**	18		34		0	0	52	
09:15	93		92		0	0	185		**21:15**	23		37		0	0	60	
09:30	95		61		0	0	156		**21:30**	14		13		0	0	27	
09:45	93	400	73	310	0	0	166	710	**21:45**	8	63	20	104	0	0	28	167
10:00	112		95		0	0	207		**22:00**	12		28		0	0	40	
10:15	122		77		0	0	199		**22:15**	12		17		0	0	29	
10:30	92		94		0	0	186		**22:30**	7		20		0	0	27	
10:45	114	440	95	361	0	0	209	801	**22:45**	7	38	11	76	0	0	18	114
11:00	97		89		0	0	186		**23:00**	6		9		0	0	15	
11:15	106		120		0	0	226		**23:15**	2		6		0	0	8	
11:30	116		85		0	0	201		**23:30**	3		5		0	0	8	
11:45	121	440	137	431	0	0	258	871	**23:45**	5	16	7	27	0	0	12	43
TOTALS		2364		1932				**4296**	**TOTALS**		3564		3847				**7411**
SPLIT %		55.0%		45.0%				**36.7%**	**SPLIT %**		48.1%		51.9%				**63.3%**

DAILY TOTALS	NB	SB	EB	WB	Total
	5,928	5,779	0	0	11,707

AM Peak Hour	11:45	11:45				**11:45**	**PM Peak Hour**	16:00	16:45				**16:30**
AM Pk Volume	477	516				**993**	**PM Pk Volume**	568	588				**1092**
Pk Hr Factor	0.903	0.908				**0.962**	**Pk Hr Factor**	0.922	0.907				**0.929**
7 - 9 Volume	789	539	0	0		**1328**	**4 - 6 Volume**	979	1066	0	0		**2045**
7 - 9 Peak Hour	08:00	07:45				**07:45**	**4 - 6 Peak Hour**	16:00	16:45				**16:30**
7 - 9 Pk Volume	449	316	0	0		**764**	**4 - 6 Pk Volume**	568	588	0	0		**1092**
Pk Hr Factor	0.943	0.898	0.000	0.000		**0.960**	**Pk Hr Factor**	0.922	0.907	0.000	0.000		**0.929**

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Monday
Date: 9/9/2019

City: Grass Valley
Project #: CA19_7288_003n

North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	10	2	0	0	0	0	0	0	0	0	0	0	12
01:00	0	7	1	0	0	0	0	0	0	0	1	0	0	9
02:00	0	4	3	0	0	0	0	0	0	0	0	0	0	7
03:00	0	12	3	0	0	0	0	0	0	0	0	0	0	15
04:00	0	10	7	0	2	0	0	0	0	0	0	0	0	19
05:00	0	38	15	1	17	0	0	0	0	0	0	0	0	71
06:00	0	79	59	1	20	2	0	1	0	0	0	0	0	162
07:00	0	205	90	0	43	0	0	2	0	0	0	0	0	340
08:00	0	305	113	2	27	0	0	1	1	0	0	0	0	449
09:00	0	272	105	1	20	1	0	1	0	0	0	0	0	400
10:00	0	315	94	1	28	0	0	2	0	0	0	0	0	440
11:00	0	309	103	1	26	0	0	1	0	0	0	0	0	440
12:00 PM	0	344	103	3	21	1	0	4	1	0	0	0	0	477
13:00	1	353	98	2	30	1	0	1	0	0	0	0	0	486
14:00	1	310	103	0	20	0	0	2	1	0	0	0	0	437
15:00	0	348	118	0	21	1	0	0	0	0	0	0	0	488
16:00	0	406	135	0	23	1	0	3	0	0	0	0	0	568
17:00	0	306	91	0	14	0	0	0	0	0	0	0	0	411
18:00	0	205	45	0	8	0	0	0	0	0	0	0	0	258
19:00	0	135	45	2	9	0	0	0	0	0	0	0	0	191
20:00	0	91	31	0	9	0	0	0	0	0	0	0	0	131
21:00	0	50	9	0	3	0	0	1	0	0	0	0	0	63
22:00	0	30	6	0	1	0	0	0	0	0	1	0	0	38
23:00	0	13	3	0	0	0	0	0	0	0	0	0	0	16
Totals	**2**	**4157**	**1382**	**14**	**342**	**7**		**19**	**3**		**2**			**5928**
% of Totals	0%	70%	23%	0%	6%	0%		0%	0%		0%			100%

AM Volumes	0	1566	595	7	183	3	0	8	1	0	1	0	0	2364
% AM		26%	10%	0%	3%	0%		0%	0%		0%			40%
AM Peak Hour		10:00	08:00	08:00	07:00	06:00		07:00	08:00		01:00			08:00
Volume		315	113	2	43	2		2	1		1			449
PM Volumes	2	2591	787	7	159	4	0	11	2	0	1	0	0	3564
% PM	0%	44%	13%	0%	3%	0%		0%	0%		0%			60%
PM Peak Hour	13:00	16:00	16:00	12:00	13:00	12:00		12:00	12:00		22:00			16:00
Volume	1	406	135	3	30	1		4	1		1			568

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	789		13%	963		16%	979		17%	3197		54%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Monday
Date: 9/9/2019

City: Grass Valley
Project #: CA19_7288_003s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	13	3	0	0	0	0	0	0	0	1	0	0	**17**
01:00	0	11	0	0	2	0	0	0	0	0	0	0	0	**13**
02:00	0	4	3	0	0	0	0	0	0	0	0	0	0	**7**
03:00	0	6	6	0	0	0	0	0	0	0	0	0	0	**12**
04:00	0	19	10	0	3	0	0	0	0	0	0	0	0	**32**
05:00	0	39	24	1	3	0	0	0	0	0	0	0	0	**67**
06:00	0	82	45	0	15	0	0	0	1	0	0	0	0	**143**
07:00	0	160	58	1	20	0	0	2	0	0	0	0	0	**241**
08:00	0	185	82	1	27	0	0	3	0	0	0	0	0	**298**
09:00	0	205	86	1	18	0	0	0	0	0	0	0	0	**310**
10:00	0	245	83	3	28	0	0	2	0	0	0	0	0	**361**
11:00	0	303	100	1	26	0	0	1	0	0	0	0	0	**431**
12:00 PM	0	378	113	3	24	0	0	2	0	0	0	0	0	**520**
13:00	0	345	93	1	38	0	0	3	0	0	0	0	0	**480**
14:00	1	319	94	4	24	1	0	3	0	0	0	0	0	**446**
15:00	0	210	79	1	15	0	0	1	0	0	0	0	0	**306**
16:00	0	356	120	1	33	0	0	3	0	0	0	0	0	**513**
17:00	0	399	123	0	27	1	0	3	0	0	0	0	0	**553**
18:00	0	286	78	0	4	0	0	0	0	0	0	0	0	**368**
19:00	0	220	63	1	8	0	0	1	0	0	0	0	0	**293**
20:00	0	112	41	1	7	0	0	0	0	0	0	0	0	**161**
21:00	0	80	21	0	3	0	0	0	0	0	0	0	0	**104**
22:00	0	58	15	0	1	0	0	2	0	0	0	0	0	**76**
23:00	0	22	4	0	1	0	0	0	0	0	0	0	0	**27**
Totals	**1**	**4057**	**1344**	**20**	**327**	**2**		**26**	**1**		**1**			**5779**
% of Totals	0%	70%	23%	0%	6%	0%		0%	0%		0%			100%

AM Volumes	0	1272	500	8	142	0	0	8	1	0	1	0	0	1932
% AM		22%	9%	0%	2%			0%	0%		0%			33%
AM Peak Hour		11:00	11:00	10:00	10:00			08:00	06:00					11:00
Volume		303	100	3	28			3	1		1			431
PM Volumes	1	2785	844	12	185	2	0	18	0	0	0	0	0	3847
% PM	0%	48%	15%	0%	3%	0%		0%						67%
PM Peak Hour	14:00	17:00	17:00	14:00	13:00	14:00		13:00						17:00
Volume	1	399	123	4	38	1		3						553

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	539		9%	1000		17%	1066		18%	3174		55%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Monday
Date: 9/9/2019

City: Grass Valley
Project #: CA19_7288_003

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	23	5	0	0	0	0	0	0	0	1	0	0	**29**
01:00	0	18	1	0	2	0	0	0	0	0	1	0	0	**22**
02:00	0	8	6	0	0	0	0	0	0	0	0	0	0	**14**
03:00	0	18	9	0	0	0	0	0	0	0	0	0	0	**27**
04:00	0	29	17	0	5	0	0	0	0	0	0	0	0	**51**
05:00	0	77	39	2	20	0	0	0	0	0	0	0	0	**138**
06:00	0	161	104	1	35	2	0	1	1	0	0	0	0	**305**
07:00	0	365	148	1	63	0	0	4	0	0	0	0	0	**581**
08:00	0	490	195	3	54	0	0	4	1	0	0	0	0	**747**
09:00	0	477	191	2	38	1	0	1	0	0	0	0	0	**710**
10:00	0	560	177	4	56	0	0	4	0	0	0	0	0	**801**
11:00	0	612	203	2	52	0	0	2	0	0	0	0	0	**871**
12:00 PM	0	722	216	6	45	1	0	6	1	0	0	0	0	**997**
13:00	1	698	191	3	68	1	0	4	0	0	0	0	0	**966**
14:00	2	629	197	4	44	1	0	5	1	0	0	0	0	**883**
15:00	0	558	197	1	36	1	0	1	0	0	0	0	0	**794**
16:00	0	762	255	1	56	1	0	6	0	0	0	0	0	**1081**
17:00	0	705	214	0	41	1	0	3	0	0	0	0	0	**964**
18:00	0	491	123	0	12	0	0	0	0	0	0	0	0	**626**
19:00	0	355	108	3	17	0	0	1	0	0	0	0	0	**484**
20:00	0	203	72	1	16	0	0	0	0	0	0	0	0	**292**
21:00	0	130	30	0	6	0	0	1	0	0	0	0	0	**167**
22:00	0	88	21	0	2	0	0	2	0	0	1	0	0	**114**
23:00	0	35	7	0	1	0	0	0	0	0	0	0	0	**43**
Totals	**3**	**8214**	**2726**	**34**	**669**	**9**		**45**	**4**		**3**			**11707**
% of Totals	0%	70%	23%	0%	6%	0%		0%	0%		0%			100%

AM Volumes	0	2838	1095	15	325	3	0	16	2	0	2	0	0	4296
% AM		24%	9%	0%	3%	0%		0%	0%		0%			37%
AM Peak Hour		11:00	11:00	10:00	07:00	06:00		07:00	06:00					11:00
Volume		612	203	4	63	2		4	1		1			871
PM Volumes	3	5376	1631	19	344	6	0	29	2	0	1	0	0	7411
% PM	0%	46%	14%	0%	3%	0%		0%	0%		0%			63%
PM Peak Hour	14:00	16:00	16:00	12:00	13:00	12:00		12:00	12:00		22:00			16:00
Volume	2	762	255	6	68	1		6	1		1			1081

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	1328		11%	1963		17%	2045		17%	6371		54%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Tuesday
Date: 9/10/2019

City: Grass Valley
Project #: CA19_7288_003

DAILY TOTALS	NB	SB	EB	WB	Total
	5,965	5,895	0	0	11,860

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	2		2		0	0	4		**12:00**	141		128		0	0	269	
00:15	3		7		0	0	10		**12:15**	127		138		0	0	265	
00:30	1		4		0	0	5		**12:30**	107		115		0	0	222	
00:45	1	7	3	16	0	0	4	23	**12:45**	122	497	115	496	0	0	237	993
01:00	4		9		0	0	13		**13:00**	127		121		0	0	248	
01:15	2		3		0	0	5		**13:15**	104		94		0	0	198	
01:30	1		1		0	0	2		**13:30**	113		94		0	0	207	
01:45	1	8	1	14	0	0	2	22	**13:45**	119	463	119	428	0	0	238	891
02:00	2		1		0	0	3		**14:00**	99		106		0	0	205	
02:15	3		1		0	0	4		**14:15**	98		117		0	0	215	
02:30	1		1		0	0	2		**14:30**	110		126		0	0	236	
02:45	1	7	1	4	0	0	2	11	**14:45**	102	409	114	463	0	0	216	872
03:00	0		2		0	0	2		**15:00**	99		131		0	0	230	
03:15	1		1		0	0	2		**15:15**	133		114		0	0	247	
03:30	7		2		0	0	9		**15:30**	145		130		0	0	275	
03:45	3	11	5	10	0	0	8	21	**15:45**	132	509	131	506	0	0	263	1015
04:00	1		4		0	0	5		**16:00**	117		125		0	0	242	
04:15	2		4		0	0	6		**16:15**	125		129		0	0	254	
04:30	6		6		0	0	12		**16:30**	151		135		0	0	286	
04:45	10	19	8	22	0	0	18	41	**16:45**	97	490	143	532	0	0	240	1022
05:00	10		8		0	0	18		**17:00**	117		141		0	0	258	
05:15	20		16		0	0	36		**17:15**	119		147		0	0	266	
05:30	12		21		0	0	33		**17:30**	102		141		0	0	243	
05:45	29	71	30	75	0	0	59	146	**17:45**	62	400	99	528	0	0	161	928
06:00	29		26		0	0	55		**18:00**	73		95		0	0	168	
06:15	25		29		0	0	54		**18:15**	65		76		0	0	141	
06:30	45		33		0	0	78		**18:30**	65		75		0	0	140	
06:45	60	159	61	149	0	0	121	308	**18:45**	48	251	93	339	0	0	141	590
07:00	80		44		0	0	124		**19:00**	56		83		0	0	139	
07:15	90		55		0	0	145		**19:15**	58		77		0	0	135	
07:30	117		58		0	0	175		**19:30**	62		70		0	0	132	
07:45	146	433	88	245	0	0	234	678	**19:45**	43	219	42	272	0	0	85	491
08:00	140		65		0	0	205		**20:00**	36		37		0	0	73	
08:15	133		100		0	0	233		**20:15**	35		47		0	0	82	
08:30	110		87		0	0	197		**20:30**	33		43		0	0	76	
08:45	133	516	81	333	0	0	214	849	**20:45**	20	124	36	163	0	0	56	287
09:00	108		78		0	0	186		**21:00**	19		40		0	0	59	
09:15	104		86		0	0	190		**21:15**	18		26		0	0	44	
09:30	100		92		0	0	192		**21:30**	13		18		0	0	31	
09:45	95	407	91	347	0	0	186	754	**21:45**	4	54	23	107	0	0	27	161
10:00	103		83		0	0	186		**22:00**	12		10		0	0	22	
10:15	101		80		0	0	181		**22:15**	9		13		0	0	22	
10:30	97		93		0	0	190		**22:30**	8		11		0	0	19	
10:45	112	413	102	358	0	0	214	771	**22:45**	10	39	12	46	0	0	22	85
11:00	84		103		0	0	187		**23:00**	7		10		0	0	17	
11:15	99		93		0	0	192		**23:15**	3		11		0	0	14	
11:30	118		97		0	0	215		**23:30**	2		8		0	0	10	
11:45	145	446	114	407	0	0	259	853	**23:45**	1	13	6	35	0	0	7	48
TOTALS		2497		1980				**4477**	**TOTALS**		3468		3915				**7383**
SPLIT %		55.8%		44.2%				**37.7%**	**SPLIT %**		47.0%		53.0%				**62.3%**

DAILY TOTALS	NB	SB	EB	WB	Total
	5,965	5,895	0	0	11,860

AM Peak Hour	07:30		11:45					**11:45**	**PM Peak Hour**	15:15		16:45					**16:30**
AM Pk Volume	536		495					**1015**	**PM Pk Volume**	527		572					**1050**
Pk Hr Factor	0.918		0.897					**0.943**	**Pk Hr Factor**	0.909		0.973					**0.918**
7 - 9 Volume	949		578		0	0		**1527**	**4 - 6 Volume**	890		1060		0	0		**1950**
7 - 9 Peak Hour	07:30		07:45					**07:45**	**4 - 6 Peak Hour**	16:00		16:45					**16:30**
7 - 9 Pk Volume	536		340		0	0		**869**	**4 - 6 Pk Volume**	490		572		0	0		**1050**
Pk Hr Factor	0.918		0.850		0.000	0.000		**0.928**	**Pk Hr Factor**	0.811		0.973		0.000	0.000		**0.918**

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Tuesday
Date: 9/10/2019

City: Grass Valley
Project #: CA19_7288_003n

North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	6	0	0	0	0	0	0	0	0	1	0	0	7
01:00	0	5	3	0	0	0	0	0	0	0	0	0	0	8
02:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
03:00	0	8	2	0	1	0	0	0	0	0	0	0	0	11
04:00	0	10	8	0	1	0	0	0	0	0	0	0	0	19
05:00	0	35	19	0	17	0	0	0	0	0	0	0	0	71
06:00	0	90	56	0	13	0	0	0	0	0	0	0	0	159
07:00	0	275	114	1	40	0	0	2	0	0	1	0	0	433
08:00	0	364	128	3	21	0	0	0	0	0	0	0	0	516
09:00	0	293	99	0	13	0	0	2	0	0	0	0	0	407
10:00	0	296	96	2	16	0	0	3	0	0	0	0	0	413
11:00	0	327	100	1	17	0	0	1	0	0	0	0	0	446
12:00 PM	0	358	117	0	18	0	0	4	0	0	0	0	0	497
13:00	0	352	88	2	21	0	0	0	0	0	0	0	0	463
14:00	0	289	100	0	16	0	0	4	0	0	0	0	0	409
15:00	0	354	128	0	25	0	0	2	0	0	0	0	0	509
16:00	0	360	108	1	18	0	0	3	0	0	0	0	0	490
17:00	0	285	101	0	14	0	0	0	0	0	0	0	0	400
18:00	0	201	43	1	4	0	0	2	0	0	0	0	0	251
19:00	0	162	52	1	4	0	0	0	0	0	0	0	0	219
20:00	0	97	23	0	4	0	0	0	0	0	0	0	0	124
21:00	0	44	6	0	2	0	0	1	0	0	1	0	0	54
22:00	0	26	12	0	1	0	0	0	0	0	0	0	0	39
23:00	0	11	2	0	0	0	0	0	0	0	0	0	0	13
Totals		**4254**	**1406**	**12**	**266**			**24**			**3**			**5965**
% of Totals		71%	24%	0%	4%			0%			0%			100%

AM Volumes	0	1715	626	7	139	0	0	8	0	0	2	0	0	2497
% AM		29%	10%	0%	2%			0%			0%			42%
AM Peak Hour		08:00	08:00	08:00	07:00			10:00						08:00
Volume		364	128	3	40			3			1			516
PM Volumes	0	2539	780	5	127	0	0	16	0	0	1	0	0	3468
% PM		43%	13%	0%	2%			0%			0%			58%
PM Peak Hour		16:00	15:00	13:00	15:00			12:00			21:00			15:00
Volume		360	128	2	25			4			1			509

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	949		16%	960		16%	890		15%	3166		53%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Tuesday
Date: 9/10/2019

City: Grass Valley
Project #: CA19_7288_003s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	12	3	0	1	0	0	0	0	0	0	0	0	16
01:00	0	10	1	1	1	1	0	0	0	0	0	0	0	14
02:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
03:00	0	6	2	0	2	0	0	0	0	0	0	0	0	10
04:00	0	15	5	0	1	0	0	0	0	0	1	0	0	22
05:00	0	37	28	0	10	0	0	0	0	0	0	0	0	75
06:00	0	88	48	1	12	0	0	0	0	0	0	0	0	149
07:00	0	156	65	1	22	0	0	1	0	0	0	0	0	245
08:00	0	225	81	0	23	0	0	4	0	0	0	0	0	333
09:00	0	233	95	0	19	0	0	0	0	0	0	0	0	347
10:00	0	246	92	0	18	0	0	2	0	0	0	0	0	358
11:00	0	285	104	1	16	0	0	1	0	0	0	0	0	407
12:00 PM	0	371	101	0	21	0	0	3	0	0	0	0	0	496
13:00	0	295	97	4	30	0	0	2	0	0	0	0	0	428
14:00	0	313	120	1	27	0	0	2	0	0	0	0	0	463
15:00	0	360	117	1	25	1	0	1	0	0	1	0	0	506
16:00	0	377	125	0	29	0	0	1	0	0	0	0	0	532
17:00	0	401	112	0	12	0	0	3	0	0	0	0	0	528
18:00	0	264	63	0	12	0	0	0	0	0	0	0	0	339
19:00	0	200	59	1	12	0	0	0	0	0	0	0	0	272
20:00	0	129	25	1	7	0	0	1	0	0	0	0	0	163
21:00	0	87	16	0	4	0	0	0	0	0	0	0	0	107
22:00	0	34	11	0	0	0	0	1	0	0	0	0	0	46
23:00	0	30	4	0	1	0	0	0	0	0	0	0	0	35
Totals		**4177**	**1375**	**12**	**305**	**2**		**22**			**2**			**5895**
% of Totals		71%	23%	0%	5%	0%		0%			0%			100%

AM Volumes	0	1316	525	4	125	1	0	8	0	0	1	0	0	1980
% AM		22%	9%	0%	2%	0%		0%			0%			34%
AM Peak Hour		11:00	11:00	01:00	08:00	01:00		08:00			04:00			11:00
Volume		285	104	1	23	1		4			1			407
PM Volumes	0	2861	850	8	180	1	0	14	0	0	1	0	0	3915
% PM		49%	14%	0%	3%	0%		0%			0%			66%
PM Peak Hour		17:00	16:00	13:00	13:00	15:00		12:00			15:00			16:00
Volume		401	125	4	30	1		3			1			532

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	578		10%	924		16%	1060		18%	3333		57%

Classification Definitions

1	Motorcycles	**4**	Buses	**7**	> =4-Axle Single Units	**10**	>=6-Axle Single Trailers	**13**	>=7-Axle Multi-Trailers
2	Passenger Cars	**5**	2-Axle, 6-Tire Single Units	**8**	<=4-Axle Single Trailers	**11**	<=5-Axle Multi-Trailers		
3	2-Axle, 4-Tire Single Units	**6**	3-Axle Single Units	**9**	5-Axle Single Trailers	**12**	6-Axle Multi-Trailers		

Prepared by National Data & Surveying Services

CLASSIFICATION

Brunswick Rd Bet. Whispering Pines Ln & SR 49

Day: Tuesday
Date: 9/10/2019

City: Grass Valley
Project #: CA19_7288_003

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	18	3	0	1	0	0	0	0	0	1	0	0	23
01:00	0	15	4	1	1	1	0	0	0	0	0	0	0	22
02:00	0	9	2	0	0	0	0	0	0	0	0	0	0	11
03:00	0	14	4	0	3	0	0	0	0	0	0	0	0	21
04:00	0	25	13	0	2	0	0	0	0	0	1	0	0	41
05:00	0	72	47	0	27	0	0	0	0	0	0	0	0	146
06:00	0	178	104	1	25	0	0	0	0	0	0	0	0	308
07:00	0	431	179	2	62	0	0	3	0	0	1	0	0	678
08:00	0	589	209	3	44	0	0	4	0	0	0	0	0	849
09:00	0	526	194	0	32	0	0	2	0	0	0	0	0	754
10:00	0	542	188	2	34	0	0	5	0	0	0	0	0	771
11:00	0	612	204	2	33	0	0	2	0	0	0	0	0	853
12:00 PM	0	729	218	0	39	0	0	7	0	0	0	0	0	993
13:00	0	647	185	6	51	0	0	2	0	0	0	0	0	891
14:00	0	602	220	1	43	0	0	6	0	0	0	0	0	872
15:00	0	714	245	1	50	1	0	3	0	0	1	0	0	1015
16:00	0	737	233	1	47	0	0	4	0	0	0	0	0	1022
17:00	0	686	213	0	26	0	0	3	0	0	0	0	0	928
18:00	0	465	106	1	16	0	0	2	0	0	0	0	0	590
19:00	0	362	111	2	16	0	0	0	0	0	0	0	0	491
20:00	0	226	48	1	11	0	0	1	0	0	0	0	0	287
21:00	0	131	22	0	6	0	0	1	0	0	1	0	0	161
22:00	0	60	23	0	1	0	0	1	0	0	0	0	0	85
23:00	0	41	6	0	1	0	0	0	0	0	0	0	0	48
Totals		**8431**	**2781**	**24**	**571**	**2**		**46**			**5**			**11860**
% of Totals		71%	23%	0%	5%	0%		0%			0%			100%

AM Volumes	0	3031	1151	11	264	1	0	16	0	0	3	0	0	4477
% AM		26%	10%	0%	2%	0%		0%			0%			38%
AM Peak Hour		11:00	08:00	08:00	07:00	01:00		10:00						11:00
Volume		612	209	3	62	1		5			1			853
PM Volumes	0	5400	1630	13	307	1	0	30	0	0	2	0	0	7383
% PM		46%	14%	0%	3%	0%		0%			0%			62%
PM Peak Hour		16:00	15:00	13:00	13:00	15:00		12:00			15:00			16:00
Volume		737	245	6	51	1		7			1			1022

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	1527		13%	1884		16%	1950		16%	6499		55%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

E Bennett Rd W/O Brunswick Rd

Day: Wednesday
Date: 9/4/2019

City: Grass Valley
Project #: CA19_7288_009

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	753	781	1,534

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00	0	0	0		0				**12:00**	0	0	14		17		31	
00:15	0	0	1		0		1		**12:15**	0	0	13		8		21	
00:30	0	0	0		0				**12:30**	0	0	13		11		24	
00:45	0	0	0	1	0			1	**12:45**	0	0	14	54	12	48	26	102
01:00	0	0	1		1		2		**13:00**	0	0	15		7		22	
01:15	0	0	1		0		1		**13:15**	0	0	9		17		26	
01:30	0	0	0		0				**13:30**	0	0	12		13		25	
01:45	0	0	1	3	0	1	1	4	**13:45**	0	0	10	46	13	50	23	96
02:00	0	0	0		0				**14:00**	0	0	10		17		27	
02:15	0	0	0		0				**14:15**	0	0	20		18		38	
02:30	0	0	0		1		1		**14:30**	0	0	19		17		36	
02:45	0	0	0		0	1		1	**14:45**	0	0	12	61	19	71	31	132
03:00	0	0	0		0				**15:00**	0	0	14		10		24	
03:15	0	0	0		1		1		**15:15**	0	0	13		18		31	
03:30	0	0	1		1		2		**15:30**	0	0	14		13		27	
03:45	0	0	0	1	0	2		3	**15:45**	0	0	18	59	13	54	31	113
04:00	0	0	0		0				**16:00**	0	0	16		8		24	
04:15	0	0	1		0		1		**16:15**	0	0	20		14		34	
04:30	0	0	2		1		3		**16:30**	0	0	14		21		35	
04:45	0	0	0	3	0	1		4	**16:45**	0	0	18	68	13	56	31	124
05:00	0	0	1		2		3		**17:00**	0	0	14		20		34	
05:15	0	0	1		3		4		**17:15**	0	0	21		26		47	
05:30	0	0	2		2		4		**17:30**	0	0	15		11		26	
05:45	0	0	7	11	0	7	7	18	**17:45**	0	0	10	60	21	78	31	138
06:00	0	0	1		3		4		**18:00**	0	0	17		11		28	
06:15	0	0	2		10		12		**18:15**	0	0	8		6		14	
06:30	0	0	8		11		19		**18:30**	0	0	16		9		25	
06:45	0	0	7	18	12	36	19	54	**18:45**	0	0	13	54	11	37	24	91
07:00	0	0	7		9		16		**19:00**	0	0	8		3		11	
07:15	0	0	7		10		17		**19:15**	0	0	9		7		16	
07:30	0	0	17		17		34		**19:30**	0	0	6		5		11	
07:45	0	0	14	45	23	59	37	104	**19:45**	0	0	4	27	7	22	11	49
08:00	0	0	12		29		41		**20:00**	0	0	13		4		17	
08:15	0	0	12		18		30		**20:15**	0	0	5		5		10	
08:30	0	0	13		16		29		**20:30**	0	0	10		5		15	
08:45	0	0	15	52	15	78	30	130	**20:45**	0	0	5	33	3	17	8	50
09:00	0	0	23		13		36		**21:00**	0	0	8		5		13	
09:15	0	0	12		19		31		**21:15**	0	0	6		1		7	
09:30	0	0	15		13		28		**21:30**	0	0	4		2		6	
09:45	0	0	9	59	16	61	25	120	**21:45**	0	0	4	22	0	8	4	30
10:00	0	0	2		8		10		**22:00**	0	0	4		2		6	
10:15	0	0	8		6		14		**22:15**	0	0	3		1		4	
10:30	0	0	7		10		17		**22:30**	0	0	1		2		3	
10:45	0	0	8	25	10	34	18	59	**22:45**	0	0	0	8	2	7	2	15
11:00	0	0	10		7		17		**23:00**	0	0	0		1		1	
11:15	0	0	10		14		24		**23:15**	0	0	0		1		1	
11:30	0	0	8		14		22		**23:30**	0	0	1		1		2	
11:45	0	0	14	42	15	50	29	92	**23:45**	0	0	0	1	0	3		4
TOTALS				260		330		**590**	**TOTALS**				493		451		**944**
SPLIT %				44.1%		55.9%		**38.5%**	**SPLIT %**				52.2%		47.8%		**61.5%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	753	781	1,534

AM Peak Hour				08:45		07:30		**07:30**	**PM Peak Hour**				15:30		16:30		**16:30**
AM Pk Volume				65		87		**142**	**PM Pk Volume**				68		80		**147**
Pk Hr Factor				0.707		0.750		**0.866**	**Pk Hr Factor**				0.850		0.769		**0.782**
7 - 9 Volume	0	0		97		137		**234**	**4 - 6 Volume**	0	0		128		134		**262**
7 - 9 Peak Hour				07:30		07:30		**07:30**	**4 - 6 Peak Hour**				16:00		16:30		**16:30**
7 - 9 Pk Volume	0	0		55		87		**142**	**4 - 6 Pk Volume**	0	0		68		80		**147**
Pk Hr Factor	0.000	0.000		0.809		0.750		**0.866**	**Pk Hr Factor**	0.000	0.000		0.850		0.769		**0.782**

Prepared by National Data & Surveying Services

CLASSIFICATION

E Bennett Rd W/O Brunswick Rd

Day: Wednesday
Date: 9/4/2019

City: Grass Valley
Project #: CA19_7288_009e

East Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	2	0	0	0	0	0	0	1	0	0	0	0	3
05:00	0	4	5	0	2	0	0	0	0	0	0	0	0	11
06:00	0	9	7	0	1	1	0	0	0	0	0	0	0	18
07:00	0	28	8	4	5	0	0	0	0	0	0	0	0	45
08:00	0	32	13	1	5	1	0	0	0	0	0	0	0	52
09:00	0	36	19	0	3	1	0	0	0	0	0	0	0	59
10:00	0	14	8	0	3	0	0	0	0	0	0	0	0	25
11:00	0	24	11	1	5	0	0	0	1	0	0	0	0	42
12:00 PM	0	38	14	0	1	1	0	0	0	0	0	0	0	54
13:00	1	30	12	0	2	1	0	0	0	0	0	0	0	46
14:00	0	38	18	1	2	1	0	0	1	0	0	0	0	61
15:00	1	39	14	0	5	0	0	0	0	0	0	0	0	59
16:00	0	44	18	0	6	0	0	0	0	0	0	0	0	68
17:00	1	43	13	0	2	1	0	0	0	0	0	0	0	60
18:00	0	34	14	2	4	0	0	0	0	0	0	0	0	54
19:00	2	21	4	0	0	0	0	0	0	0	0	0	0	27
20:00	1	29	2	0	1	0	0	0	0	0	0	0	0	33
21:00	0	17	5	0	0	0	0	0	0	0	0	0	0	22
22:00	0	3	2	0	2	0	0	1	0	0	0	0	0	8
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Totals	**6**	**491**	**187**	**9**	**49**	**7**		**1**	**3**					**753**
% of Totals	1%	65%	25%	1%	7%	1%		0%	0%					100%

AM Volumes	0	154	71	6	24	3	0	0	2	0	0	0	0	260
% AM		20%	9%	1%	3%	0%			0%					35%
AM Peak Hour		09:00	09:00	07:00	07:00	06:00			04:00					09:00
Volume		36	19	4	5	1			1					59
PM Volumes	6	337	116	3	25	4	0	1	1	0	0	0	0	493
% PM	1%	45%	15%	0%	3%	1%		0%	0%					65%
PM Peak Hour	19:00	16:00	14:00	18:00	16:00	12:00		22:00	14:00					16:00
Volume	2	44	18	2	6	1		1	1					68

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	97		13%	100		13%	128		17%	428		57%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

E Bennett Rd W/O Brunswick Rd

Day: Wednesday
Date: 9/4/2019

City: Grass Valley
Project #: CA19_7288_009w

West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	1	0	0	1	0	0	0	0	0	0	0	0	2
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
05:00	0	5	0	0	1	1	0	0	0	0	0	0	0	7
06:00	0	18	9	0	8	1	0	0	0	0	0	0	0	36
07:00	0	42	13	0	4	0	0	0	0	0	0	0	0	59
08:00	0	55	18	2	2	1	0	0	0	0	0	0	0	78
09:00	0	44	13	0	2	2	0	0	0	0	0	0	0	61
10:00	0	22	11	0	1	0	0	0	0	0	0	0	0	34
11:00	0	38	11	0	1	0	0	0	0	0	0	0	0	50
12:00 PM	0	31	13	0	4	0	0	0	0	0	0	0	0	48
13:00	0	36	11	1	1	1	0	0	0	0	0	0	0	50
14:00	0	46	16	5	4	0	0	0	0	0	0	0	0	71
15:00	0	41	10	2	1	0	0	0	0	0	0	0	0	54
16:00	1	32	16	0	6	0	0	1	0	0	0	0	0	56
17:00	1	63	13	0	1	0	0	0	0	0	0	0	0	78
18:00	0	28	9	0	0	0	0	0	0	0	0	0	0	37
19:00	0	18	4	0	0	0	0	0	0	0	0	0	0	22
20:00	0	15	2	0	0	0	0	0	0	0	0	0	0	17
21:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
22:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
23:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
Totals	**2**	**553**	**172**	**10**	**37**	**6**		**1**						**781**
% of Totals	0%	71%	22%	1%	5%	1%		0%						100%

AM Volumes	0	228	75	2	20	5	0	0	0	0	0	0	0	330
% AM		29%	10%	0%	3%	1%								42%
AM Peak Hour		08:00	08:00	08:00	06:00	09:00								08:00
Volume		55	18	2	8	2								78
PM Volumes	2	325	97	8	17	1	0	1	0	0	0	0	0	451
% PM	0%	42%	12%	1%	2%	0%		0%						58%
PM Peak Hour	16:00	17:00	14:00	14:00	16:00	13:00		16:00						17:00
Volume	1	63	16	5	6	1		1						78

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	137	18%	98	13%	134	17%	412	53%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

E Bennett Rd W/O Brunswick Rd

Day: Wednesday
Date: 9/4/2019

City: Grass Valley
Project #: CA19_7288_009

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	2	0	0	1	0	0	0	0	0	0	0	0	3
04:00	0	3	0	0	0	0	0	0	1	0	0	0	0	4
05:00	0	9	5	0	3	1	0	0	0	0	0	0	0	18
06:00	0	27	16	0	9	2	0	0	0	0	0	0	0	54
07:00	0	70	21	4	9	0	0	0	0	0	0	0	0	104
08:00	0	87	31	3	7	2	0	0	0	0	0	0	0	130
09:00	0	80	32	0	5	3	0	0	0	0	0	0	0	120
10:00	0	36	19	0	4	0	0	0	0	0	0	0	0	59
11:00	0	62	22	1	6	0	0	0	1	0	0	0	0	92
12:00 PM	0	69	27	0	5	1	0	0	0	0	0	0	0	102
13:00	1	66	23	1	3	2	0	0	0	0	0	0	0	96
14:00	0	84	34	6	6	1	0	0	1	0	0	0	0	132
15:00	1	80	24	2	6	0	0	0	0	0	0	0	0	113
16:00	1	76	34	0	12	0	0	1	0	0	0	0	0	124
17:00	2	106	26	0	3	1	0	0	0	0	0	0	0	138
18:00	0	62	23	2	4	0	0	0	0	0	0	0	0	91
19:00	2	39	8	0	0	0	0	0	0	0	0	0	0	49
20:00	1	44	4	0	1	0	0	0	0	0	0	0	0	50
21:00	0	24	6	0	0	0	0	0	0	0	0	0	0	30
22:00	0	9	3	0	2	0	0	1	0	0	0	0	0	15
23:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
Totals	**8**	**1044**	**359**	**19**	**86**	**13**		**2**	**3**					**1534**
% of Totals	1%	68%	23%	1%	6%	1%		0%	0%					100%

AM Volumes	0	382	146	8	44	8	0	0	2	0	0	0	0	590
% AM		25%	10%	1%	3%	1%			0%					38%
AM Peak Hour		08:00	09:00	07:00	06:00	09:00			04:00					08:00
Volume		87	32	4	9	3			1					130
PM Volumes	8	662	213	11	42	5	0	2	1	0	0	0	0	944
% PM	1%	43%	14%	1%	3%	0%		0%	0%					62%
PM Peak Hour	17:00	17:00	14:00	14:00	16:00	13:00		16:00	14:00					17:00
Volume	2	106	34	6	12	2		1	1					138

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	234		15%	198		13%	262		17%	840		55%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

E Bennett Rd W/O Brunswick Rd

Day: Thursday
Date: 9/5/2019

City: Grass Valley
Project #: CA19_7288_009

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	717	762	1,479

AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00	0	0	0	0		12:00	0	0	9	13	22
00:15	0	0	0	0		12:15	0	0	10	10	20
00:30	0	0	0	0		12:30	0	0	14	9	23
00:45	0	0	0	0		12:45	0	0	13	46 7 39	20 85
01:00	0	0	0	0		13:00	0	0	11	14	25
01:15	0	0	0	0		13:15	0	0	13	12	25
01:30	0	0	0	0		13:30	0	0	6	13	19
01:45	0	0	0	0		13:45	0	0	17	47 12 51	29 98
02:00	0	0	0	0		14:00	0	0	13	13	26
02:15	0	0	0	0		14:15	0	0	7	18	25
02:30	0	0	0	0		14:30	0	0	16	12	28
02:45	0	0	0	0		14:45	0	0	17	53 19 62	36 115
03:00	0	0	0	0		15:00	0	0	19	13	32
03:15	0	0	0	0		15:15	0	0	9	15	24
03:30	0	0	0	0		15:30	0	0	17	24	41
03:45	0	0	0	0		15:45	0	0	13	58 27 79	40 137
04:00	0	0	0	0		16:00	0	0	15	20	35
04:15	0	0	0	1	1	16:15	0	0	9	11	20
04:30	0	0	1	0	1	16:30	0	0	23	19	42
04:45	0	0	1 2	1 2	2 4	16:45	0	0	21	68 10 60	31 128
05:00	0	0	0	1	1	17:00	0	0	20	26	46
05:15	0	0	1	2	3	17:15	0	0	9	12	21
05:30	0	0	4	0	4	17:30	0	0	22	12	34
05:45	0	0	4 9	2 5	6 14	17:45	0	0	14	65 14 64	28 129
06:00	0	0	2	3	5	18:00	0	0	13	10	23
06:15	0	0	0	14	14	18:15	0	0	12	6	18
06:30	0	0	8	7	15	18:30	0	0	15	8	23
06:45	0	0	8 18	11 35	19 53	18:45	0	0	17	57 8 32	25 89
07:00	0	0	6	13	19	19:00	0	0	10	8	18
07:15	0	0	6	16	22	19:15	0	0	8	5	13
07:30	0	0	14	15	29	19:30	0	0	9	4	13
07:45	0	0	16 42	19 63	35 105	19:45	0	0	14	41 5 22	19 63
08:00	0	0	8	30	38	20:00	0	0	14	3	17
08:15	0	0	17	15	32	20:15	0	0	3	2	5
08:30	0	0	13	24	37	20:30	0	0	5	6	11
08:45	0	0	14 52	28 97	42 149	20:45	0	0	2	24 4 15	6 39
09:00	0	0	13	11	24	21:00	0	0	3	1	4
09:15	0	0	12	16	28	21:15	0	0	4	1	5
09:30	0	0	9	9	18	21:30	0	0	5	0	5
09:45	0	0	9 43	8 44	17 87	21:45	0	0	2	14 3 5	5 19
10:00	0	0	9	11	20	22:00	0	0	2	0	2
10:15	0	0	7	11	18	22:15	0	0	2	1	3
10:30	0	0	10	14	24	22:30	0	0	2	0	2
10:45	0	0	7 33	8 44	15 77	22:45	0	0	0	6 2 3	2 9
11:00	0	0	9	9	18	23:00	0	0	1	0	1
11:15	0	0	13	7	20	23:15	0	0	1	2	3
11:30	0	0	5	12	17	23:30	0	0	0	1	1
11:45	0	0	8 35	7 35	15 70	23:45	0	0	2	4 2 5	4 9
TOTALS			234	325	559	TOTALS			483	437	920
SPLIT %			41.9%	58.1%	37.8%	SPLIT %			52.5%	47.5%	62.2%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	717	762	1,479

AM Peak Hour			08:15	08:00	08:00	PM Peak Hour			16:15	15:15	15:15
AM Pk Volume			57	97	149	PM Pk Volume			73	86	140
Pk Hr Factor			0.838	0.808	0.887	Pk Hr Factor			0.793	0.796	0.854
7 - 9 Volume	0	0	94	160	254	4 - 6 Volume	0	0	133	124	257
7 - 9 Peak Hour			07:30	08:00	08:00	4 - 6 Peak Hour			16:15	16:30	16:30
7 - 9 Pk Volume	0	0	55	97	149	4 - 6 Pk Volume	0	0	73	67	140
Pk Hr Factor	0.000	0.000	0.809	0.808	0.887	Pk Hr Factor	0.000	0.000	0.793	0.644	0.761

Prepared by National Data & Surveying Services

CLASSIFICATION

E Bennett Rd W/O Brunswick Rd

Day: Thursday
Date: 9/5/2019

City: Grass Valley
Project #: CA19_7288_009e

East Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
05:00	0	5	4	0	0	0	0	0	0	0	0	0	0	9
06:00	0	11	7	0	0	0	0	0	0	0	0	0	0	18
07:00	0	23	11	4	3	1	0	0	0	0	0	0	0	42
08:00	0	38	7	1	5	0	0	1	0	0	0	0	0	52
09:00	0	34	6	0	0	2	0	0	1	0	0	0	0	43
10:00	0	26	5	0	2	0	0	0	0	0	0	0	0	33
11:00	0	23	10	0	2	0	0	0	0	0	0	0	0	35
12:00 PM	0	22	15	0	8	0	0	0	1	0	0	0	0	46
13:00	0	36	8	0	3	0	0	0	0	0	0	0	0	47
14:00	0	36	12	0	4	0	0	1	0	0	0	0	0	53
15:00	0	39	16	0	3	0	0	0	0	0	0	0	0	58
16:00	1	52	13	0	2	0	0	0	0	0	0	0	0	68
17:00	0	47	13	0	4	0	0	1	0	0	0	0	0	65
18:00	0	48	7	0	2	0	0	0	0	0	0	0	0	57
19:00	0	32	8	0	1	0	0	0	0	0	0	0	0	41
20:00	0	22	1	0	1	0	0	0	0	0	0	0	0	24
21:00	0	10	3	0	1	0	0	0	0	0	0	0	0	14
22:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
23:00	1	2	1	0	0	0	0	0	0	0	0	0	0	4
Totals	**2**	**512**	**149**	**5**	**41**	**3**		**3**	**2**					**717**
% of Totals	0%	71%	21%	1%	6%	0%		0%	0%					100%

AM Volumes	0	162	50	5	12	3	0	1	1	0	0	0	0	234
% AM		23%	7%	1%	2%	0%		0%	0%					33%
AM Peak Hour		08:00	07:00	07:00	08:00	09:00		08:00	09:00					08:00
Volume		38	11	4	5	2		1	1					52
PM Volumes	2	350	99	0	29	0	0	2	1	0	0	0	0	483
% PM	0%	49%	14%		4%			0%	0%					67%
PM Peak Hour	16:00	16:00	15:00		12:00			14:00	12:00					16:00
Volume	1	52	16		8			1	1					68

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	94		13%	93		13%	133		19%	397		55%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

E Bennett Rd W/O Brunswick Rd

Day: Thursday
Date: 9/5/2019

City: Grass Valley
Project #: CA19_7288_009w

West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
05:00	0	2	2	0	1	0	0	0	0	0	0	0	0	5
06:00	0	25	5	1	3	1	0	0	0	0	0	0	0	35
07:00	0	45	12	0	5	0	0	1	0	0	0	0	0	63
08:00	0	61	26	2	8	0	0	0	0	0	0	0	0	97
09:00	0	30	10	0	4	0	0	0	0	0	0	0	0	44
10:00	0	30	10	0	3	0	0	1	0	0	0	0	0	44
11:00	0	23	10	0	2	0	0	0	0	0	0	0	0	35
12:00 PM	0	29	8	1	1	0	0	0	0	0	0	0	0	39
13:00	0	30	16	0	3	0	0	1	1	0	0	0	0	51
14:00	0	38	19	1	3	1	0	0	0	0	0	0	0	62
15:00	0	55	17	1	6	0	0	0	0	0	0	0	0	79
16:00	0	41	12	3	4	0	0	0	0	0	0	0	0	60
17:00	0	49	11	0	4	0	0	0	0	0	0	0	0	64
18:00	0	23	8	0	1	0	0	0	0	0	0	0	0	32
19:00	0	13	7	0	2	0	0	0	0	0	0	0	0	22
20:00	0	12	3	0	0	0	0	0	0	0	0	0	0	15
21:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
22:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
23:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
Totals		**518**	**179**	**9**	**50**	**2**		**3**	**1**					**762**
% of Totals		68%	23%	1%	7%	0%		0%	0%					100%

AM Volumes	0	217	76	3	26	1	0	2	0	0	0	0	0	325
% AM		28%	10%	0%	3%	0%		0%						43%
AM Peak Hour		08:00	08:00	08:00	08:00	06:00		07:00						08:00
Volume		61	26	2	8	1		1						97
PM Volumes	0	301	103	6	24	1	0	1	1	0	0	0	0	437
% PM		40%	14%	1%	3%	0%		0%	0%					57%
PM Peak Hour		15:00	14:00	16:00	15:00	14:00		13:00	13:00					15:00
Volume		55	19	3	6	1		1	1					79

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	160		21%	90		12%	124		16%	388		51%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

E Bennett Rd W/O Brunswick Rd

Day: Thursday
Date: 9/5/2019

City: Grass Valley
Project #: CA19_7288_009

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
05:00	0	7	6	0	1	0	0	0	0	0	0	0	0	14
06:00	0	36	12	1	3	1	0	0	0	0	0	0	0	53
07:00	0	68	23	4	8	1	0	1	0	0	0	0	0	105
08:00	0	99	33	3	13	0	0	1	0	0	0	0	0	149
09:00	0	64	16	0	4	2	0	0	1	0	0	0	0	87
10:00	0	56	15	0	5	0	0	1	0	0	0	0	0	77
11:00	0	46	20	0	4	0	0	0	0	0	0	0	0	70
12:00 PM	0	51	23	1	9	0	0	0	1	0	0	0	0	85
13:00	0	66	24	0	6	0	0	1	1	0	0	0	0	98
14:00	0	74	31	1	7	1	0	1	0	0	0	0	0	115
15:00	0	94	33	1	9	0	0	0	0	0	0	0	0	137
16:00	1	93	25	3	6	0	0	0	0	0	0	0	0	128
17:00	0	96	24	0	8	0	0	1	0	0	0	0	0	129
18:00	0	71	15	0	3	0	0	0	0	0	0	0	0	89
19:00	0	45	15	0	3	0	0	0	0	0	0	0	0	63
20:00	0	34	4	0	1	0	0	0	0	0	0	0	0	39
21:00	0	14	4	0	1	0	0	0	0	0	0	0	0	19
22:00	0	6	3	0	0	0	0	0	0	0	0	0	0	9
23:00	1	7	1	0	0	0	0	0	0	0	0	0	0	9
Totals	**2**	**1030**	**328**	**14**	**91**	**5**		**6**	**3**					**1479**
% of Totals	0%	70%	22%	1%	6%	0%		0%	0%					100%

AM Volumes	0	379	126	8	38	4	0	3	1	0	0	0	0	559
% AM		26%	9%	1%	3%	0%		0%	0%					38%
AM Peak Hour		08:00	08:00	07:00	08:00	09:00		07:00	09:00					08:00
Volume		99	33	4	13	2		1	1					149
PM Volumes	2	651	202	6	53	1	0	3	2	0	0	0	0	920
% PM	0%	44%	14%	0%	4%	0%		0%	0%					62%
PM Peak Hour	16:00	17:00	15:00	16:00	12:00	14:00		13:00	12:00					15:00
Volume	1	96	33	3	9	1		1	1					137

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	254		17%	183		12%	257		17%	785		53%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

E Bennett Rd W/O Brunswick Rd

Day: Friday
Date: 9/6/2019

City: Grass Valley
Project #: CA19_7288_009

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	709	800	1,509

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00	0	0	0		0				**12:00**	0	0	17		19		36	
00:15	0	0	0		0				**12:15**	0	0	16		12		28	
00:30	0	0	0		0				**12:30**	0	0	12		11		23	
00:45	0	0	1	1	0		1	1	**12:45**	0	0	8	53	13	55	21	108
01:00	0	0	0		0				**13:00**	0	0	13		22		35	
01:15	0	0	1		0		1		**13:15**	0	0	11		7		18	
01:30	0	0	0		0				**13:30**	0	0	15		9		24	
01:45	0	0	0	1	1	1	1	2	**13:45**	0	0	11	50	18	56	29	106
02:00	0	0	1		0		1		**14:00**	0	0	13		15		28	
02:15	0	0	0		1		1		**14:15**	0	0	12		13		25	
02:30	0	0	0		0				**14:30**	0	0	12		18		30	
02:45	0	0	0	1	0	1		2	**14:45**	0	0	11	48	17	63	28	111
03:00	0	0	0		0				**15:00**	0	0	19		20		39	
03:15	0	0	1		0		1		**15:15**	0	0	9		16		25	
03:30	0	0	0		0				**15:30**	0	0	20		15		35	
03:45	0	0	0	1	0			1	**15:45**	0	0	20	68	20	71	40	139
04:00	0	0	1		0		1		**16:00**	0	0	14		16		30	
04:15	0	0	0		0				**16:15**	0	0	16		19		35	
04:30	0	0	0		0				**16:30**	0	0	18		17		35	
04:45	0	0	2	3	0		2	3	**16:45**	0	0	13	61	13	65	26	126
05:00	0	0	0		0				**17:00**	0	0	16		16		32	
05:15	0	0	0		2		2		**17:15**	0	0	14		14		28	
05:30	0	0	5		2		7		**17:30**	0	0	13		17		30	
05:45	0	0	6	11	2	6	8	17	**17:45**	0	0	15	58	16	63	31	121
06:00	0	0	1		1		2		**18:00**	0	0	13		12		25	
06:15	0	0	4		11		15		**18:15**	0	0	8		14		22	
06:30	0	0	2		11		13		**18:30**	0	0	7		7		14	
06:45	0	0	6	13	8	31	14	44	**18:45**	0	0	10	38	5	38	15	76
07:00	0	0	5		11		16		**19:00**	0	0	4		8		12	
07:15	0	0	6		19		25		**19:15**	0	0	10		5		15	
07:30	0	0	7		9		16		**19:30**	0	0	10		8		18	
07:45	0	0	13	31	25	64	38	95	**19:45**	0	0	6	30	4	25	10	55
08:00	0	0	14		11		25		**20:00**	0	0	3		6		9	
08:15	0	0	15		25		40		**20:15**	0	0	5		2		7	
08:30	0	0	22		15		37		**20:30**	0	0	2		4		6	
08:45	0	0	11	62	15	66	26	128	**20:45**	0	0	3	13	4	16	7	29
09:00	0	0	10		14		24		**21:00**	0	0	3		2		5	
09:15	0	0	13		15		28		**21:15**	0	0	7		5		12	
09:30	0	0	13		14		27		**21:30**	0	0	5		0		5	
09:45	0	0	14	50	8	51	22	101	**21:45**	0	0	2	17	2	9	4	26
10:00	0	0	4		10		14		**22:00**	0	0	7		3		10	
10:15	0	0	10		10		20		**22:15**	0	0	4		0		4	
10:30	0	0	7		15		22		**22:30**	0	0	3		0		3	
10:45	0	0	12	33	14	49	26	82	**22:45**	0	0	1	15	6	9	7	24
11:00	0	0	12		12		24		**23:00**	0	0	3		0		3	
11:15	0	0	12		8		20		**23:15**	0	0	0		1		1	
11:30	0	0	10		21		31		**23:30**	0	0	2		1		3	
11:45	0	0	10	44	18	59	28	103	**23:45**	0	0	2	7	0	2	2	9
TOTALS				251		328		**579**	**TOTALS**				458		472		**930**
SPLIT %				43.4%		56.6%		**38.4%**	**SPLIT %**				49.2%		50.8%		**61.6%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	709	800	1,509

AM Peak Hour				07:45		07:45		**07:45**	**PM Peak Hour**				15:30		15:45		**15:30**
AM Pk Volume				64		76		**140**	**PM Pk Volume**				70		72		**140**
Pk Hr Factor				0.727		0.760		**0.875**	**Pk Hr Factor**				0.875		0.900		**0.875**
7 - 9 Volume	0	0		93		130		**223**	**4 - 6 Volume**	0	0		119		128		**247**
7 - 9 Peak Hour				07:45		07:45		**07:45**	**4 - 6 Peak Hour**				16:15		16:00		**16:15**
7 - 9 Pk Volume	0	0		64		76		**140**	**4 - 6 Pk Volume**	0	0		63		65		**128**
Pk Hr Factor	0.000	0.000		0.727		0.760		**0.875**	**Pk Hr Factor**	0.000	0.000		0.875		0.855		**0.914**

Prepared by National Data & Surveying Services

CLASSIFICATION

E Bennett Rd W/O Brunswick Rd

Day: Friday
Date: 9/6/2019

City: Grass Valley
Project #: CA19_7288_009e

East Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
05:00	0	7	4	0	0	0	0	0	0	0	0	0	0	11
06:00	0	6	7	0	0	0	0	0	0	0	0	0	0	13
07:00	0	18	7	4	2	0	0	0	0	0	0	0	0	31
08:00	0	35	18	1	8	0	0	0	0	0	0	0	0	62
09:00	0	36	10	0	4	0	0	0	0	0	0	0	0	50
10:00	0	21	10	0	2	0	0	0	0	0	0	0	0	33
11:00	0	30	10	0	4	0	0	0	0	0	0	0	0	44
12:00 PM	1	37	14	0	1	0	0	0	0	0	0	0	0	53
13:00	1	28	14	0	5	2	0	0	0	0	0	0	0	50
14:00	0	31	11	0	4	1	0	0	0	0	1	0	0	48
15:00	0	46	16	0	6	0	0	0	0	0	0	0	0	68
16:00	0	35	16	1	8	0	0	1	0	0	0	0	0	61
17:00	0	45	8	0	5	0	0	0	0	0	0	0	0	58
18:00	1	29	8	0	0	0	0	0	0	0	0	0	0	38
19:00	0	27	2	0	1	0	0	0	0	0	0	0	0	30
20:00	0	10	3	0	0	0	0	0	0	0	0	0	0	13
21:00	0	13	4	0	0	0	0	0	0	0	0	0	0	17
22:00	0	14	1	0	0	0	0	0	0	0	0	0	0	15
23:00	0	5	2	0	0	0	0	0	0	0	0	0	0	7
Totals	**3**	**479**	**166**	**6**	**50**	**3**		**1**			**1**			**709**
% of Totals	0%	68%	23%	1%	7%	0%		0%			0%			100%

AM Volumes	0	159	67	5	20	0	0	0	0	0	0	0	0	251
% AM		22%	9%	1%	3%									35%
AM Peak Hour		09:00	08:00	07:00	08:00									08:00
Volume		36	18	4	8									62
PM Volumes	3	320	99	1	30	3	0	1	0	0	1	0	0	458
% PM	0%	45%	14%	0%	4%	0%		0%			0%			65%
PM Peak Hour	12:00	15:00	15:00	16:00	16:00	13:00		16:00			14:00			15:00
Volume	1	46	16	1	8	2		1			1			68

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	93	13%	103	15%	119	17%	394	56%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

E Bennett Rd W/O Brunswick Rd

Day: Friday
Date: 9/6/2019

City: Grass Valley
Project #: CA19_7288_009w

West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	4	1	0	0	1	0	0	0	0	0	0	0	6
06:00	0	17	10	0	4	0	0	0	0	0	0	0	0	31
07:00	0	43	12	0	8	1	0	0	0	0	0	0	0	64
08:00	0	51	8	2	5	0	0	0	0	0	0	0	0	66
09:00	0	36	10	0	3	0	0	1	1	0	0	0	0	51
10:00	0	30	13	0	6	0	0	0	0	0	0	0	0	49
11:00	0	42	12	0	5	0	0	0	0	0	0	0	0	59
12:00 PM	0	38	13	0	4	0	0	0	0	0	0	0	0	55
13:00	1	33	19	0	3	0	0	0	0	0	0	0	0	56
14:00	0	42	14	0	7	0	0	0	0	0	0	0	0	63
15:00	0	46	20	2	3	0	0	0	0	0	0	0	0	71
16:00	0	37	14	4	9	1	0	0	0	0	0	0	0	65
17:00	0	47	14	0	2	0	0	0	0	0	0	0	0	63
18:00	0	30	8	0	0	0	0	0	0	0	0	0	0	38
19:00	0	20	4	0	1	0	0	0	0	0	0	0	0	25
20:00	0	11	5	0	0	0	0	0	0	0	0	0	0	16
21:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
22:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
23:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Totals	**1**	**547**	**179**	**8**	**60**	**3**		**1**	**1**					**800**
% of Totals	0%	68%	22%	1%	8%	0%		0%	0%					100%

AM Volumes	0	225	66	2	31	2	0	1	1	0	0	0	0	328
% AM		28%	8%	0%	4%	0%		0%	0%					41%
AM Peak Hour		08:00	10:00	08:00	07:00	05:00		09:00	09:00					08:00
Volume		51	13	2	8	1		1	1					66
PM Volumes	1	322	113	6	29	1	0	0	0	0	0	0	0	472
% PM	0%	40%	14%	1%	4%	0%								59%
PM Peak Hour	13:00	17:00	15:00	16:00	16:00	16:00								15:00
Volume	1	47	20	4	9	1								71

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	130	16%	111	14%	128	16%	431	54%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

E Bennett Rd W/O Brunswick Rd

Day: Friday
Date: 9/6/2019

City: Grass Valley
Project #: CA19_7288_009

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
05:00	0	11	5	0	0	1	0	0	0	0	0	0	0	17
06:00	0	23	17	0	4	0	0	0	0	0	0	0	0	44
07:00	0	61	19	4	10	1	0	0	0	0	0	0	0	95
08:00	0	86	26	3	13	0	0	0	0	0	0	0	0	128
09:00	0	72	20	0	7	0	0	1	1	0	0	0	0	101
10:00	0	51	23	0	8	0	0	0	0	0	0	0	0	82
11:00	0	72	22	0	9	0	0	0	0	0	0	0	0	103
12:00 PM	1	75	27	0	5	0	0	0	0	0	0	0	0	108
13:00	2	61	33	0	8	2	0	0	0	0	0	0	0	106
14:00	0	73	25	0	11	1	0	0	0	0	1	0	0	111
15:00	0	92	36	2	9	0	0	0	0	0	0	0	0	139
16:00	0	72	30	5	17	1	0	1	0	0	0	0	0	126
17:00	0	92	22	0	7	0	0	0	0	0	0	0	0	121
18:00	1	59	16	0	0	0	0	0	0	0	0	0	0	76
19:00	0	47	6	0	2	0	0	0	0	0	0	0	0	55
20:00	0	21	8	0	0	0	0	0	0	0	0	0	0	29
21:00	0	21	5	0	0	0	0	0	0	0	0	0	0	26
22:00	0	22	2	0	0	0	0	0	0	0	0	0	0	24
23:00	0	7	2	0	0	0	0	0	0	0	0	0	0	9
Totals	**4**	**1026**	**345**	**14**	**110**	**6**		**2**	**1**		**1**			**1509**
% of Totals	0%	68%	23%	1%	7%	0%		0%	0%		0%			100%

AM Volumes	0	384	133	7	51	2	0	1	1	0	0	0	0	579
% AM		25%	9%	0%	3%	0%		0%	0%					38%
AM Peak Hour		08:00	08:00	07:00	08:00	05:00		09:00	09:00					08:00
Volume		86	26	4	13	1		1	1					128
PM Volumes	4	642	212	7	59	4	0	1	0	0	1	0	0	930
% PM	0%	43%	14%	0%	4%	0%		0%			0%			62%
PM Peak Hour	13:00	15:00	15:00	16:00	16:00	13:00		16:00			14:00			15:00
Volume	2	92	36	5	17	2		1			1			139

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	223		15%	214		14%	247		16%	825		55%

Classification Definitions

1	Motorcycles	**4**	Buses	**7**	> =4-Axle Single Units	**10**	>=6-Axle Single Trailers	**13**	>=7-Axle Multi-Trailers
2	Passenger Cars	**5**	2-Axle, 6-Tire Single Units	**8**	<=4-Axle Single Trailers	**11**	<=5-Axle Multi-Trailers		
3	2-Axle, 4-Tire Single Units	**6**	3-Axle Single Units	**9**	5-Axle Single Trailers	**12**	6-Axle Multi-Trailers		

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

E Bennett Rd W/O Brunswick Rd

Day: Saturday
Date: 9/7/2019

City: Grass Valley
Project #: CA19_7288_009

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	482	539	1,021

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00	0	0	0		0				**12:00**	0	0	15		16		31	
00:15	0	0	0		0				**12:15**	0	0	8		11		19	
00:30	0	0	1		1		2		**12:30**	0	0	2		13		15	
00:45	0	0	3	4	0	1	3	5	**12:45**	0	0	7	32	13	53	20	85
01:00	0	0	0		1		1		**13:00**	0	0	10		7		17	
01:15	0	0	1		0		1		**13:15**	0	0	14		8		22	
01:30	0	0	0		0				**13:30**	0	0	7		11		18	
01:45	0	0	0	1	0	1		2	**13:45**	0	0	8	39	11	37	19	76
02:00	0	0	0		1		1		**14:00**	0	0	7		16		23	
02:15	0	0	0		0				**14:15**	0	0	10		9		19	
02:30	0	0	0		0				**14:30**	0	0	11		15		26	
02:45	0	0	1	1	0	1	1	2	**14:45**	0	0	12	40	8	48	20	88
03:00	0	0	0		0				**15:00**	0	0	10		13		23	
03:15	0	0	2		0		2		**15:15**	0	0	6		13		19	
03:30	0	0	0		0				**15:30**	0	0	11		8		19	
03:45	0	0	1	3	1	1	2	4	**15:45**	0	0	11	38	7	41	18	79
04:00	0	0	0		0				**16:00**	0	0	9		11		20	
04:15	0	0	0		0				**16:15**	0	0	11		7		18	
04:30	0	0	0		0				**16:30**	0	0	9		6		15	
04:45	0	0	0		0				**16:45**	0	0	8	37	11	35	19	72
05:00	0	0	0		0				**17:00**	0	0	17		13		30	
05:15	0	0	0		1		1		**17:15**	0	0	7		17		24	
05:30	0	0	2		0		2		**17:30**	0	0	6		8		14	
05:45	0	0	6	8	1	2	7	10	**17:45**	0	0	7	37	3	41	10	78
06:00	0	0	1		0		1		**18:00**	0	0	11		5		16	
06:15	0	0	1		1		2		**18:15**	0	0	7		10		17	
06:30	0	0	2		5		7		**18:30**	0	0	9		9		18	
06:45	0	0	2	6	3	9	5	15	**18:45**	0	0	7	34	4	28	11	62
07:00	0	0	4		3		7		**19:00**	0	0	10		6		16	
07:15	0	0	1		4		5		**19:15**	0	0	5		6		11	
07:30	0	0	7		7		14		**19:30**	0	0	3		3		6	
07:45	0	0	6	18	6	20	12	38	**19:45**	0	0	2	20	3	18	5	38
08:00	0	0	2		5		7		**20:00**	0	0	7		8		15	
08:15	0	0	4		8		12		**20:15**	0	0	3		2		5	
08:30	0	0	9		5		14		**20:30**	0	0	1		5		6	
08:45	0	0	8	23	13	31	21	54	**20:45**	0	0	1	12	7	22	8	34
09:00	0	0	5		11		16		**21:00**	0	0	4		1		5	
09:15	0	0	9		11		20		**21:15**	0	0	6		1		7	
09:30	0	0	3		8		11		**21:30**	0	0	2		1		3	
09:45	0	0	8	25	16	46	24	71	**21:45**	0	0	6	18	1	4	7	22
10:00	0	0	11		8		19		**22:00**	0	0	4		2		6	
10:15	0	0	8		11		19		**22:15**	0	0	2		2		4	
10:30	0	0	1		10		11		**22:30**	0	0	1		4		5	
10:45	0	0	14	34	10	39	24	73	**22:45**	0	0	4	11	4	12	8	23
11:00	0	0	4		11		15		**23:00**	0	0	4		2		6	
11:15	0	0	12		13		25		**23:15**	0	0	2		0		2	
11:30	0	0	5		11		16		**23:30**	0	0	1		1		2	
11:45	0	0	11	32	11	46	22	78	**23:45**	0	0	2	9	0	3	2	12
TOTALS				155		197		**352**	**TOTALS**				327		342		**669**
SPLIT %				44.0%		56.0%		**34.5%**	**SPLIT %**				48.9%		51.1%		**65.5%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	482	539	1,021

AM Peak Hour				11:15		11:15		**11:15**	**PM Peak Hour**				16:15		12:00		**14:00**
AM Pk Volume				43		51		**94**	**PM Pk Volume**				45		53		**88**
Pk Hr Factor				0.717		0.797		**0.758**	**Pk Hr Factor**				0.662		0.828		**0.846**
7 - 9 Volume	0	0		41		51		**92**	**4 - 6 Volume**	0	0		74		76		**150**
7 - 9 Peak Hour				08:00		08:00		**08:00**	**4 - 6 Peak Hour**				16:15		16:45		**16:30**
7 - 9 Pk Volume	0	0		23		31		**54**	**4 - 6 Pk Volume**	0	0		45		49		**88**
Pk Hr Factor	0.000	0.000		0.639		0.596		**0.643**	**Pk Hr Factor**	0.000	0.000		0.662		0.721		**0.733**

Prepared by National Data & Surveying Services

CLASSIFICATION

E Bennett Rd W/O Brunswick Rd

Day: Saturday
Date: 9/7/2019

City: Grass Valley
Project #: CA19_7288_009e

East Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	2	1	1	0	0	0	0	0	0	0	0	0	4
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	3	5	0	0	0	0	0	0	0	0	0	0	8
06:00	0	2	4	0	0	0	0	0	0	0	0	0	0	6
07:00	0	9	3	2	3	0	0	1	0	0	0	0	0	18
08:00	0	13	9	0	1	0	0	0	0	0	0	0	0	23
09:00	0	17	7	0	1	0	0	0	0	0	0	0	0	25
10:00	1	26	7	0	0	0	0	0	0	0	0	0	0	34
11:00	0	25	5	0	2	0	0	0	0	0	0	0	0	32
12:00 PM	0	25	5	0	2	0	0	0	0	0	0	0	0	32
13:00	0	22	15	0	2	0	0	0	0	0	0	0	0	39
14:00	1	33	6	0	0	0	0	0	0	0	0	0	0	40
15:00	1	28	7	0	2	0	0	0	0	0	0	0	0	38
16:00	0	30	6	0	1	0	0	0	0	0	0	0	0	37
17:00	1	26	6	0	4	0	0	0	0	0	0	0	0	37
18:00	0	27	5	0	2	0	0	0	0	0	0	0	0	34
19:00	0	16	3	0	1	0	0	0	0	0	0	0	0	20
20:00	0	8	4	0	0	0	0	0	0	0	0	0	0	12
21:00	0	14	3	0	1	0	0	0	0	0	0	0	0	18
22:00	0	8	3	0	0	0	0	0	0	0	0	0	0	11
23:00	0	7	2	0	0	0	0	0	0	0	0	0	0	9
Totals	**4**	**345**	**107**	**3**	**22**			**1**						**482**
% of Totals	1%	72%	22%	1%	5%			0%						100%

AM Volumes	1	101	42	3	7	0	0	1	0	0	0	0	0	155
% AM	0%	21%	9%	1%	1%			0%						32%
AM Peak Hour	10:00	10:00	08:00	07:00	07:00			07:00						10:00
Volume	1	26	9	2	3			1						34
PM Volumes	3	244	65	0	15	0	0	0	0	0	0	0	0	327
% PM	1%	51%	13%		3%									68%
PM Peak Hour	14:00	14:00	13:00		17:00									14:00
Volume	1	33	15		4									40

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	41		9%	71		15%	74		15%	296		61%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

E Bennett Rd W/O Brunswick Rd

Day: Saturday
Date: 9/7/2019

City: Grass Valley
Project #: CA19_7288_009w

West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	2	0	0	0	0	0	0	0	0	0	0	2
06:00	0	5	2	0	2	0	0	0	0	0	0	0	0	9
07:00	0	8	7	0	5	0	0	0	0	0	0	0	0	20
08:00	0	25	3	0	3	0	0	0	0	0	0	0	0	31
09:00	0	34	10	0	2	0	0	0	0	0	0	0	0	46
10:00	0	32	5	0	2	0	0	0	0	0	0	0	0	39
11:00	0	32	9	1	4	0	0	0	0	0	0	0	0	46
12:00 PM	2	35	13	0	3	0	0	0	0	0	0	0	0	53
13:00	0	28	8	0	1	0	0	0	0	0	0	0	0	37
14:00	1	31	14	0	2	0	0	0	0	0	0	0	0	48
15:00	2	25	11	0	3	0	0	0	0	0	0	0	0	41
16:00	0	29	6	0	0	0	0	0	0	0	0	0	0	35
17:00	0	33	6	0	2	0	0	0	0	0	0	0	0	41
18:00	0	22	6	0	0	0	0	0	0	0	0	0	0	28
19:00	0	13	5	0	0	0	0	0	0	0	0	0	0	18
20:00	0	17	5	0	0	0	0	0	0	0	0	0	0	22
21:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
22:00	0	8	4	0	0	0	0	0	0	0	0	0	0	12
23:00	0	1	1	0	1	0	0	0	0	0	0	0	0	3
Totals	**5**	**386**	**117**	**1**	**30**									**539**
% of Totals	1%	72%	22%	0%	6%									100%

AM Volumes	0	140	38	1	18	0	0	0	0	0	0	0	0	197
% AM		26%	7%	0%	3%									37%
AM Peak Hour		09:00	09:00	11:00	07:00									09:00
Volume		34	10	1	5									46
PM Volumes	5	246	79	0	12	0	0	0	0	0	0	0	0	342
% PM	1%	46%	15%		2%									63%
PM Peak Hour	12:00	12:00	14:00		12:00									12:00
Volume	2	35	14		3									53

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	51		9%	90		17%	76		14%	322		60%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

E Bennett Rd W/O Brunswick Rd

Day: Saturday
Date: 9/7/2019

City: Grass Valley
Project #: CA19_7288_009

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	3	1	1	0	0	0	0	0	0	0	0	0	5
01:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	3	7	0	0	0	0	0	0	0	0	0	0	10
06:00	0	7	6	0	2	0	0	0	0	0	0	0	0	15
07:00	0	17	10	2	8	0	0	1	0	0	0	0	0	38
08:00	0	38	12	0	4	0	0	0	0	0	0	0	0	54
09:00	0	51	17	0	3	0	0	0	0	0	0	0	0	71
10:00	1	58	12	0	2	0	0	0	0	0	0	0	0	73
11:00	0	57	14	1	6	0	0	0	0	0	0	0	0	78
12:00 PM	2	60	18	0	5	0	0	0	0	0	0	0	0	85
13:00	0	50	23	0	3	0	0	0	0	0	0	0	0	76
14:00	2	64	20	0	2	0	0	0	0	0	0	0	0	88
15:00	3	53	18	0	5	0	0	0	0	0	0	0	0	79
16:00	0	59	12	0	1	0	0	0	0	0	0	0	0	72
17:00	1	59	12	0	6	0	0	0	0	0	0	0	0	78
18:00	0	49	11	0	2	0	0	0	0	0	0	0	0	62
19:00	0	29	8	0	1	0	0	0	0	0	0	0	0	38
20:00	0	25	9	0	0	0	0	0	0	0	0	0	0	34
21:00	0	18	3	0	1	0	0	0	0	0	0	0	0	22
22:00	0	16	7	0	0	0	0	0	0	0	0	0	0	23
23:00	0	8	3	0	1	0	0	0	0	0	0	0	0	12
Totals	9	731	224	4	52			1						1021
% of Totals	1%	72%	22%	0%	5%			0%						100%

AM Volumes	1	241	80	4	25	0	0	1	0	0	0	0	0	352
% AM	0%	24%	8%	0%	2%			0%						34%
AM Peak Hour	10:00	10:00	09:00	07:00	07:00			07:00						11:00
Volume	1	58	17	2	8			1						78
PM Volumes	8	490	144	0	27	0	0	0	0	0	0	0	0	669
% PM	1%	48%	14%		3%									66%
PM Peak Hour	15:00	14:00	13:00		17:00									14:00
Volume	3	64	23		6									88

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	92		9%	161		16%	150		15%	618		61%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

E Bennett Rd W/O Brunswick Rd

Day: Sunday
Date: 9/8/2019

City: Grass Valley
Project #: CA19_7288_009

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	378	401	779

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00	0	0	0		0				**12:00**	0	0	13		14		27	
00:15	0	0	2		0		2		**12:15**	0	0	10		11		21	
00:30	0	0	0		0				**12:30**	0	0	5		7		12	
00:45	0	0	0	2	0			2	**12:45**	0	0	12	40	7	39	19	79
01:00	0	0	0		2		2		**13:00**	0	0	5		7		12	
01:15	0	0	0		0				**13:15**	0	0	8		4		12	
01:30	0	0	1		0		1		**13:30**	0	0	14		11		25	
01:45	0	0	1	2	0	2	1	4	**13:45**	0	0	3	30	13	35	16	65
02:00	0	0	0		1		1		**14:00**	0	0	14		5		19	
02:15	0	0	0		0				**14:15**	0	0	15		6		21	
02:30	0	0	0		0				**14:30**	0	0	6		8		14	
02:45	0	0	0		0	1		1	**14:45**	0	0	7	42	11	30	18	72
03:00	0	0	0		0				**15:00**	0	0	11		10		21	
03:15	0	0	0		1		1		**15:15**	0	0	8		7		15	
03:30	0	0	0		1		1		**15:30**	0	0	3		9		12	
03:45	0	0	0		0	2		2	**15:45**	0	0	7	29	7	33	14	62
04:00	0	0	0		0				**16:00**	0	0	3		9		12	
04:15	0	0	0		0				**16:15**	0	0	7		6		13	
04:30	0	0	1		0		1		**16:30**	0	0	11		3		14	
04:45	0	0	0	1	0			1	**16:45**	0	0	5	26	12	30	17	56
05:00	0	0	0		1		1		**17:00**	0	0	5		6		11	
05:15	0	0	0		1		1		**17:15**	0	0	6		8		14	
05:30	0	0	1		1		2		**17:30**	0	0	13		3		16	
05:45	0	0	0	1	1	4	1	5	**17:45**	0	0	4	28	5	22	9	50
06:00	0	0	0		0				**18:00**	0	0	9		8		17	
06:15	0	0	0		1		1		**18:15**	0	0	7		5		12	
06:30	0	0	0		1		1		**18:30**	0	0	5		1		6	
06:45	0	0	1	1	3	5	4	6	**18:45**	0	0	2	23	5	19	7	42
07:00	0	0	0		2		2		**19:00**	0	0	4		7		11	
07:15	0	0	0		2		2		**19:15**	0	0	9		4		13	
07:30	0	0	1		5		6		**19:30**	0	0	9		3		12	
07:45	0	0	2	3	7	16	9	19	**19:45**	0	0	9	31	2	16	11	47
08:00	0	0	3		4		7		**20:00**	0	0	7		2		9	
08:15	0	0	2		3		5		**20:15**	0	0	6		2		8	
08:30	0	0	4		6		10		**20:30**	0	0	2		2		4	
08:45	0	0	4	13	12	25	16	38	**20:45**	0	0	6	21	4	10	10	31
09:00	0	0	3		9		12		**21:00**	0	0	4		3		7	
09:15	0	0	6		5		11		**21:15**	0	0	3		1		4	
09:30	0	0	1		5		6		**21:30**	0	0	3		3		6	
09:45	0	0	5	15	13	32	18	47	**21:45**	0	0	2	12	1	8	3	20
10:00	0	0	5		3		8		**22:00**	0	0	2		1		3	
10:15	0	0	4		12		16		**22:15**	0	0	1		1		2	
10:30	0	0	8		10		18		**22:30**	0	0	1		1		2	
10:45	0	0	2	19	9	34	11	53	**22:45**	0	0	1	5	1	4	2	9
11:00	0	0	11		7		18		**23:00**	0	0	0		1		1	
11:15	0	0	5		7		12		**23:15**	0	0	1		1		2	
11:30	0	0	4		9		13		**23:30**	0	0	1		0		1	
11:45	0	0	11	31	7	30	18	61	**23:45**	0	0	1	3	2	4	3	7
TOTALS				88		151		**239**	**TOTALS**				290		250		**540**
SPLIT %				36.8%		63.2%		**30.7%**	**SPLIT %**				53.7%		46.3%		**69.3%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	378	401	779

AM Peak Hour				11:45		11:30		**11:30**	**PM Peak Hour**				13:30		12:00		**13:30**
AM Pk Volume				39		41		**79**	**PM Pk Volume**				46		39		**81**
Pk Hr Factor				0.750		0.732		**0.731**	**Pk Hr Factor**				0.767		0.696		**0.810**
7 - 9 Volume	0	0		16		41		**57**	**4 - 6 Volume**	0	0		54		52		**106**
7 - 9 Peak Hour				08:00		08:00		**08:00**	**4 - 6 Peak Hour**				16:45		16:00		**16:45**
7 - 9 Pk Volume	0	0		13		25		**38**	**4 - 6 Pk Volume**	0	0		29		30		**58**
Pk Hr Factor	0.000	0.000		0.813		0.521		**0.594**	**Pk Hr Factor**	0.000	0.000		0.558		0.625		**0.853**

Prepared by National Data & Surveying Services

CLASSIFICATION

E Bennett Rd W/O Brunswick Rd

Day: Sunday
Date: 9/8/2019

City: Grass Valley
Project #: CA19_7288_009e

East Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	2
01:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
05:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
06:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
07:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
08:00	0	11	2	0	0	0	0	0	0	0	0	0	0	13
09:00	0	11	4	0	0	0	0	0	0	0	0	0	0	15
10:00	0	15	4	0	0	0	0	0	0	0	0	0	0	19
11:00	0	21	9	0	0	0	0	0	1	0	0	0	0	31
12:00 PM	0	29	9	0	2	0	0	0	0	0	0	0	0	40
13:00	1	23	4	0	1	0	0	1	0	0	0	0	0	30
14:00	0	35	5	0	1	0	0	1	0	0	0	0	0	42
15:00	1	19	9	0	0	0	0	0	0	0	0	0	0	29
16:00	0	20	6	0	0	0	0	0	0	0	0	0	0	26
17:00	0	22	6	0	0	0	0	0	0	0	0	0	0	28
18:00	0	16	5	0	2	0	0	0	0	0	0	0	0	23
19:00	0	27	4	0	0	0	0	0	0	0	0	0	0	31
20:00	0	14	7	0	0	0	0	0	0	0	0	0	0	21
21:00	0	10	2	0	0	0	0	0	0	0	0	0	0	12
22:00	0	2	2	0	1	0	0	0	0	0	0	0	0	5
23:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
Totals	**2**	**287**	**79**		**7**			**2**	**1**					**378**
% of Totals	1%	76%	21%		2%			1%	0%					100%

AM Volumes	0	68	19	0	0	0	0	0	1	0	0	0	0	88
% AM		18%	5%						0%					23%
AM Peak Hour		11:00	11:00						11:00					11:00
Volume		21	9						1					31
PM Volumes	2	219	60	0	7	0	0	2	0	0	0	0	0	290
% PM	1%	58%	16%		2%			1%						77%
PM Peak Hour	13:00	14:00	12:00		12:00			13:00						14:00
Volume	1	35	9		2			1						42

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	16		4%	70		19%	54		14%	238		63%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

E Bennett Rd W/O Brunswick Rd

Day: Sunday
Date: 9/8/2019

City: Grass Valley
Project #: CA19_7288_009w

West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	3	0	0	1	0	0	0	0	0	0	0	0	4
06:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
07:00	0	11	4	0	1	0	0	0	0	0	0	0	0	16
08:00	1	19	4	0	1	0	0	0	0	0	0	0	0	25
09:00	0	22	9	0	1	0	0	0	0	0	0	0	0	32
10:00	0	26	7	1	0	0	0	0	0	0	0	0	0	34
11:00	0	21	6	0	3	0	0	0	0	0	0	0	0	30
12:00 PM	0	31	7	0	1	0	0	0	0	0	0	0	0	39
13:00	1	28	5	0	0	0	0	1	0	0	0	0	0	35
14:00	0	21	7	0	2	0	0	0	0	0	0	0	0	30
15:00	0	25	8	0	0	0	0	0	0	0	0	0	0	33
16:00	1	25	4	0	0	0	0	0	0	0	0	0	0	30
17:00	0	20	1	0	1	0	0	0	0	0	0	0	0	22
18:00	0	15	3	0	1	0	0	0	0	0	0	0	0	19
19:00	0	13	2	0	1	0	0	0	0	0	0	0	0	16
20:00	0	6	3	0	1	0	0	0	0	0	0	0	0	10
21:00	0	6	2	0	0	0	0	0	0	0	0	0	0	8
22:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
23:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
Totals	**3**	**309**	**73**	**1**	**14**			**1**						**401**
% of Totals	1%	77%	18%	0%	3%			0%						100%

AM Volumes	1	111	31	1	7	0	0	0	0	0	0	0	0	151
% AM	0%	28%	8%	0%	2%									38%
AM Peak Hour	08:00	10:00	09:00	10:00	11:00									10:00
Volume	1	26	9	1	3									34
PM Volumes	2	198	42	0	7	0	0	1	0	0	0	0	0	250
% PM	0%	49%	10%		2%			0%						62%
PM Peak Hour	13:00	12:00	15:00		14:00			13:00						12:00
Volume	1	31	8		2			1						39

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	41		10%	74		18%	52		13%	234		58%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

E Bennett Rd W/O Brunswick Rd

Day: Sunday
Date: 9/8/2019

City: Grass Valley
Project #: CA19_7288_009

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	2
01:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
05:00	0	4	0	0	1	0	0	0	0	0	0	0	0	5
06:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
07:00	0	14	4	0	1	0	0	0	0	0	0	0	0	19
08:00	1	30	6	0	1	0	0	0	0	0	0	0	0	38
09:00	0	33	13	0	1	0	0	0	0	0	0	0	0	47
10:00	0	41	11	1	0	0	0	0	0	0	0	0	0	53
11:00	0	42	15	0	3	0	0	0	1	0	0	0	0	61
12:00 PM	0	60	16	0	3	0	0	0	0	0	0	0	0	79
13:00	2	51	9	0	1	0	0	2	0	0	0	0	0	65
14:00	0	56	12	0	3	0	0	1	0	0	0	0	0	72
15:00	1	44	17	0	0	0	0	0	0	0	0	0	0	62
16:00	1	45	10	0	0	0	0	0	0	0	0	0	0	56
17:00	0	42	7	0	1	0	0	0	0	0	0	0	0	50
18:00	0	31	8	0	3	0	0	0	0	0	0	0	0	42
19:00	0	40	6	0	1	0	0	0	0	0	0	0	0	47
20:00	0	20	10	0	1	0	0	0	0	0	0	0	0	31
21:00	0	16	4	0	0	0	0	0	0	0	0	0	0	20
22:00	0	6	2	0	1	0	0	0	0	0	0	0	0	9
23:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
Totals	5	596	152	1	21			3	1					779
% of Totals	1%	77%	20%	0%	3%			0%	0%					100%

AM Volumes	1	179	50	1	7	0	0	0	1	0	0	0	0	239
% AM	0%	23%	6%	0%	1%				0%					31%
AM Peak Hour	08:00	11:00	11:00	10:00	11:00				11:00					11:00
Volume	1	42	15	1	3				1					61
PM Volumes	4	417	102	0	14	0	0	3	0	0	0	0	0	540
% PM	1%	54%	13%		2%			0%						69%
PM Peak Hour	13:00	12:00	15:00		12:00			13:00						12:00
Volume	2	60	17		3			2						79

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	57		7%	144		18%	106		14%	472		61%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

E Bennett Rd W/O Brunswick Rd

Day: Monday
Date: 9/9/2019

City: Grass Valley
Project #: CA19_7288_009

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	671	729	1,400

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00	0	0	0		0				**12:00**	0	0	12		14		26	
00:15	0	0	0		0				**12:15**	0	0	9		15		24	
00:30	0	0	0		0				**12:30**	0	0	13		11		24	
00:45	0	0	1	1	0		1	1	**12:45**	0	0	14	48	20	60	34	108
01:00	0	0	1		0		1		**13:00**	0	0	11		12		23	
01:15	0	0	0		0				**13:15**	0	0	7		16		23	
01:30	0	0	0		1		1		**13:30**	0	0	14		13		27	
01:45	0	0	0	1	0	1		2	**13:45**	0	0	19	51	15	56	34	107
02:00	0	0	0		0				**14:00**	0	0	10		16		26	
02:15	0	0	0		0				**14:15**	0	0	13		13		26	
02:30	0	0	0		1		1		**14:30**	0	0	8		11		19	
02:45	0	0	0		1	2	1	2	**14:45**	0	0	12	43	16	56	28	99
03:00	0	0	0		0				**15:00**	0	0	17		9		26	
03:15	0	0	1		0		1		**15:15**	0	0	9		11		20	
03:30	0	0	0		1		1		**15:30**	0	0	13		17		30	
03:45	0	0	0	1	0	1		2	**15:45**	0	0	16	55	21	58	37	113
04:00	0	0	1		0		1		**16:00**	0	0	20		18		38	
04:15	0	0	0		0				**16:15**	0	0	17		16		33	
04:30	0	0	1		0		1		**16:30**	0	0	12		17		29	
04:45	0	0	0	2	0			2	**16:45**	0	0	23	72	12	63	35	135
05:00	0	0	0		0				**17:00**	0	0	19		22		41	
05:15	0	0	0		0				**17:15**	0	0	22		12		34	
05:30	0	0	2		2		4		**17:30**	0	0	15		10		25	
05:45	0	0	8	10	2	4	10	14	**17:45**	0	0	6	62	9	53	15	115
06:00	0	0	0		3		3		**18:00**	0	0	12		13		25	
06:15	0	0	1		8		9		**18:15**	0	0	7		8		15	
06:30	0	0	6		9		15		**18:30**	0	0	7		7		14	
06:45	0	0	2	9	6	26	8	35	**18:45**	0	0	4	30	8	36	12	66
07:00	0	0	5		11		16		**19:00**	0	0	11		4		15	
07:15	0	0	6		9		15		**19:15**	0	0	7		5		12	
07:30	0	0	15		10		25		**19:30**	0	0	7		2		9	
07:45	0	0	10	36	15	45	25	81	**19:45**	0	0	8	33	4	15	12	48
08:00	0	0	12		24		36		**20:00**	0	0	4		3		7	
08:15	0	0	16		22		38		**20:15**	0	0	5		2		7	
08:30	0	0	12		19		31		**20:30**	0	0	8		1		9	
08:45	0	0	17	57	22	87	39	144	**20:45**	0	0	6	23	0	6	6	29
09:00	0	0	11		14		25		**21:00**	0	0	4		5		9	
09:15	0	0	9		12		21		**21:15**	0	0	5		1		6	
09:30	0	0	7		13		20		**21:30**	0	0	3		0		3	
09:45	0	0	8	35	13	52	21	87	**21:45**	0	0	3	15	0	6	3	21
10:00	0	0	8		10		18		**22:00**	0	0	2		1		3	
10:15	0	0	8		13		21		**22:15**	0	0	3		0		3	
10:30	0	0	16		13		29		**22:30**	0	0	2		1		3	
10:45	0	0	8	40	11	47	19	87	**22:45**	0	0	1	8	0	2	1	10
11:00	0	0	11		11		22		**23:00**	0	0	1		3		4	
11:15	0	0	8		11		19		**23:15**	0	0	1		1		2	
11:30	0	0	8		11		19		**23:30**	0	0	0		0			
11:45	0	0	9	36	16	49	25	85	**23:45**	0	0	1	3	0	4	1	7
TOTALS				228		314		**542**	**TOTALS**				443		415		**858**
SPLIT %				42.1%		57.9%		**38.7%**	**SPLIT %**				51.6%		48.4%		**61.3%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	671	729	1,400

AM Peak Hour				08:00		08:00		**08:00**	**PM Peak Hour**				16:45		15:30		**16:30**
AM Pk Volume				57		87		**144**	**PM Pk Volume**				79		72		**139**
Pk Hr Factor				0.838		0.906		**0.923**	**Pk Hr Factor**				0.859		0.857		**0.848**
7 - 9 Volume	0	0		93		132		**225**	**4 - 6 Volume**	0	0		134		116		**250**
7 - 9 Peak Hour				08:00		08:00		**08:00**	**4 - 6 Peak Hour**				16:45		16:15		**16:30**
7 - 9 Pk Volume	0	0		57		87		**144**	**4 - 6 Pk Volume**	0	0		79		67		**139**
Pk Hr Factor	0.000	0.000		0.838		0.906		**0.923**	**Pk Hr Factor**	0.000	0.000		0.859		0.761		**0.848**

Prepared by National Data & Surveying Services

CLASSIFICATION

E Bennett Rd W/O Brunswick Rd

Day: Monday
Date: 9/9/2019

City: Grass Valley
Project #: CA19_7288_009e

East Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
05:00	0	4	6	0	0	0	0	0	0	0	0	0	0	10
06:00	0	5	3	0	0	1	0	0	0	0	0	0	0	9
07:00	0	18	7	4	5	1	0	1	0	0	0	0	0	36
08:00	0	39	14	1	2	1	0	0	0	0	0	0	0	57
09:00	0	24	8	0	3	0	0	0	0	0	0	0	0	35
10:00	0	27	9	0	4	0	0	0	0	0	0	0	0	40
11:00	0	21	10	0	4	1	0	0	0	0	0	0	0	36
12:00 PM	1	27	18	0	2	0	0	0	0	0	0	0	0	48
13:00	1	32	13	0	5	0	0	0	0	0	0	0	0	51
14:00	0	26	13	0	3	0	0	0	1	0	0	0	0	43
15:00	0	36	15	0	4	0	0	0	0	0	0	0	0	55
16:00	0	47	17	1	7	0	0	0	0	0	0	0	0	72
17:00	0	40	15	0	6	0	0	1	0	0	0	0	0	62
18:00	0	22	6	0	2	0	0	0	0	0	0	0	0	30
19:00	0	27	5	0	1	0	0	0	0	0	0	0	0	33
20:00	0	18	5	0	0	0	0	0	0	0	0	0	0	23
21:00	0	12	3	0	0	0	0	0	0	0	0	0	0	15
22:00	1	5	1	0	1	0	0	0	0	0	0	0	0	8
23:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
Totals	**3**	**436**	**170**	**6**	**49**	**4**		**2**	**1**					**671**
% of Totals	0%	65%	25%	1%	7%	1%		0%	0%					100%

AM Volumes	0	142	58	5	18	4	0	1	0	0	0	0	0	228
% AM		21%	9%	1%	3%	1%		0%						34%
AM Peak Hour		08:00	08:00	07:00	07:00	06:00		07:00						08:00
Volume		39	14	4	5	1		1						57
PM Volumes	3	294	112	1	31	0	0	1	1	0	0	0	0	443
% PM	0%	44%	17%	0%	5%			0%	0%					66%
PM Peak Hour	12:00	16:00	12:00	16:00	16:00			17:00	14:00					16:00
Volume	1	47	18	1	7			1	1					72

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	93		14%	99		15%	134		20%	345		51%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

E Bennett Rd W/O Brunswick Rd

Day: Monday
Date: 9/9/2019

City: Grass Valley
Project #: CA19_7288_009w

West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	2	0	0	0	2	0	0	0	0	0	0	0	4
06:00	0	15	6	0	4	1	0	0	0	0	0	0	0	26
07:00	0	29	9	0	7	0	0	0	0	0	0	0	0	45
08:00	0	56	21	0	8	1	0	0	1	0	0	0	0	87
09:00	0	35	11	0	6	0	0	0	0	0	0	0	0	52
10:00	0	32	12	0	3	0	0	0	0	0	0	0	0	47
11:00	0	32	11	0	6	0	0	0	0	0	0	0	0	49
12:00 PM	1	33	21	1	4	0	0	0	0	0	0	0	0	60
13:00	1	39	12	0	3	0	0	0	0	0	1	0	0	56
14:00	0	41	12	0	2	1	0	0	0	0	0	0	0	56
15:00	0	42	12	0	4	0	0	0	0	0	0	0	0	58
16:00	0	43	17	0	3	0	0	0	0	0	0	0	0	63
17:00	0	40	9	0	4	0	0	0	0	0	0	0	0	53
18:00	0	24	11	0	1	0	0	0	0	0	0	0	0	36
19:00	0	9	4	0	2	0	0	0	0	0	0	0	0	15
20:00	0	5	0	0	1	0	0	0	0	0	0	0	0	6
21:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
22:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
23:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
Totals	**2**	**492**	**169**	**1**	**58**	**5**			**1**		**1**			**729**
% of Totals	0%	67%	23%	0%	8%	1%			0%		0%			100%

AM Volumes	0	205	70	0	34	4	0	0	1	0	0	0	0	314
% AM		28%	10%		5%	1%			0%					43%
AM Peak Hour		08:00	08:00		08:00	05:00			08:00					08:00
Volume		56	21		8	2			1					87
PM Volumes	2	287	99	1	24	1	0	0	0	0	1	0	0	415
% PM	0%	39%	14%	0%	3%	0%					0%			57%
PM Peak Hour	12:00	16:00	12:00	12:00	12:00	14:00					13:00			16:00
Volume	1	43	21	1	4	1					1			63

Directional Peak Periods	**AM 7-9**		**NOON 12-2**		**PM 4-6**		**Off Peak Volumes**	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	132	18%	116	16%	116	16%	365	50%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

E Bennett Rd W/O Brunswick Rd

Day: Monday
Date: 9/9/2019

City: Grass Valley
Project #: CA19_7288_009

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
05:00	0	6	6	0	0	2	0	0	0	0	0	0	0	14
06:00	0	20	9	0	4	2	0	0	0	0	0	0	0	35
07:00	0	47	16	4	12	1	0	1	0	0	0	0	0	81
08:00	0	95	35	1	10	2	0	0	1	0	0	0	0	144
09:00	0	59	19	0	9	0	0	0	0	0	0	0	0	87
10:00	0	59	21	0	7	0	0	0	0	0	0	0	0	87
11:00	0	53	21	0	10	1	0	0	0	0	0	0	0	85
12:00 PM	2	60	39	1	6	0	0	0	0	0	0	0	0	108
13:00	2	71	25	0	8	0	0	0	0	0	1	0	0	107
14:00	0	67	25	0	5	1	0	0	1	0	0	0	0	99
15:00	0	78	27	0	8	0	0	0	0	0	0	0	0	113
16:00	0	90	34	1	10	0	0	0	0	0	0	0	0	135
17:00	0	80	24	0	10	0	0	1	0	0	0	0	0	115
18:00	0	46	17	0	3	0	0	0	0	0	0	0	0	66
19:00	0	36	9	0	3	0	0	0	0	0	0	0	0	48
20:00	0	23	5	0	1	0	0	0	0	0	0	0	0	29
21:00	0	17	4	0	0	0	0	0	0	0	0	0	0	21
22:00	1	7	1	0	1	0	0	0	0	0	0	0	0	10
23:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
Totals	**5**	**928**	**339**	**7**	**107**	**9**		**2**	**2**		**1**			**1400**
% of Totals	0%	66%	24%	1%	8%	1%		0%	0%		0%			100%

AM Volumes	0	347	128	5	52	8	0	1	1	0	0	0	0	542
% AM		25%	9%	0%	4%	1%		0%	0%					39%
AM Peak Hour		08:00	08:00	07:00	07:00	05:00		07:00	08:00					08:00
Volume		95	35	4	12	2		1	1					144
PM Volumes	5	581	211	2	55	1	0	1	1	0	1	0	0	858
% PM	0%	42%	15%	0%	4%	0%		0%	0%		0%			61%
PM Peak Hour	12:00	16:00	12:00	12:00	16:00	14:00		17:00	14:00		13:00			16:00
Volume	2	90	39	1	10	1		1	1		1			135

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	225	16%	215	15%	250	18%	710	51%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

E Bennett Rd W/O Brunswick Rd

Day: Tuesday
Date: 9/10/2019

City: Grass Valley
Project #: CA19_7288_009

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	696	749	1,445

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00	0	0	0		0				**12:00**	0	0	14		20		34	
00:15	0	0	0		0				**12:15**	0	0	9		12		21	
00:30	0	0	1		1		2		**12:30**	0	0	12		14		26	
00:45	0	0	2	3	0	1	2	4	**12:45**	0	0	13	48	16	62	29	110
01:00	0	0	2		1		3		**13:00**	0	0	8		9		17	
01:15	0	0	0		0				**13:15**	0	0	6		16		22	
01:30	0	0	0		0				**13:30**	0	0	14		10		24	
01:45	0	0	1	3	1	2	2	5	**13:45**	0	0	19	47	21	56	40	103
02:00	0	0	1		0		1		**14:00**	0	0	5		18		23	
02:15	0	0	1		0		1		**14:15**	0	0	10		13		23	
02:30	0	0	0		1		1		**14:30**	0	0	10		13		23	
02:45	0	0	0	2	0	1		3	**14:45**	0	0	19	44	17	61	36	105
03:00	0	0	0		0				**15:00**	0	0	20		11		31	
03:15	0	0	1		1		2		**15:15**	0	0	10		17		27	
03:30	0	0	1		0		1		**15:30**	0	0	15		18		33	
03:45	0	0	0	2	1	2	1	4	**15:45**	0	0	20	65	18	64	38	129
04:00	0	0	3		0		3		**16:00**	0	0	20		13		33	
04:15	0	0	1		1		2		**16:15**	0	0	21		12		33	
04:30	0	0	2		1		3		**16:30**	0	0	13		16		29	
04:45	0	0	2	8	0	2	2	10	**16:45**	0	0	23	77	14	55	37	132
05:00	0	0	1		0		1		**17:00**	0	0	22		21		43	
05:15	0	0	1		1		2		**17:15**	0	0	16		12		28	
05:30	0	0	2		1		3		**17:30**	0	0	14		14		28	
05:45	0	0	11	15	2	4	13	19	**17:45**	0	0	11	63	12	59	23	122
06:00	0	0	1		3		4		**18:00**	0	0	13		18		31	
06:15	0	0	2		4		6		**18:15**	0	0	11		9		20	
06:30	0	0	6		6		12		**18:30**	0	0	4		8		12	
06:45	0	0	1	10	6	19	7	29	**18:45**	0	0	2	30	10	45	12	75
07:00	0	0	3		18		21		**19:00**	0	0	16		2		18	
07:15	0	0	4		11		15		**19:15**	0	0	14		3		17	
07:30	0	0	12		10		22		**19:30**	0	0	2		3		5	
07:45	0	0	12	31	16	55	28	86	**19:45**	0	0	13	45	4	12	17	57
08:00	0	0	9		28		37		**20:00**	0	0	3		0		3	
08:15	0	0	14		21		35		**20:15**	0	0	8		3		11	
08:30	0	0	13		22		35		**20:30**	0	0	12		2		14	
08:45	0	0	16	52	15	86	31	138	**20:45**	0	0	8	31	1	6	9	37
09:00	0	0	14		14		28		**21:00**	0	0	7		3		10	
09:15	0	0	4		11		15		**21:15**	0	0	3		0		3	
09:30	0	0	5		20		25		**21:30**	0	0	0		0			
09:45	0	0	8	31	14	59	22	90	**21:45**	0	0	2	12	1	4	3	16
10:00	0	0	5		8		13		**22:00**	0	0	1		1		2	
10:15	0	0	10		13		23		**22:15**	0	0	2		1		3	
10:30	0	0	14		19		33		**22:30**	0	0	1		1		2	
10:45	0	0	11	40	13	53	24	93	**22:45**	0	0	1	5	0	3	1	8
11:00	0	0	9		6		15		**23:00**	0	0	2		1		3	
11:15	0	0	5		16		21		**23:15**	0	0	1		2		3	
11:30	0	0	8		5		13		**23:30**	0	0	0		1		1	
11:45	0	0	5	27	7	34	12	61	**23:45**	0	0	2	5	0	4	2	9
TOTALS				224		318		**542**	**TOTALS**				472		431		**903**
SPLIT %				41.3%		58.7%		**37.5%**	**SPLIT %**				52.3%		47.7%		**62.5%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	696	749	1,445

AM Peak Hour				08:15		07:45		**08:00**	**PM Peak Hour**				16:15		15:15		**16:15**
AM Pk Volume				57		87		**138**	**PM Pk Volume**				79		66		**142**
Pk Hr Factor				0.891		0.777		**0.932**	**Pk Hr Factor**				0.859		0.917		**0.826**
7 - 9 Volume	0	0		83		141		**224**	**4 - 6 Volume**	0	0		140		114		**254**
7 - 9 Peak Hour				08:00		07:45		**08:00**	**4 - 6 Peak Hour**				16:15		16:15		**16:15**
7 - 9 Pk Volume	0	0		52		87		**138**	**4 - 6 Pk Volume**	0	0		79		63		**142**
Pk Hr Factor	0.000	0.000		0.813		0.777		**0.932**	**Pk Hr Factor**	0.000	0.000		0.859		0.750		**0.826**

Prepared by National Data & Surveying Services

CLASSIFICATION

E Bennett Rd W/O Brunswick Rd

Day: Tuesday
Date: 9/10/2019

City: Grass Valley
Project #: CA19_7288_009e

East Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	3
01:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	4	4	0	0	0	0	0	0	0	0	0	0	8
05:00	0	6	9	0	0	0	0	0	0	0	0	0	0	15
06:00	0	4	6	0	0	0	0	0	0	0	0	0	0	10
07:00	0	21	5	0	5	0	0	0	0	0	0	0	0	31
08:00	0	38	12	0	1	1	0	0	0	0	0	0	0	52
09:00	0	23	4	1	3	0	0	0	0	0	0	0	0	31
10:00	0	24	13	0	3	0	0	0	0	0	0	0	0	40
11:00	1	16	7	0	3	0	0	0	0	0	0	0	0	27
12:00 PM	0	24	21	0	2	1	0	0	0	0	0	0	0	48
13:00	0	30	12	0	5	0	0	0	0	0	0	0	0	47
14:00	0	28	12	1	3	0	0	0	0	0	0	0	0	44
15:00	0	50	11	0	4	0	0	0	0	0	0	0	0	65
16:00	1	60	12	0	4	0	0	0	0	0	0	0	0	77
17:00	0	45	10	1	6	1	0	0	0	0	0	0	0	63
18:00	0	24	3	0	3	0	0	0	0	0	0	0	0	30
19:00	0	39	4	0	2	0	0	0	0	0	0	0	0	45
20:00	0	27	4	0	0	0	0	0	0	0	0	0	0	31
21:00	0	12	0	0	0	0	0	0	0	0	0	0	0	12
22:00	0	2	3	0	0	0	0	0	0	0	0	0	0	5
23:00	0	2	3	0	0	0	0	0	0	0	0	0	0	5
Totals	**2**	**489**	**155**	**3**	**44**	**3**								**696**
% of Totals	0%	70%	22%	0%	6%	0%								100%

AM Volumes	1	146	60	1	15	1	0	0	0	0	0	0	0	224
% AM	0%	21%	9%	0%	2%	0%								32%
AM Peak Hour	11:00	08:00	10:00	09:00	07:00	08:00								08:00
Volume	1	38	13	1	5	1								52
PM Volumes	1	343	95	2	29	2	0	0	0	0	0	0	0	472
% PM	0%	49%	14%	0%	4%	0%								68%
PM Peak Hour	16:00	16:00	12:00	14:00	17:00	12:00								16:00
Volume	1	60	21	1	6	1								77

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	83	12%	95	14%	140	20%	378	54%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

E Bennett Rd W/O Brunswick Rd

Day: Tuesday
Date: 9/10/2019

City: Grass Valley
Project #: CA19_7288_009w

West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
05:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
06:00	0	12	4	0	3	0	0	0	0	0	0	0	0	19
07:00	0	38	10	0	7	0	0	0	0	0	0	0	0	55
08:00	1	56	22	0	7	0	0	0	0	0	0	0	0	86
09:00	0	37	16	0	5	1	0	0	0	0	0	0	0	59
10:00	0	34	18	0	1	0	0	0	0	0	0	0	0	53
11:00	0	28	4	0	2	0	0	0	0	0	0	0	0	34
12:00 PM	1	38	16	1	6	0	0	0	0	0	0	0	0	62
13:00	0	39	11	0	5	1	0	0	0	0	0	0	0	56
14:00	0	45	14	0	2	0	0	0	0	0	0	0	0	61
15:00	0	47	10	0	7	0	0	0	0	0	0	0	0	64
16:00	1	43	8	0	2	1	0	0	0	0	0	0	0	55
17:00	0	48	6	1	4	0	0	0	0	0	0	0	0	59
18:00	0	31	9	0	5	0	0	0	0	0	0	0	0	45
19:00	0	4	2	0	6	0	0	0	0	0	0	0	0	12
20:00	0	3	2	0	1	0	0	0	0	0	0	0	0	6
21:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
22:00	0	1	2	0	0	0	0	0	0	0	0	0	0	3
23:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
Totals	**3**	**523**	**155**	**2**	**63**	**3**								**749**
% of Totals	0%	70%	21%	0%	8%	0%								100%

AM Volumes	1	217	74	0	25	1	0	0	0	0	0	0	0	318
% AM	0%	29%	10%		3%	0%								42%
AM Peak Hour	08:00	08:00	08:00		07:00	09:00								08:00
Volume	1	56	22		7	1								86
PM Volumes	2	306	81	2	38	2	0	0	0	0	0	0	0	431
% PM	0%	41%	11%	0%	5%	0%								58%
PM Peak Hour	12:00	17:00	12:00	12:00	15:00	13:00								15:00
Volume	1	48	16	1	7	1								64

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	141		19%	118		16%	114		15%	376		50%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

E Bennett Rd W/O Brunswick Rd

Day: Tuesday
Date: 9/10/2019

City: Grass Valley
Project #: CA19_7288_009

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	4
01:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
02:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
03:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
04:00	0	6	4	0	0	0	0	0	0	0	0	0	0	10
05:00	0	10	9	0	0	0	0	0	0	0	0	0	0	19
06:00	0	16	10	0	3	0	0	0	0	0	0	0	0	29
07:00	0	59	15	0	12	0	0	0	0	0	0	0	0	86
08:00	1	94	34	0	8	1	0	0	0	0	0	0	0	138
09:00	0	60	20	1	8	1	0	0	0	0	0	0	0	90
10:00	0	58	31	0	4	0	0	0	0	0	0	0	0	93
11:00	1	44	11	0	5	0	0	0	0	0	0	0	0	61
12:00 PM	1	62	37	1	8	1	0	0	0	0	0	0	0	110
13:00	0	69	23	0	10	1	0	0	0	0	0	0	0	103
14:00	0	73	26	1	5	0	0	0	0	0	0	0	0	105
15:00	0	97	21	0	11	0	0	0	0	0	0	0	0	129
16:00	2	103	20	0	6	1	0	0	0	0	0	0	0	132
17:00	0	93	16	2	10	1	0	0	0	0	0	0	0	122
18:00	0	55	12	0	8	0	0	0	0	0	0	0	0	75
19:00	0	43	6	0	8	0	0	0	0	0	0	0	0	57
20:00	0	30	6	0	1	0	0	0	0	0	0	0	0	37
21:00	0	15	1	0	0	0	0	0	0	0	0	0	0	16
22:00	0	3	5	0	0	0	0	0	0	0	0	0	0	8
23:00	0	6	3	0	0	0	0	0	0	0	0	0	0	9
Totals	**5**	**1012**	**310**	**5**	**107**	**6**								**1445**
% of Totals	0%	70%	21%	0%	7%	0%								100%

AM Volumes	2	363	134	1	40	2	0	0	0	0	0	0	0	542
% AM	0%	25%	9%	0%	3%	0%								38%
AM Peak Hour	08:00	08:00	08:00	09:00	07:00	08:00								08:00
Volume	1	94	34	1	12	1								138
PM Volumes	3	649	176	4	67	4	0	0	0	0	0	0	0	903
% PM	0%	45%	12%	0%	5%	0%								62%
PM Peak Hour	16:00	16:00	12:00	17:00	15:00	12:00								16:00
Volume	2	103	37	2	11	1								132

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	224	16%	213	15%	254	18%	754	52%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Whispering Pines Ln E/O Centennial Dr

Day: Wednesday
Date: 9/4/2019

City: Grass Valley
Project #: CA19_7288_010

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,626	1,851	3,477

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00	0	0	4		0		4		**12:00**	0	0	31		37		68	
00:15	0	0	0		1		1		**12:15**	0	0	39		32		71	
00:30	0	0	0		0				**12:30**	0	0	45		30		75	
00:45	0	0	0	4	0	1		5	**12:45**	0	0	32	147	49	148	81	295
01:00	0	0	0		0				**13:00**	0	0	43		40		83	
01:15	0	0	1		0		1		**13:15**	0	0	32		43		75	
01:30	0	0	2		1		3		**13:30**	0	0	32		36		68	
01:45	0	0	0	3	0	1		4	**13:45**	0	0	19	126	33	152	52	278
02:00	0	0	1		0		1		**14:00**	0	0	29		33		62	
02:15	0	0	1		1		2		**14:15**	0	0	18		20		38	
02:30	0	0	1		1		2		**14:30**	0	0	29		29		58	
02:45	0	0	1	4	0	2	1	6	**14:45**	0	0	33	109	33	115	66	224
03:00	0	0	1		0		1		**15:00**	0	0	29		30		59	
03:15	0	0	0		0				**15:15**	0	0	49		37		86	
03:30	0	0	0		0				**15:30**	0	0	50		30		80	
03:45	0	0	1	2	0		1	2	**15:45**	0	0	48	176	38	135	86	311
04:00	0	0	1		3		4		**16:00**	0	0	38		26		64	
04:15	0	0	1		4		5		**16:15**	0	0	35		25		60	
04:30	0	0	1		3		4		**16:30**	0	0	60		32		92	
04:45	0	0	1	4	17	27	18	31	**16:45**	0	0	38	171	29	112	67	283
05:00	0	0	1		5		6		**17:00**	0	0	92		28		120	
05:15	0	0	6		14		20		**17:15**	0	0	50		29		79	
05:30	0	0	2		9		11		**17:30**	0	0	34		22		56	
05:45	0	0	2	11	26	54	28	65	**17:45**	0	0	26	202	11	90	37	292
06:00	0	0	10		14		24		**18:00**	0	0	29		11		40	
06:15	0	0	6		23		29		**18:15**	0	0	15		10		25	
06:30	0	0	6		20		26		**18:30**	0	0	21		15		36	
06:45	0	0	12	34	53	110	65	144	**18:45**	0	0	21	86	15	51	36	137
07:00	0	0	17		31		48		**19:00**	0	0	13		9		22	
07:15	0	0	7		33		40		**19:15**	0	0	7		10		17	
07:30	0	0	7		37		44		**19:30**	0	0	6		5		11	
07:45	0	0	8	39	77	178	85	217	**19:45**	0	0	8	34	8	32	16	66
08:00	0	0	11		63		74		**20:00**	0	0	8		7		15	
08:15	0	0	12		92		104		**20:15**	0	0	4		7		11	
08:30	0	0	23		55		78		**20:30**	0	0	12		2		14	
08:45	0	0	18	64	38	248	56	312	**20:45**	0	0	5	29	6	22	11	51
09:00	0	0	13		45		58		**21:00**	0	0	3		2		5	
09:15	0	0	37		33		70		**21:15**	0	0	4		5		9	
09:30	0	0	39		24		63		**21:30**	0	0	4		3		7	
09:45	0	0	37	126	34	136	71	262	**21:45**	0	0	2	13	3	13	5	26
10:00	0	0	26		24		50		**22:00**	0	0	3		0		3	
10:15	0	0	22		26		48		**22:15**	0	0	1		1		2	
10:30	0	0	32		31		63		**22:30**	0	0	0		1		1	
10:45	0	0	26	106	30	111	56	217	**22:45**	0	0	0	4	1	3	1	7
11:00	0	0	26		24		50		**23:00**	0	0	0		1		1	
11:15	0	0	30		27		57		**23:15**	0	0	0		1		1	
11:30	0	0	38		22		60		**23:30**	0	0	0		2		2	
11:45	0	0	37	131	32	105	69	236	**23:45**	0	0	1	1	1	5	2	6
TOTALS				528		973		**1501**	**TOTALS**				1098		878		**1976**
SPLIT %				35.2%		64.8%		**43.2%**	**SPLIT %**				55.6%		44.4%		**56.8%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,626	1,851	3,477

AM Peak Hour				11:45		07:45		**07:45**	**PM Peak Hour**				16:30		12:45		**16:30**
AM Pk Volume				152		287		**341**	**PM Pk Volume**				240		168		**358**
Pk Hr Factor				0.844		0.780		**0.820**	**Pk Hr Factor**				0.652		0.857		**0.746**
7 - 9 Volume	0	0		103		426		**529**	**4 - 6 Volume**	0	0		373		202		**575**
7 - 9 Peak Hour				08:00		07:45		**07:45**	**4 - 6 Peak Hour**				16:30		16:30		**16:30**
7 - 9 Pk Volume	0	0		64		287		**341**	**4 - 6 Pk Volume**	0	0		240		118		**358**
Pk Hr Factor	0.000	0.000		0.696		0.780		**0.820**	**Pk Hr Factor**	0.000	0.000		0.652		0.922		**0.746**

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln E/O Centennial Dr

Day: Wednesday
Date: 9/4/2019

City: Grass Valley
Project #: CA19_7288_010e

East Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	4
01:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	3	0	0	1	0	0	0	0	0	0	0	0	4
03:00	0	1	0	0	1	0	0	0	0	0	0	0	0	2
04:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
05:00	0	3	4	1	2	1	0	0	0	0	0	0	0	11
06:00	0	19	10	0	5	0	0	0	0	0	0	0	0	34
07:00	0	24	13	0	2	0	0	0	0	0	0	0	0	39
08:00	0	40	17	0	5	2	0	0	0	0	0	0	0	64
09:00	1	91	29	0	4	1	0	0	0	0	0	0	0	126
10:00	1	70	28	0	5	2	0	0	0	0	0	0	0	106
11:00	2	83	36	0	8	2	0	0	0	0	0	0	0	131
12:00 PM	1	110	28	0	6	0	0	2	0	0	0	0	0	147
13:00	0	88	34	1	2	0	0	1	0	0	0	0	0	126
14:00	2	73	28	0	5	1	0	0	0	0	0	0	0	109
15:00	1	121	42	0	12	0	0	0	0	0	0	0	0	176
16:00	0	132	36	0	3	0	0	0	0	0	0	0	0	171
17:00	2	154	36	0	7	2	0	0	0	1	0	0	0	202
18:00	0	68	16	0	2	0	0	0	0	0	0	0	0	86
19:00	0	28	6	0	0	0	0	0	0	0	0	0	0	34
20:00	0	28	1	0	0	0	0	0	0	0	0	0	0	29
21:00	0	11	1	0	0	0	0	0	0	0	1	0	0	13
22:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
23:00	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Totals	**10**	**1158**	**369**	**2**	**70**	**12**		**3**		**1**	**1**			**1626**
% of Totals	1%	71%	23%	0%	4%	1%		0%		0%	0%			100%

AM Volumes	4	342	140	1	33	8	0	0	0	0	0	0	0	528
% AM	0%	21%	9%	0%	2%	0%								32%
AM Peak Hour	11:00	09:00	11:00	05:00	11:00	08:00								11:00
Volume	2	91	36	1	8	2								131
PM Volumes	6	816	229	1	37	4	0	3	0	1	1	0	0	1098
% PM	0%	50%	14%	0%	2%	0%		0%		0%	0%			68%
PM Peak Hour	14:00	17:00	15:00	13:00	15:00	17:00		12:00		17:00	21:00			17:00
Volume	2	154	42	1	12	2		2		1	1			202

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	103	6%	273	17%	373	23%	877	54%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln E/O Centennial Dr

Day: Wednesday
Date: 9/4/2019

City: Grass Valley
Project #: CA19_7288_010w

West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	25	2	0	0	0	0	0	0	0	0	0	0	27
05:00	0	41	10	0	3	0	0	0	0	0	0	0	0	54
06:00	0	86	19	0	2	3	0	0	0	0	0	0	0	110
07:00	3	140	32	1	0	0	0	0	2	0	0	0	0	178
08:00	1	201	36	0	8	0	0	0	0	1	1	0	0	248
09:00	1	90	37	1	2	3	1	0	1	0	0	0	0	136
10:00	1	82	23	0	4	1	0	0	0	0	0	0	0	111
11:00	0	74	28	1	1	0	0	1	0	0	0	0	0	105
12:00 PM	1	115	24	1	4	2	0	1	0	0	0	0	0	148
13:00	1	116	30	0	5	0	0	0	0	0	0	0	0	152
14:00	0	94	16	0	3	0	1	1	0	0	0	0	0	115
15:00	1	87	35	1	4	6	0	0	1	0	0	0	0	135
16:00	0	73	31	1	6	1	0	0	0	0	0	0	0	112
17:00	0	68	17	0	2	2	1	0	0	0	0	0	0	90
18:00	0	42	6	0	2	0	0	0	0	0	1	0	0	51
19:00	0	27	4	0	0	1	0	0	0	0	0	0	0	32
20:00	0	17	4	0	1	0	0	0	0	0	0	0	0	22
21:00	0	10	3	0	0	0	0	0	0	0	0	0	0	13
22:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
23:00	0	3	2	0	0	0	0	0	0	0	0	0	0	5
Totals	**9**	**1396**	**361**	**6**	**47**	**19**	**3**	**3**	**4**	**1**	**2**			**1851**
% of Totals	0%	75%	20%	0%	3%	1%	0%	0%	0%	0%	0%			100%

AM Volumes	6	742	188	3	20	7	1	1	3	1	1	0	0	973
% AM	0%	40%	10%	0%	1%	0%	0%	0%	0%	0%	0%			53%
AM Peak Hour	07:00	08:00	09:00	07:00	08:00	06:00	09:00	11:00	07:00	08:00	08:00			08:00
Volume	3	201	37	1	8	3	1	1	2	1	1			248
PM Volumes	3	654	173	3	27	12	2	2	1	0	1	0	0	878
% PM	0%	35%	9%	0%	1%	1%	0%	0%	0%		0%			47%
PM Peak Hour	12:00	13:00	15:00	12:00	16:00	15:00	14:00	12:00	15:00		18:00			13:00
Volume	1	116	35	1	6	6	1	1	1		1			152

Directional Peak Periods All Classes	AM 7-9 Volume	AM 7-9 %	NOON 12-2 Volume	NOON 12-2 %	PM 4-6 Volume	PM 4-6 %	Off Peak Volumes Volume	Off Peak Volumes %
	426	23%	300	16%	202	11%	923	50%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln E/O Centennial Dr

Day: Wednesday
Date: 9/4/2019

City: Grass Valley
Project #: CA19_7288_010

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	3	2	0	0	0	0	0	0	0	0	0	0	5
01:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
02:00	0	5	0	0	1	0	0	0	0	0	0	0	0	6
03:00	0	1	0	0	1	0	0	0	0	0	0	0	0	2
04:00	0	28	3	0	0	0	0	0	0	0	0	0	0	31
05:00	0	44	14	1	5	1	0	0	0	0	0	0	0	65
06:00	0	105	29	0	7	3	0	0	0	0	0	0	0	144
07:00	3	164	45	1	2	0	0	0	2	0	0	0	0	217
08:00	1	241	53	0	13	2	0	0	0	1	1	0	0	312
09:00	2	181	66	1	6	4	1	0	1	0	0	0	0	262
10:00	2	152	51	0	9	3	0	0	0	0	0	0	0	217
11:00	2	157	64	1	9	2	0	1	0	0	0	0	0	236
12:00 PM	2	225	52	1	10	2	0	3	0	0	0	0	0	295
13:00	1	204	64	1	7	0	0	1	0	0	0	0	0	278
14:00	2	167	44	0	8	1	1	1	0	0	0	0	0	224
15:00	2	208	77	1	16	6	0	0	1	0	0	0	0	311
16:00	0	205	67	1	9	1	0	0	0	0	0	0	0	283
17:00	2	222	53	0	9	4	1	0	0	1	0	0	0	292
18:00	0	110	22	0	4	0	0	0	0	0	1	0	0	137
19:00	0	55	10	0	0	1	0	0	0	0	0	0	0	66
20:00	0	45	5	0	1	0	0	0	0	0	0	0	0	51
21:00	0	21	4	0	0	0	0	0	0	0	1	0	0	26
22:00	0	5	2	0	0	0	0	0	0	0	0	0	0	7
23:00	0	3	2	0	0	1	0	0	0	0	0	0	0	6
Totals	**19**	**2554**	**730**	**8**	**117**	**31**	**3**	**6**	**4**	**2**	**3**			**3477**
% of Totals	1%	73%	21%	0%	3%	1%	0%	0%	0%	0%	0%			100%

AM Volumes	10	1084	328	4	53	15	1	1	3	1	1	0	0	1501
% AM	0%	31%	9%	0%	2%	0%	0%	0%	0%	0%	0%			43%
AM Peak Hour	07:00	08:00	09:00	05:00	08:00	09:00	09:00	11:00	07:00	08:00	08:00			08:00
Volume	3	241	66	1	13	4	1	1	2	1	1			312
PM Volumes	9	1470	402	4	64	16	2	5	1	1	2	0	0	1976
% PM	0%	42%	12%	0%	2%	0%	0%	0%	0%	0%	0%			57%
PM Peak Hour	12:00	12:00	15:00	12:00	15:00	15:00	14:00	12:00	15:00	17:00	18:00			15:00
Volume	2	225	77	1	16	6	1	3	1	1	1			311

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	529		15%	573		16%	575		17%	1800		52%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Whispering Pines Ln E/O Centennial Dr

Day: Thursday
Date: 9/5/2019

City: Grass Valley
Project #: CA19_7288_010

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,592	1,744	3,336

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00	0	0	5		0		5		**12:00**	0	0	43		23		66	
00:15	0	0	0		0				**12:15**	0	0	33		34		67	
00:30	0	0	0		0				**12:30**	0	0	32		41		73	
00:45	0	0	1	6	1	1	2	7	**12:45**	0	0	35	143	35	133	70	276
01:00	0	0	0		0				**13:00**	0	0	40		38		78	
01:15	0	0	0		0				**13:15**	0	0	27		37		64	
01:30	0	0	0		1		1		**13:30**	0	0	31		24		55	
01:45	0	0	1	1	3	4	4	5	**13:45**	0	0	30	128	28	127	58	255
02:00	0	0	3		1		4		**14:00**	0	0	31		16		47	
02:15	0	0	0		0				**14:15**	0	0	28		23		51	
02:30	0	0	0		0				**14:30**	0	0	30		27		57	
02:45	0	0	0	3	1	2	1	5	**14:45**	0	0	36	125	23	89	59	214
03:00	0	0	1		0		1		**15:00**	0	0	21		31		52	
03:15	0	0	0		0				**15:15**	0	0	26		17		43	
03:30	0	0	2		0		2		**15:30**	0	0	69		45		114	
03:45	0	0	0	3	2	2	2	5	**15:45**	0	0	48	164	26	119	74	283
04:00	0	0	1		2		3		**16:00**	0	0	34		36		70	
04:15	0	0	1		6		7		**16:15**	0	0	39		40		79	
04:30	0	0	1		3		4		**16:30**	0	0	51		24		75	
04:45	0	0	0	3	11	22	11	25	**16:45**	0	0	45	169	20	120	65	289
05:00	0	0	1		4		5		**17:00**	0	0	82		23		105	
05:15	0	0	3		7		10		**17:15**	0	0	49		24		73	
05:30	0	0	3		9		12		**17:30**	0	0	34		24		58	
05:45	0	0	1	8	20	40	21	48	**17:45**	0	0	33	198	13	84	46	282
06:00	0	0	4		15		19		**18:00**	0	0	24		9		33	
06:15	0	0	4		18		22		**18:15**	0	0	17		13		30	
06:30	0	0	7		31		38		**18:30**	0	0	25		10		35	
06:45	0	0	12	27	50	114	62	141	**18:45**	0	0	22	88	11	43	33	131
07:00	0	0	19		42		61		**19:00**	0	0	11		11		22	
07:15	0	0	8		24		32		**19:15**	0	0	9		10		19	
07:30	0	0	11		37		48		**19:30**	0	0	7		4		11	
07:45	0	0	10	48	77	180	87	228	**19:45**	0	0	9	36	9	34	18	70
08:00	0	0	13		57		70		**20:00**	0	0	10		4		14	
08:15	0	0	24		69		93		**20:15**	0	0	8		7		15	
08:30	0	0	9		49		58		**20:30**	0	0	5		5		10	
08:45	0	0	25	71	44	219	69	290	**20:45**	0	0	3	26	1	17	4	43
09:00	0	0	20		50		70		**21:00**	0	0	3		2		5	
09:15	0	0	37		37		74		**21:15**	0	0	3		1		4	
09:30	0	0	19		27		46		**21:30**	0	0	0		4		4	
09:45	0	0	17	93	34	148	51	241	**21:45**	0	0	8	14	3	10	11	24
10:00	0	0	24		30		54		**22:00**	0	0	2		1		3	
10:15	0	0	22		33		55		**22:15**	0	0	1		1		2	
10:30	0	0	19		37		56		**22:30**	0	0	2		0		2	
10:45	0	0	26	91	21	121	47	212	**22:45**	0	0	1	6	2	4	3	10
11:00	0	0	37		23		60		**23:00**	0	0	3		0		3	
11:15	0	0	32		31		63		**23:15**	0	0	0		0			
11:30	0	0	28		21		49		**23:30**	0	0	1		0		1	
11:45	0	0	40	137	36	111	76	248	**23:45**	0	0	0	4	0			4
TOTALS				491		964		**1455**	**TOTALS**				1101		780		**1881**
SPLIT %				33.7%		66.3%		**43.6%**	**SPLIT %**				58.5%		41.5%		**56.4%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,592	1,744	3,336

AM Peak Hour				11:45		07:45		**07:45**	**PM Peak Hour**				16:30		12:30		**15:30**
AM Pk Volume				148		252		**308**	**PM Pk Volume**				227		151		**337**
Pk Hr Factor				0.860		0.818		**0.828**	**Pk Hr Factor**				0.692		0.921		**0.739**
7 - 9 Volume	0	0		119		399		**518**	**4 - 6 Volume**	0	0		367		204		**571**
7 - 9 Peak Hour				08:00		07:45		**07:45**	**4 - 6 Peak Hour**				16:30		16:00		**16:15**
7 - 9 Pk Volume	0	0		71		252		**308**	**4 - 6 Pk Volume**	0	0		227		120		**324**
Pk Hr Factor	0.000	0.000		0.710		0.818		**0.828**	**Pk Hr Factor**	0.000	0.000		0.692		0.750		**0.771**

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln E/O Centennial Dr

Day: Thursday
Date: 9/5/2019

City: Grass Valley
Project #: CA19_7288_010e

East Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	3	3	0	0	0	0	0	0	0	0	0	0	6
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
03:00	0	2	0	0	1	0	0	0	0	0	0	0	0	3
04:00	0	1	0	0	2	0	0	0	0	0	0	0	0	3
05:00	0	5	3	0	0	0	0	0	0	0	0	0	0	8
06:00	0	19	7	0	1	0	0	0	0	0	0	0	0	27
07:00	0	23	17	0	7	1	0	0	0	0	0	0	0	48
08:00	0	43	21	1	6	0	0	0	0	0	0	0	0	71
09:00	1	56	28	0	6	2	0	0	0	0	0	0	0	93
10:00	0	65	21	0	3	2	0	0	0	0	0	0	0	91
11:00	1	95	39	0	1	0	0	0	1	0	0	0	0	137
12:00 PM	2	110	21	0	8	2	0	0	0	0	0	0	0	143
13:00	1	84	35	1	4	2	0	0	1	0	0	0	0	128
14:00	2	91	24	0	5	3	0	0	0	0	0	0	0	125
15:00	0	129	27	1	5	0	2	0	0	0	0	0	0	164
16:00	0	137	27	0	3	0	0	2	0	0	0	0	0	169
17:00	2	157	34	0	3	1	0	0	0	1	0	0	0	198
18:00	0	68	17	0	2	1	0	0	0	0	0	0	0	88
19:00	0	33	3	0	0	0	0	0	0	0	0	0	0	36
20:00	1	18	5	0	1	1	0	0	0	0	0	0	0	26
21:00	0	11	3	0	0	0	0	0	0	0	0	0	0	14
22:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
23:00	0	2	1	0	1	0	0	0	0	0	0	0	0	4
Totals	**10**	**1162**	**336**	**3**	**59**	**15**	**2**	**2**	**2**	**1**				**1592**
% of Totals	1%	73%	21%	0%	4%	1%	0%	0%	0%	0%				100%

AM Volumes	2	316	139	1	27	5	0	0	1	0	0	0	0	491
% AM	0%	20%	9%	0%	2%	0%			0%					31%
AM Peak Hour	09:00	11:00	11:00	08:00	07:00	09:00			11:00					11:00
Volume	1	95	39	1	7	2			1					137
PM Volumes	8	846	197	2	32	10	2	2	1	1	0	0	0	1101
% PM	1%	53%	12%	0%	2%	1%	0%	0%	0%	0%				69%
PM Peak Hour	12:00	17:00	13:00	13:00	12:00	14:00	15:00	16:00	13:00	17:00				17:00
Volume	2	157	35	1	8	3	2	2	1	1				198

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	119	7%	271	17%	367	23%	835	52%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln E/O Centennial Dr

Day: Thursday
Date: 9/5/2019

City: Grass Valley
Project #: CA19_7288_010w

West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	2	1	0	1	0	0	0	0	0	0	0	0	4
02:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
03:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
04:00	0	19	3	0	0	0	0	0	0	0	0	0	0	22
05:00	0	35	4	0	1	0	0	0	0	0	0	0	0	40
06:00	0	88	22	0	1	1	0	0	0	0	2	0	0	114
07:00	2	137	30	0	5	3	1	0	2	0	0	0	0	180
08:00	1	168	41	1	5	2	0	0	1	0	0	0	0	219
09:00	0	111	29	0	3	3	2	0	0	0	0	0	0	148
10:00	1	81	30	0	7	1	0	0	1	0	0	0	0	121
11:00	0	81	23	0	4	3	0	0	0	0	0	0	0	111
12:00 PM	0	105	24	0	2	2	0	0	0	0	0	0	0	133
13:00	1	94	27	1	3	1	0	0	0	0	0	0	0	127
14:00	1	73	11	0	2	1	1	0	0	0	0	0	0	89
15:00	0	86	22	0	7	3	1	0	0	0	0	0	0	119
16:00	0	96	19	1	4	0	0	0	0	0	0	0	0	120
17:00	1	63	15	0	2	3	0	0	0	0	0	0	0	84
18:00	0	33	9	0	1	0	0	0	0	0	0	0	0	43
19:00	0	26	7	0	1	0	0	0	0	0	0	0	0	34
20:00	1	14	1	0	1	0	0	0	0	0	0	0	0	17
21:00	0	9	1	0	0	0	0	0	0	0	0	0	0	10
22:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	**8**	**1328**	**321**	**3**	**50**	**23**	**5**		**4**		**2**			**1744**
% of Totals	0%	76%	18%	0%	3%	1%	0%		0%		0%			100%

AM Volumes	4	725	185	1	27	13	3	0	4	0	2	0	0	964
% AM	0%	42%	11%	0%	2%	1%	0%		0%		0%			55%
AM Peak Hour	07:00	08:00	08:00	08:00	10:00	07:00	09:00		07:00		06:00			08:00
Volume	2	168	41	1	7	3	2		2		2			219
PM Volumes	4	603	136	2	23	10	2	0	0	0	0	0	0	780
% PM	0%	35%	8%	0%	1%	1%	0%							45%
PM Peak Hour	13:00	12:00	13:00	13:00	15:00	15:00	14:00							12:00
Volume	1	105	27	1	7	3	1							133

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	399	23%	260	15%	204	12%	881	51%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln E/O Centennial Dr

Day: Thursday
Date: 9/5/2019

City: Grass Valley
Project #: CA19_7288_010

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	4	3	0	0	0	0	0	0	0	0	0	0	7
01:00	0	3	1	0	1	0	0	0	0	0	0	0	0	5
02:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
03:00	0	3	1	0	1	0	0	0	0	0	0	0	0	5
04:00	0	20	3	0	2	0	0	0	0	0	0	0	0	25
05:00	0	40	7	0	1	0	0	0	0	0	0	0	0	48
06:00	0	107	29	0	2	1	0	0	0	0	2	0	0	141
07:00	2	160	47	0	12	4	1	0	2	0	0	0	0	228
08:00	1	211	62	2	11	2	0	0	1	0	0	0	0	290
09:00	1	167	57	0	9	5	2	0	0	0	0	0	0	241
10:00	1	146	51	0	10	3	0	0	1	0	0	0	0	212
11:00	1	176	62	0	5	3	0	0	1	0	0	0	0	248
12:00 PM	2	215	45	0	10	4	0	0	0	0	0	0	0	276
13:00	2	178	62	2	7	3	0	0	1	0	0	0	0	255
14:00	3	164	35	0	7	4	1	0	0	0	0	0	0	214
15:00	0	215	49	1	12	3	3	0	0	0	0	0	0	283
16:00	0	233	46	1	7	0	0	2	0	0	0	0	0	289
17:00	3	220	49	0	5	4	0	0	0	1	0	0	0	282
18:00	0	101	26	0	3	1	0	0	0	0	0	0	0	131
19:00	0	59	10	0	1	0	0	0	0	0	0	0	0	70
20:00	2	32	6	0	2	1	0	0	0	0	0	0	0	43
21:00	0	20	4	0	0	0	0	0	0	0	0	0	0	24
22:00	0	10	0	0	0	0	0	0	0	0	0	0	0	10
23:00	0	2	1	0	1	0	0	0	0	0	0	0	0	4
Totals	18	2490	657	6	109	38	7	2	6	1	2			3336
% of Totals	1%	75%	20%	0%	3%	1%	0%	0%	0%	0%	0%			100%

AM Volumes	6	1041	324	2	54	18	3	0	5	0	2	0	0	1455
% AM	0%	31%	10%	0%	2%	1%	0%		0%		0%			44%
AM Peak Hour	07:00	08:00	08:00	08:00	07:00	09:00	09:00		07:00		06:00			08:00
Volume	2	211	62	2	12	5	2		2		2			290
PM Volumes	12	1449	333	4	55	20	4	2	1	1	0	0	0	1881
% PM	0%	43%	10%	0%	2%	1%	0%	0%	0%	0%				56%
PM Peak Hour	14:00	16:00	13:00	13:00	15:00	12:00	15:00	16:00	13:00	17:00				16:00
Volume	3	233	62	2	12	4	3	2	1	1				289

Directional Peak Periods All Classes	AM 7-9 Volume	AM 7-9 %	NOON 12-2 Volume	NOON 12-2 %	PM 4-6 Volume	PM 4-6 %	Off Peak Volumes Volume	Off Peak Volumes %
	518	16%	531	16%	571	17%	1716	51%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Whispering Pines Ln E/O Centennial Dr

Day: Friday
Date: 9/6/2019

City: Grass Valley
Project #: CA19_7288_010

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,434	1,599	3,033

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00	0	0	4		0		4		**12:00**	0	0	44		30		74	
00:15	0	0	1		0		1		**12:15**	0	0	26		26		52	
00:30	0	0	1		0		1		**12:30**	0	0	38		27		65	
00:45	0	0	0	6	0			6	**12:45**	0	0	37	145	39	122	76	267
01:00	0	0	0		0				**13:00**	0	0	28		42		70	
01:15	0	0	0		0				**13:15**	0	0	35		35		70	
01:30	0	0	0		1		1		**13:30**	0	0	31		27		58	
01:45	0	0	0		2	3	2	3	**13:45**	0	0	35	129	27	131	62	260
02:00	0	0	1		2		3		**14:00**	0	0	26		28		54	
02:15	0	0	1		1		2		**14:15**	0	0	32		22		54	
02:30	0	0	0		0				**14:30**	0	0	25		27		52	
02:45	0	0	0	2	0	3		5	**14:45**	0	0	20	103	30	107	50	210
03:00	0	0	0		0				**15:00**	0	0	28		30		58	
03:15	0	0	3		0		3		**15:15**	0	0	34		34		68	
03:30	0	0	2		0		2		**15:30**	0	0	54		29		83	
03:45	0	0	0	5	3	3	3	8	**15:45**	0	0	37	153	31	124	68	277
04:00	0	0	0		3		3		**16:00**	0	0	40		35		75	
04:15	0	0	2		2		4		**16:15**	0	0	35		15		50	
04:30	0	0	1		4		5		**16:30**	0	0	37		24		61	
04:45	0	0	1	4	10	19	11	23	**16:45**	0	0	48	160	17	91	65	251
05:00	0	0	4		3		7		**17:00**	0	0	73		17		90	
05:15	0	0	0		8		8		**17:15**	0	0	34		20		54	
05:30	0	0	2		3		5		**17:30**	0	0	23		18		41	
05:45	0	0	2	8	24	38	26	46	**17:45**	0	0	32	162	12	67	44	229
06:00	0	0	3		8		11		**18:00**	0	0	27		13		40	
06:15	0	0	3		21		24		**18:15**	0	0	16		11		27	
06:30	0	0	6		29		35		**18:30**	0	0	8		6		14	
06:45	0	0	12	24	39	97	51	121	**18:45**	0	0	14	65	6	36	20	101
07:00	0	0	14		31		45		**19:00**	0	0	12		6		18	
07:15	0	0	9		28		37		**19:15**	0	0	6		10		16	
07:30	0	0	13		34		47		**19:30**	0	0	8		4		12	
07:45	0	0	14	50	62	155	76	205	**19:45**	0	0	3	29	4	24	7	53
08:00	0	0	14		50		64		**20:00**	0	0	0		2		2	
08:15	0	0	15		48		63		**20:15**	0	0	3		6		9	
08:30	0	0	18		47		65		**20:30**	0	0	6		1		7	
08:45	0	0	11	58	38	183	49	241	**20:45**	0	0	3	12	4	13	7	25
09:00	0	0	26		33		59		**21:00**	0	0	0		4		4	
09:15	0	0	19		33		52		**21:15**	0	0	2		2		4	
09:30	0	0	16		35		51		**21:30**	0	0	2		1		3	
09:45	0	0	19	80	33	134	52	214	**21:45**	0	0	0	4	4	11	4	15
10:00	0	0	29		27		56		**22:00**	0	0	0		2		2	
10:15	0	0	23		29		52		**22:15**	0	0	1		2		3	
10:30	0	0	27		23		50		**22:30**	0	0	1		1		2	
10:45	0	0	20	99	35	114	55	213	**22:45**	0	0	0	2	0	5		7
11:00	0	0	26		27		53		**23:00**	0	0	2		1		3	
11:15	0	0	38		28		66		**23:15**	0	0	1		2		3	
11:30	0	0	29		32		61		**23:30**	0	0	1		0		1	
11:45	0	0	37	130	29	116	66	246	**23:45**	0	0	0	4	0	3		7
TOTALS				466		865		**1331**	**TOTALS**				968		734		**1702**
SPLIT %				35.0%		65.0%		**43.9%**	**SPLIT %**				56.9%		43.1%		**56.1%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,434	1,599	3,033

AM Peak Hour				11:15	07:45	**07:45**		**PM Peak Hour**				16:15	12:30	**15:15**
AM Pk Volume				148	207	**268**		**PM Pk Volume**				193	143	**294**
Pk Hr Factor				0.841	0.835	**0.882**		**Pk Hr Factor**				0.661	0.851	**0.886**
7 - 9 Volume	0	0		108	338	**446**		**4 - 6 Volume**	0	0		322	158	**480**
7 - 9 Peak Hour				07:45	07:45	**07:45**		**4 - 6 Peak Hour**				16:15	16:00	**16:30**
7 - 9 Pk Volume	0	0		61	207	**268**		**4 - 6 Pk Volume**	0	0		193	91	**270**
Pk Hr Factor	0.000	0.000		0.847	0.835	**0.882**		**Pk Hr Factor**	0.000	0.000		0.661	0.650	**0.750**

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln E/O Centennial Dr

Day: Friday
Date: 9/6/2019

City: Grass Valley
Project #: CA19_7288_010e

East Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	4	2	0	0	0	0	0	0	0	0	0	0	6
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
03:00	0	3	0	0	2	0	0	0	0	0	0	0	0	5
04:00	0	3	0	0	1	0	0	0	0	0	0	0	0	4
05:00	0	5	2	0	0	1	0	0	0	0	0	0	0	8
06:00	0	14	7	0	3	0	0	0	0	0	0	0	0	24
07:00	0	26	16	0	5	3	0	0	0	0	0	0	0	50
08:00	0	32	19	1	5	1	0	0	0	0	0	0	0	58
09:00	1	53	22	0	4	0	0	0	0	0	0	0	0	80
10:00	1	72	18	0	4	3	0	1	0	0	0	0	0	99
11:00	1	89	31	0	2	4	0	0	2	0	1	0	0	130
12:00 PM	0	113	30	0	2	0	0	0	0	0	0	0	0	145
13:00	3	89	28	0	8	1	0	0	0	0	0	0	0	129
14:00	1	74	25	0	3	0	0	0	0	0	0	0	0	103
15:00	0	110	34	0	6	2	1	0	0	0	0	0	0	153
16:00	1	120	31	0	7	1	0	0	0	0	0	0	0	160
17:00	1	134	21	0	3	2	1	0	0	0	0	0	0	162
18:00	0	48	17	0	0	0	0	0	0	0	0	0	0	65
19:00	0	21	7	0	0	1	0	0	0	0	0	0	0	29
20:00	0	9	3	0	0	0	0	0	0	0	0	0	0	12
21:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
22:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
23:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
Totals	**9**	**1028**	**316**	**1**	**55**	**19**	**2**	**1**	**2**		**1**			**1434**
% of Totals	1%	72%	22%	0%	4%	1%	0%	0%	0%		0%			100%

AM Volumes	3	302	118	1	26	12	0	1	2	0	1	0	0	466
% AM	0%	21%	8%	0%	2%	1%		0%	0%		0%			32%
AM Peak Hour	09:00	11:00	11:00	08:00	07:00	11:00		10:00	11:00		11:00			11:00
Volume	1	89	31	1	5	4		1	2		1			130
PM Volumes	6	726	198	0	29	7	2	0	0	0	0	0	0	968
% PM	0%	51%	14%		2%	0%	0%							68%
PM Peak Hour	13:00	17:00	15:00		13:00	15:00	15:00							17:00
Volume	3	134	34		8	2	1							162

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	108		8%	274		19%	322		22%	730		51%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln E/O Centennial Dr

Day: Friday
Date: 9/6/2019

City: Grass Valley
Project #: CA19_7288_010w

West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
03:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
04:00	0	18	1	0	0	0	0	0	0	0	0	0	0	19
05:00	0	33	3	0	1	1	0	0	0	0	0	0	0	38
06:00	0	75	17	1	2	2	0	0	0	0	0	0	0	97
07:00	1	112	37	1	0	2	0	1	1	0	0	0	0	155
08:00	1	148	27	0	5	2	0	0	0	0	0	0	0	183
09:00	0	108	23	0	2	1	0	0	0	0	0	0	0	134
10:00	1	82	19	1	5	5	0	1	0	0	0	0	0	114
11:00	1	83	27	0	0	3	0	1	1	0	0	0	0	116
12:00 PM	0	93	20	0	3	3	0	0	3	0	0	0	0	122
13:00	2	102	21	0	2	3	1	0	0	0	0	0	0	131
14:00	0	78	22	0	6	1	0	0	0	0	0	0	0	107
15:00	1	94	21	0	6	1	0	1	0	0	0	0	0	124
16:00	0	63	24	0	1	1	0	1	1	0	0	0	0	91
17:00	0	52	9	0	2	3	1	0	0	0	0	0	0	67
18:00	0	28	7	0	1	0	0	0	0	0	0	0	0	36
19:00	0	18	6	0	0	0	0	0	0	0	0	0	0	24
20:00	0	10	1	0	2	0	0	0	0	0	0	0	0	13
21:00	0	9	2	0	0	0	0	0	0	0	0	0	0	11
22:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
23:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
Totals	**7**	**1219**	**291**	**3**	**38**	**28**	**2**	**5**	**6**					**1599**
% of Totals	0%	76%	18%	0%	2%	2%	0%	0%	0%					100%

AM Volumes	4	666	156	3	15	16	0	3	2	0	0	0	0	865
% AM	0%	42%	10%	0%	1%	1%		0%	0%					54%
AM Peak Hour	07:00	08:00	07:00	06:00	08:00	10:00		07:00	07:00					08:00
Volume	1	148	37	1	5	5		1	1					183
PM Volumes	3	553	135	0	23	12	2	2	4	0	0	0	0	734
% PM	0%	35%	8%		1%	1%	0%	0%	0%					46%
PM Peak Hour	13:00	13:00	16:00		14:00	12:00	13:00	15:00	12:00					13:00
Volume	2	102	24		6	3	1	1	3					131

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	338	21%	253	16%	158	10%	850	53%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln E/O Centennial Dr

Day: Friday
Date: 9/6/2019

City: Grass Valley
Project #: CA19_7288_010

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	4	2	0	0	0	0	0	0	0	0	0	0	**6**
01:00	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
02:00	0	3	2	0	0	0	0	0	0	0	0	0	0	**5**
03:00	0	5	1	0	2	0	0	0	0	0	0	0	0	**8**
04:00	0	21	1	0	1	0	0	0	0	0	0	0	0	**23**
05:00	0	38	5	0	1	2	0	0	0	0	0	0	0	**46**
06:00	0	89	24	1	5	2	0	0	0	0	0	0	0	**121**
07:00	1	138	53	1	5	5	0	1	1	0	0	0	0	**205**
08:00	1	180	46	1	10	3	0	0	0	0	0	0	0	**241**
09:00	1	161	45	0	6	1	0	0	0	0	0	0	0	**214**
10:00	2	154	37	1	9	8	0	2	0	0	0	0	0	**213**
11:00	2	172	58	0	2	7	0	1	3	0	1	0	0	**246**
12:00 PM	0	206	50	0	5	3	0	0	3	0	0	0	0	**267**
13:00	5	191	49	0	10	4	1	0	0	0	0	0	0	**260**
14:00	1	152	47	0	9	1	0	0	0	0	0	0	0	**210**
15:00	1	204	55	0	12	3	1	1	0	0	0	0	0	**277**
16:00	1	183	55	0	8	2	0	1	1	0	0	0	0	**251**
17:00	1	186	30	0	5	5	2	0	0	0	0	0	0	**229**
18:00	0	76	24	0	1	0	0	0	0	0	0	0	0	**101**
19:00	0	39	13	0	0	1	0	0	0	0	0	0	0	**53**
20:00	0	19	4	0	2	0	0	0	0	0	0	0	0	**25**
21:00	0	12	3	0	0	0	0	0	0	0	0	0	0	**15**
22:00	0	5	2	0	0	0	0	0	0	0	0	0	0	**7**
23:00	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
Totals	**16**	**2247**	**607**	**4**	**93**	**47**	**4**	**6**	**8**		**1**			**3033**
% of Totals	1%	74%	20%	0%	3%	2%	0%	0%	0%		0%			100%

AM Volumes	7	968	274	4	41	28	0	4	4	0	1	0	0	1331
% AM	0%	32%	9%	0%	1%	1%		0%	0%		0%			44%
AM Peak Hour	10:00	08:00	11:00	06:00	08:00	10:00		10:00	11:00		11:00			11:00
Volume	2	180	58	1	10	8		2	3		1			246
PM Volumes	9	1279	333	0	52	19	4	2	4	0	0	0	0	1702
% PM	0%	42%	11%		2%	1%	0%	0%	0%					56%
PM Peak Hour	13:00	12:00	15:00		15:00	17:00	17:00	15:00	12:00					15:00
Volume	5	206	55		12	5	2	1	3					277

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	446		15%	527		17%	480		16%	1580		52%

Classification Definitions

1	Motorcycles	**4**	Buses	**7**	> =4-Axle Single Units	**10**	>=6-Axle Single Trailers	**13**	>=7-Axle Multi-Trailers
2	Passenger Cars	**5**	2-Axle, 6-Tire Single Units	**8**	<=4-Axle Single Trailers	**11**	<=5-Axle Multi-Trailers		
3	2-Axle, 4-Tire Single Units	**6**	3-Axle Single Units	**9**	5-Axle Single Trailers	**12**	6-Axle Multi-Trailers		

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Whispering Pines Ln E/O Centennial Dr

Day: Saturday
Date: 9/7/2019

City: Grass Valley
Project #: CA19_7288_010

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	529	614	1,143

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00	0	0	3		0		3		**12:00**	0	0	19		14		33	
00:15	0	0	0		1		1		**12:15**	0	0	12		22		34	
00:30	0	0	1		1		2		**12:30**	0	0	12		18		30	
00:45	0	0	0	4	0	2		6	**12:45**	0	0	12	55	10	64	22	119
01:00	0	0	1		1		2		**13:00**	0	0	13		10		23	
01:15	0	0	1		1		2		**13:15**	0	0	11		11		22	
01:30	0	0	0		0				**13:30**	0	0	14		17		31	
01:45	0	0	0	2	0	2		4	**13:45**	0	0	17	55	18	56	35	111
02:00	0	0	0		1		1		**14:00**	0	0	5		13		18	
02:15	0	0	0		0				**14:15**	0	0	20		14		34	
02:30	0	0	0		0				**14:30**	0	0	14		13		27	
02:45	0	0	0		0	1		1	**14:45**	0	0	10	49	9	49	19	98
03:00	0	0	1		1		2		**15:00**	0	0	13		13		26	
03:15	0	0	1		0		1		**15:15**	0	0	10		14		24	
03:30	0	0	0		0				**15:30**	0	0	10		8		18	
03:45	0	0	0	2	0	1		3	**15:45**	0	0	16	49	12	47	28	96
04:00	0	0	0		1		1		**16:00**	0	0	5		10		15	
04:15	0	0	1		1		2		**16:15**	0	0	13		8		21	
04:30	0	0	1		0		1		**16:30**	0	0	14		5		19	
04:45	0	0	0	2	3	5	3	7	**16:45**	0	0	3	35	11	34	14	69
05:00	0	0	1		1		2		**17:00**	0	0	7		8		15	
05:15	0	0	2		3		5		**17:15**	0	0	6		10		16	
05:30	0	0	2		4		6		**17:30**	0	0	14		6		20	
05:45	0	0	1	6	7	15	8	21	**17:45**	0	0	5	32	6	30	11	62
06:00	0	0	0		1		1		**18:00**	0	0	4		2		6	
06:15	0	0	0		5		5		**18:15**	0	0	6		5		11	
06:30	0	0	2		4		6		**18:30**	0	0	2		7		9	
06:45	0	0	3	5	7	17	10	22	**18:45**	0	0	5	17	7	21	12	38
07:00	0	0	3		3		6		**19:00**	0	0	5		4		9	
07:15	0	0	1		6		7		**19:15**	0	0	1		2		3	
07:30	0	0	5		13		18		**19:30**	0	0	4		4		8	
07:45	0	0	3	12	14	36	17	48	**19:45**	0	0	2	12	1	11	3	23
08:00	0	0	6		11		17		**20:00**	0	0	2		1		3	
08:15	0	0	5		11		16		**20:15**	0	0	1		3		4	
08:30	0	0	1		9		10		**20:30**	0	0	6		3		9	
08:45	0	0	8	20	17	48	25	68	**20:45**	0	0	0	9	3	10	3	19
09:00	0	0	12		16		28		**21:00**	0	0	3		0		3	
09:15	0	0	6		13		19		**21:15**	0	0	1		3		4	
09:30	0	0	8		10		18		**21:30**	0	0	0		1		1	
09:45	0	0	7	33	27	66	34	99	**21:45**	0	0	1	5	0	4	1	9
10:00	0	0	14		20		34		**22:00**	0	0	1		3		4	
10:15	0	0	23		10		33		**22:15**	0	0	0		2		2	
10:30	0	0	12		6		18		**22:30**	0	0	3		0		3	
10:45	0	0	12	61	14	50	26	111	**22:45**	0	0	0	4	0	5		9
11:00	0	0	18		9		27		**23:00**	0	0	0		1		1	
11:15	0	0	13		12		25		**23:15**	0	0	0		0			
11:30	0	0	14		8		22		**23:30**	0	0	1		0		1	
11:45	0	0	14	59	9	38	23	97	**23:45**	0	0	0	1	1	2	1	3
TOTALS				206		281		**487**	**TOTALS**				323		333		**656**
SPLIT %				42.3%		57.7%		**42.6%**	**SPLIT %**				49.2%		50.8%		**57.4%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	529	614	1,143

AM Peak Hour				10:15		09:15		**11:45**	**PM Peak Hour**				14:15		12:00		**12:00**
AM Pk Volume				65		70		**120**	**PM Pk Volume**				57		64		**119**
Pk Hr Factor				0.707		0.648		**0.882**	**Pk Hr Factor**				0.713		0.727		**0.875**
7 - 9 Volume	0	0		32		84		**116**	**4 - 6 Volume**	0	0		67		64		**131**
7 - 9 Peak Hour				08:00		07:30		**07:30**	**4 - 6 Peak Hour**				16:15		16:45		**16:00**
7 - 9 Pk Volume	0	0		20		49		**68**	**4 - 6 Pk Volume**	0	0		37		35		**69**
Pk Hr Factor	0.000	0.000		0.625		0.875		**0.944**	**Pk Hr Factor**	0.000	0.000		0.661		0.795		**0.821**

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln E/O Centennial Dr

Day: Saturday
Date: 9/7/2019

City: Grass Valley
Project #: CA19_7288_010e

East Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	4
01:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	1	0	0	1	0	0	0	0	0	0	0	0	2
04:00	0	1	0	0	1	0	0	0	0	0	0	0	0	2
05:00	0	2	3	0	1	0	0	0	0	0	0	0	0	6
06:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
07:00	0	6	3	1	2	0	0	0	0	0	0	0	0	12
08:00	0	13	7	0	0	0	0	0	0	0	0	0	0	20
09:00	0	23	7	0	2	1	0	0	0	0	0	0	0	33
10:00	0	50	9	0	1	0	0	1	0	0	0	0	0	61
11:00	1	44	14	0	0	0	0	0	0	0	0	0	0	59
12:00 PM	0	34	18	0	3	0	0	0	0	0	0	0	0	55
13:00	1	41	10	0	3	0	0	0	0	0	0	0	0	55
14:00	0	36	10	0	3	0	0	0	0	0	0	0	0	49
15:00	0	42	7	0	0	0	0	0	0	0	0	0	0	49
16:00	1	25	6	0	2	0	0	1	0	0	0	0	0	35
17:00	1	25	5	0	0	0	0	1	0	0	0	0	0	32
18:00	0	14	3	0	0	0	0	0	0	0	0	0	0	17
19:00	0	10	1	0	1	0	0	0	0	0	0	0	0	12
20:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
21:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
22:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Totals	**4**	**392**	**108**	**1**	**20**	**1**		**3**						**529**
% of Totals	1%	74%	20%	0%	4%	0%		1%						100%

AM Volumes	1	148	46	1	8	1	0	1	0	0	0	0	0	206
% AM	0%	28%	9%	0%	2%	0%		0%						39%
AM Peak Hour	11:00	10:00	11:00	07:00	07:00	09:00		10:00						10:00
Volume	1	50	14	1	2	1		1						61
PM Volumes	3	244	62	0	12	0	0	2	0	0	0	0	0	323
% PM	1%	46%	12%		2%			0%						61%
PM Peak Hour	13:00	15:00	12:00		12:00			16:00						12:00
Volume	1	42	18		3			1						55

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	32		6%	110		21%	67		13%	320		60%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln E/O Centennial Dr

Day: Saturday
Date: 9/7/2019

City: Grass Valley
Project #: CA19_7288_010w

West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	2
01:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:00	0	4	0	0	1	0	0	0	0	0	0	0	0	5
05:00	0	9	4	0	2	0	0	0	0	0	0	0	0	15
06:00	0	15	1	0	0	1	0	0	0	0	0	0	0	17
07:00	0	26	10	0	0	0	0	0	0	0	0	0	0	36
08:00	1	34	10	0	1	2	0	0	0	0	0	0	0	48
09:00	1	50	11	0	4	0	0	0	0	0	0	0	0	66
10:00	1	39	7	0	3	0	0	0	0	0	0	0	0	50
11:00	0	29	9	0	0	0	0	0	0	0	0	0	0	38
12:00 PM	0	52	9	0	3	0	0	0	0	0	0	0	0	64
13:00	1	46	8	0	1	0	0	0	0	0	0	0	0	56
14:00	0	37	12	0	0	0	0	0	0	0	0	0	0	49
15:00	0	38	8	0	1	0	0	0	0	0	0	0	0	47
16:00	0	29	4	0	0	0	0	0	1	0	0	0	0	34
17:00	0	23	6	0	0	0	1	0	0	0	0	0	0	30
18:00	0	20	1	0	0	0	0	0	0	0	0	0	0	21
19:00	0	10	1	0	0	0	0	0	0	0	0	0	0	11
20:00	0	10	0	0	0	0	0	0	0	0	0	0	0	10
21:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
22:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
23:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
Totals	**4**	**484**	**105**		**16**	**3**	**1**		**1**					**614**
% of Totals	1%	79%	17%		3%	0%	0%		0%					100%

AM Volumes	3	210	54	0	11	3	0	0	0	0	0	0	0	281
% AM	0%	34%	9%		2%	0%								46%
AM Peak Hour	08:00	09:00	09:00		09:00	08:00								09:00
Volume	1	50	11		4	2								66
PM Volumes	1	274	51	0	5	0	1	0	1	0	0	0	0	333
% PM	0%	45%	8%		1%		0%		0%					54%
PM Peak Hour	13:00	12:00	14:00		12:00		17:00		16:00					12:00
Volume	1	52	12		3		1		1					64

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	84		14%	120		20%	64		10%	346		56%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln E/O Centennial Dr

Day: Saturday
Date: 9/7/2019

City: Grass Valley
Project #: CA19_7288_010

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	4	2	0	0	0	0	0	0	0	0	0	0	6
01:00	0	2	2	0	0	0	0	0	0	0	0	0	0	4
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	1	1	0	1	0	0	0	0	0	0	0	0	3
04:00	0	5	0	0	2	0	0	0	0	0	0	0	0	7
05:00	0	11	7	0	3	0	0	0	0	0	0	0	0	21
06:00	0	20	1	0	0	1	0	0	0	0	0	0	0	22
07:00	0	32	13	1	2	0	0	0	0	0	0	0	0	48
08:00	1	47	17	0	1	2	0	0	0	0	0	0	0	68
09:00	1	73	18	0	6	1	0	0	0	0	0	0	0	99
10:00	1	89	16	0	4	0	0	1	0	0	0	0	0	111
11:00	1	73	23	0	0	0	0	0	0	0	0	0	0	97
12:00 PM	0	86	27	0	6	0	0	0	0	0	0	0	0	119
13:00	2	87	18	0	4	0	0	0	0	0	0	0	0	111
14:00	0	73	22	0	3	0	0	0	0	0	0	0	0	98
15:00	0	80	15	0	1	0	0	0	0	0	0	0	0	96
16:00	1	54	10	0	2	0	0	1	1	0	0	0	0	69
17:00	1	48	11	0	0	0	1	1	0	0	0	0	0	62
18:00	0	34	4	0	0	0	0	0	0	0	0	0	0	38
19:00	0	20	2	0	1	0	0	0	0	0	0	0	0	23
20:00	0	18	1	0	0	0	0	0	0	0	0	0	0	19
21:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
22:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
23:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
Totals	**8**	**876**	**213**	**1**	**36**	**4**	**1**	**3**	**1**					**1143**
% of Totals	1%	77%	19%	0%	3%	0%	0%	0%	0%					100%

AM Volumes	4	358	100	1	19	4	0	1	0	0	0	0	0	487
% AM	0%	31%	9%	0%	2%	0%		0%						43%
AM Peak Hour	08:00	10:00	11:00	07:00	09:00	08:00		10:00						10:00
Volume	1	89	23	1	6	2		1						111
PM Volumes	4	518	113	0	17	0	1	2	1	0	0	0	0	656
% PM	0%	45%	10%		1%		0%	0%	0%					57%
PM Peak Hour	13:00	13:00	12:00		12:00		17:00	16:00	16:00					12:00
Volume	2	87	27		6		1	1	1					119

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	116	10%	230	20%	131	11%	666	58%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
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13 >=7-Axle Multi-Trailers

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Whispering Pines Ln E/O Centennial Dr

Day: Sunday
Date: 9/8/2019

City: Grass Valley
Project #: CA19_7288_010

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	312	362	674

AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00	0	0	0	0		12:00	0	0	11	7	18
00:15	0	0	0	1	1	12:15	0	0	8	8	16
00:30	0	0	0	0		12:30	0	0	11	7	18
00:45	0	0	0	0	1	12:45	0	0	7	9	16
01:00	0	0	0	0		13:00	0	0	12	11	23
01:15	0	0	0	0		13:15	0	0	4	5	9
01:30	0	0	0	0		13:30	0	0	3	9	12
01:45	0	0	0	1	1	13:45	0	0	7	6	13
02:00	0	0	0	1	1	14:00	0	0	11	4	15
02:15	0	0	0	0		14:15	0	0	3	8	11
02:30	0	0	0	0		14:30	0	0	7	4	11
02:45	0	0	0	1	2	14:45	0	0	6	6	12
03:00	0	0	1	1	2	15:00	0	0	9	9	18
03:15	0	0	1	0	1	15:15	0	0	10	7	17
03:30	0	0	0	0		15:30	0	0	6	5	11
03:45	0	0	0	0	1	15:45	0	0	8	3	11
04:00	0	0	0	0		16:00	0	0	2	9	11
04:15	0	0	0	0		16:15	0	0	6	6	12
04:30	0	0	0	0		16:30	0	0	2	6	8
04:45	0	0	0	0		16:45	0	0	5	9	14
05:00	0	0	0	0		17:00	0	0	5	6	11
05:15	0	0	0	0		17:15	0	0	7	3	10
05:30	0	0	1	0	1	17:30	0	0	4	8	12
05:45	0	0	0	1	1	17:45	0	0	1	1	2
06:00	0	0	0	2	2	18:00	0	0	3	8	11
06:15	0	0	0	0		18:15	0	0	6	3	9
06:30	0	0	0	1	1	18:30	0	0	8	3	11
06:45	0	0	0	0	3	18:45	0	0	3	7	10
07:00	0	0	1	1	2	19:00	0	0	5	6	11
07:15	0	0	3	2	5	19:15	0	0	2	4	6
07:30	0	0	1	2	3	19:30	0	0	3	4	7
07:45	0	0	2	7	1	6	3	13	19:45	0	0	1	11	8	22	9	33
08:00	0	0	4	4	8	20:00	0	0	5	4	9
08:15	0	0	4	5	9	20:15	0	0	3	4	7
08:30	0	0	3	1	4	20:30	0	0	3	0	3
08:45	0	0	4	15	5	15	9	30	20:45	0	0	4	15	2	10	6	25
09:00	0	0	2	7	9	21:00	0	0	2	2	4
09:15	0	0	4	7	11	21:15	0	0	3	1	4
09:30	0	0	3	9	12	21:30	0	0	1	0	1
09:45	0	0	4	13	23	46	27	59	21:45	0	0	0	6	1	4	1	10
10:00	0	0	11	20	31	22:00	0	0	1	2	3
10:15	0	0	3	11	14	22:15	0	0	1	0	1
10:30	0	0	3	10	13	22:30	0	0	2	0	2
10:45	0	0	1	18	4	45	5	63	22:45	0	0	0	4	0	2		6
11:00	0	0	12	7	19	23:00	0	0	1	0	1
11:15	0	0	6	8	14	23:15	0	0	0	0	
11:30	0	0	11	8	19	23:30	0	0	0	0	
11:45	0	0	15	44	3	26	18	70	23:45	0	0	0	1	0		1
TOTALS				100	147	247	TOTALS				212	215	427
SPLIT %				40.5%	59.5%	36.6%	SPLIT %				49.6%	50.4%	63.4%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	312	362	674

AM Peak Hour			11:30	09:45	09:45	PM Peak Hour			12:15	12:15	12:15
AM Pk Volume			45	64	85	PM Pk Volume			38	35	73
Pk Hr Factor			0.750	0.696	0.685	Pk Hr Factor			0.792	0.795	0.793
7 - 9 Volume	0	0	22	21	43	4 - 6 Volume	0	0	32	48	80
7 - 9 Peak Hour			08:00	08:00	08:00	4 - 6 Peak Hour			16:45	16:00	16:45
7 - 9 Pk Volume	0	0	15	15	30	4 - 6 Pk Volume	0	0	21	30	47
Pk Hr Factor	0.000	0.000	0.938	0.750	0.833	Pk Hr Factor	0.000	0.000	0.750	0.833	0.839

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln E/O Centennial Dr

Day: Sunday
Date: 9/8/2019

City: Grass Valley
Project #: CA19_7288_010e

East Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	1	0	0	1	0	0	0	0	0	0	0	0	2
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
08:00	1	10	3	1	0	0	0	0	0	0	0	0	0	15
09:00	0	7	4	0	2	0	0	0	0	0	0	0	0	13
10:00	0	10	8	0	0	0	0	0	0	0	0	0	0	18
11:00	1	34	9	0	0	0	0	0	0	0	0	0	0	44
12:00 PM	1	28	8	0	0	0	0	0	0	0	0	0	0	37
13:00	0	21	4	0	1	0	0	0	0	0	0	0	0	26
14:00	1	21	5	0	0	0	0	0	0	0	0	0	0	27
15:00	2	21	9	0	0	0	0	1	0	0	0	0	0	33
16:00	0	14	1	0	0	0	0	0	0	0	0	0	0	15
17:00	0	15	2	0	0	0	0	0	0	0	0	0	0	17
18:00	0	15	5	0	0	0	0	0	0	0	0	0	0	20
19:00	0	9	2	0	0	0	0	0	0	0	0	0	0	11
20:00	0	12	2	0	1	0	0	0	0	0	0	0	0	15
21:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
22:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Totals	6	233	66	1	5			1						312
% of Totals	2%	75%	21%	0%	2%			0%						100%

AM Volumes	2	68	26	1	3	0	0	0	0	0	0	0	0	100
% AM	1%	22%	8%	0%	1%									32%
AM Peak Hour	08:00	11:00	11:00	08:00	09:00									11:00
Volume	1	34	9	1	2									44
PM Volumes	4	165	40	0	2	0	0	1	0	0	0	0	0	212
% PM	1%	53%	13%		1%			0%						68%
PM Peak Hour	15:00	12:00	15:00		13:00			15:00						12:00
Volume	2	28	9		1			1						37

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	22		7%	63		20%	32		10%	195		63%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln E/O Centennial Dr

Day: Sunday
Date: 9/8/2019

City: Grass Valley
Project #: CA19_7288_010w

West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
05:00	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
06:00	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
07:00	0	5	0	1	0	0	0	0	0	0	0	0	0	**6**
08:00	0	12	2	1	0	0	0	0	0	0	0	0	0	**15**
09:00	1	39	6	0	0	0	0	0	0	0	0	0	0	**46**
10:00	0	40	3	0	2	0	0	0	0	0	0	0	0	**45**
11:00	1	18	6	0	0	0	1	0	0	0	0	0	0	**26**
12:00 PM	1	23	6	1	0	0	0	0	0	0	0	0	0	**31**
13:00	0	25	6	0	0	0	0	0	0	0	0	0	0	**31**
14:00	0	15	6	0	1	0	0	0	0	0	0	0	0	**22**
15:00	0	17	7	0	0	0	0	0	0	0	0	0	0	**24**
16:00	1	23	6	0	0	0	0	0	0	0	0	0	0	**30**
17:00	0	17	1	0	0	0	0	0	0	0	0	0	0	**18**
18:00	0	15	6	0	0	0	0	0	0	0	0	0	0	**21**
19:00	0	18	4	0	0	0	0	0	0	0	0	0	0	**22**
20:00	0	9	1	0	0	0	0	0	0	0	0	0	0	**10**
21:00	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
22:00	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Totals	**4**	**291**	**60**	**3**	**3**		**1**							**362**
% of Totals	1%	80%	17%	1%	1%		0%							100%

AM Volumes	2	123	17	2	2	0	1	0	0	0	0	0	0	147
% AM	1%	34%	5%	1%	1%		0%							41%
AM Peak Hour	09:00	10:00	09:00	07:00	10:00		11:00							09:00
Volume	1	40	6	1	2		1							46
PM Volumes	2	168	43	1	1	0	0	0	0	0	0	0	0	215
% PM	1%	46%	12%	0%	0%									59%
PM Peak Hour	12:00	13:00	15:00	12:00	14:00									12:00
Volume	1	25	7	1	1									31

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	21		6%	62		17%	48		13%	231		64%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln E/O Centennial Dr

Day: Sunday
Date: 9/8/2019

City: Grass Valley
Project #: CA19_7288_010

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	2	0	0	1	0	0	0	0	0	0	0	0	3
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
06:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
07:00	0	11	1	1	0	0	0	0	0	0	0	0	0	13
08:00	1	22	5	2	0	0	0	0	0	0	0	0	0	30
09:00	1	46	10	0	2	0	0	0	0	0	0	0	0	59
10:00	0	50	11	0	2	0	0	0	0	0	0	0	0	63
11:00	2	52	15	0	0	0	1	0	0	0	0	0	0	70
12:00 PM	2	51	14	1	0	0	0	0	0	0	0	0	0	68
13:00	0	46	10	0	1	0	0	0	0	0	0	0	0	57
14:00	1	36	11	0	1	0	0	0	0	0	0	0	0	49
15:00	2	38	16	0	0	0	0	1	0	0	0	0	0	57
16:00	1	37	7	0	0	0	0	0	0	0	0	0	0	45
17:00	0	32	3	0	0	0	0	0	0	0	0	0	0	35
18:00	0	30	11	0	0	0	0	0	0	0	0	0	0	41
19:00	0	27	6	0	0	0	0	0	0	0	0	0	0	33
20:00	0	21	3	0	1	0	0	0	0	0	0	0	0	25
21:00	0	9	1	0	0	0	0	0	0	0	0	0	0	10
22:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Totals	**10**	**524**	**126**	**4**	**8**		**1**	**1**						**674**
% of Totals	1%	78%	19%	1%	1%		0%	0%						100%

AM Volumes	4	191	43	3	5	0	1	0	0	0	0	0	0	247
% AM	1%	28%	6%	0%	1%		0%							37%
AM Peak Hour	11:00	11:00	11:00	08:00	09:00		11:00							11:00
Volume	2	52	15	2	2		1							70
PM Volumes	6	333	83	1	3	0	0	1	0	0	0	0	0	427
% PM	1%	49%	12%	0%	0%			0%						63%
PM Peak Hour	12:00	12:00	15:00	12:00	13:00			15:00						12:00
Volume	2	51	16	1	1			1						68

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	43		6%	125		19%	80		12%	426		63%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Whispering Pines Ln E/O Centennial Dr

Day: Monday
Date: 9/9/2019

City: Grass Valley
Project #: CA19_7288_010

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,606	1,748	3,354

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00	0	0	1		0		1		**12:00**	0	0	55		27		82	
00:15	0	0	0		0				**12:15**	0	0	36		38		74	
00:30	0	0	0		0				**12:30**	0	0	40		30		70	
00:45	0	0	0	1	0			1	**12:45**	0	0	26	157	40	135	66	292
01:00	0	0	0		0				**13:00**	0	0	38		39		77	
01:15	0	0	1		0		1		**13:15**	0	0	19		32		51	
01:30	0	0	0		2		2		**13:30**	0	0	19		32		51	
01:45	0	0	1	2	1	3	2	5	**13:45**	0	0	31	107	23	126	54	233
02:00	0	0	0		0				**14:00**	0	0	26		17		43	
02:15	0	0	0		0				**14:15**	0	0	23		25		48	
02:30	0	0	0		0				**14:30**	0	0	29		23		52	
02:45	0	0	0		1	1	1	1	**14:45**	0	0	28	106	37	102	65	208
03:00	0	0	1		0		1		**15:00**	0	0	34		33		67	
03:15	0	0	1		1		2		**15:15**	0	0	31		32		63	
03:30	0	0	1		0		1		**15:30**	0	0	51		40		91	
03:45	0	0	0	3	3	4	3	7	**15:45**	0	0	54	170	41	146	95	316
04:00	0	0	1		1		2		**16:00**	0	0	40		35		75	
04:15	0	0	2		5		7		**16:15**	0	0	51		25		76	
04:30	0	0	0		3		3		**16:30**	0	0	67		27		94	
04:45	0	0	0	3	9	18	9	21	**16:45**	0	0	39	197	25	112	64	309
05:00	0	0	2		5		7		**17:00**	0	0	93		31		124	
05:15	0	0	3		6		9		**17:15**	0	0	52		16		68	
05:30	0	0	1		7		8		**17:30**	0	0	27		18		45	
05:45	0	0	4	10	22	40	26	50	**17:45**	0	0	24	196	17	82	41	278
06:00	0	0	7		10		17		**18:00**	0	0	29		7		36	
06:15	0	0	5		15		20		**18:15**	0	0	15		9		24	
06:30	0	0	5		28		33		**18:30**	0	0	11		17		28	
06:45	0	0	11	28	56	109	67	137	**18:45**	0	0	22	77	27	60	49	137
07:00	0	0	15		31		46		**19:00**	0	0	7		5		12	
07:15	0	0	5		36		41		**19:15**	0	0	6		7		13	
07:30	0	0	7		47		54		**19:30**	0	0	4		3		7	
07:45	0	0	10	37	86	200	96	237	**19:45**	0	0	11	28	2	17	13	45
08:00	0	0	15		47		62		**20:00**	0	0	13		6		19	
08:15	0	0	16		59		75		**20:15**	0	0	9		4		13	
08:30	0	0	24		48		72		**20:30**	0	0	21		4		25	
08:45	0	0	22	77	44	198	66	275	**20:45**	0	0	6	49	1	15	7	64
09:00	0	0	21		36		57		**21:00**	0	0	2		2		4	
09:15	0	0	21		30		51		**21:15**	0	0	4		4		8	
09:30	0	0	21		25		46		**21:30**	0	0	1		3		4	
09:45	0	0	28	91	30	121	58	212	**21:45**	0	0	1	8	0	9	1	17
10:00	0	0	31		31		62		**22:00**	0	0	3		2		5	
10:15	0	0	31		26		57		**22:15**	0	0	2		0		2	
10:30	0	0	33		30		63		**22:30**	0	0	0		0			
10:45	0	0	30	125	27	114	57	239	**22:45**	0	0	1	6	0	2	1	8
11:00	0	0	25		29		54		**23:00**	0	0	0		0			
11:15	0	0	25		29		54		**23:15**	0	0	0		0			
11:30	0	0	37		29		66		**23:30**	0	0	0		0			
11:45	0	0	41	128	46	133	87	261	**23:45**	0	0	0		1	1	1	1
TOTALS				505		941		**1446**	**TOTALS**				1101		807		**1908**
SPLIT %				34.9%		65.1%		**43.1%**	**SPLIT %**				57.7%		42.3%		**56.9%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,606	1,748	3,354

AM Peak Hour				11:45		07:45		**11:45**	**PM Peak Hour**				16:30		15:15		**16:15**
AM Pk Volume				172		240		**313**	**PM Pk Volume**				251		148		**358**
Pk Hr Factor				0.782		0.698		**0.899**	**Pk Hr Factor**				0.675		0.902		**0.722**
7 - 9 Volume	0	0		114		398		**512**	**4 - 6 Volume**	0	0		393		194		**587**
7 - 9 Peak Hour				08:00		07:45		**07:45**	**4 - 6 Peak Hour**				16:30		16:00		**16:15**
7 - 9 Pk Volume	0	0		77		240		**305**	**4 - 6 Pk Volume**	0	0		251		112		**358**
Pk Hr Factor	0.000	0.000		0.802		0.698		**0.794**	**Pk Hr Factor**	0.000	0.000		0.675		0.800		**0.722**

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln E/O Centennial Dr

Day: Monday
Date: 9/9/2019

City: Grass Valley
Project #: CA19_7288_010e

East Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1
01:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	1	1	0	1	0	0	0	0	0	0	0	0	3
05:00	0	5	3	0	1	1	0	0	0	0	0	0	0	10
06:00	0	14	10	0	4	0	0	0	0	0	0	0	0	28
07:00	0	24	8	1	4	0	0	0	0	0	0	0	0	37
08:00	0	49	22	0	6	0	0	0	0	0	0	0	0	77
09:00	1	58	27	0	5	0	0	0	0	0	0	0	0	91
10:00	1	79	38	0	5	2	0	0	0	0	0	0	0	125
11:00	1	82	40	0	4	1	0	0	0	0	0	0	0	128
12:00 PM	2	111	34	1	9	0	0	0	0	0	0	0	0	157
13:00	0	73	26	2	5	1	0	0	0	0	0	0	0	107
14:00	0	81	22	0	0	2	0	0	1	0	0	0	0	106
15:00	1	130	29	0	8	2	0	0	0	0	0	0	0	170
16:00	0	150	41	0	6	0	0	0	0	0	0	0	0	197
17:00	1	152	37	1	3	2	0	0	0	0	0	0	0	196
18:00	1	60	16	0	0	0	0	0	0	0	0	0	0	77
19:00	0	23	4	0	1	0	0	0	0	0	0	0	0	28
20:00	0	38	11	0	0	0	0	0	0	0	0	0	0	49
21:00	0	5	3	0	0	0	0	0	0	0	0	0	0	8
22:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	**8**	**1144**	**375**	**5**	**62**	**11**			**1**					**1606**
% of Totals	0%	71%	23%	0%	4%	1%			0%					100%

AM Volumes	3	317	150	1	30	4	0	0	0	0	0	0	0	505
% AM	0%	20%	9%	0%	2%	0%								31%
AM Peak Hour	09:00	11:00	11:00	07:00	08:00	10:00								11:00
Volume	1	82	40	1	6	2								128
PM Volumes	5	827	225	4	32	7	0	0	1	0	0	0	0	1101
% PM	0%	51%	14%	0%	2%	0%			0%					69%
PM Peak Hour	12:00	17:00	16:00	13:00	12:00	14:00			14:00					16:00
Volume	2	152	41	2	9	2			1					197

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	114	7%	264	16%	393	24%	835	52%

Classification Definitions

1	Motorcycles	**4**	Buses	**7**	> =4-Axle Single Units	**10**	>=6-Axle Single Trailers	**13**	>=7-Axle Multi-Trailers
2	Passenger Cars	**5**	2-Axle, 6-Tire Single Units	**8**	<=4-Axle Single Trailers	**11**	<=5-Axle Multi-Trailers		
3	2-Axle, 4-Tire Single Units	**6**	3-Axle Single Units	**9**	5-Axle Single Trailers	**12**	6-Axle Multi-Trailers		

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln E/O Centennial Dr

Day: Monday
Date: 9/9/2019

City: Grass Valley
Project #: CA19_7288_010w

West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	2	2	0	0	0	0	0	0	0	0	0	0	4
04:00	0	17	1	0	0	0	0	0	0	0	0	0	0	18
05:00	0	31	6	0	2	1	0	0	0	0	0	0	0	40
06:00	1	73	29	0	2	1	0	0	3	0	0	0	0	109
07:00	1	161	32	0	5	1	0	0	0	0	0	0	0	200
08:00	0	154	38	0	5	0	0	0	1	0	0	0	0	198
09:00	1	94	23	0	2	1	0	0	0	0	0	0	0	121
10:00	2	77	23	0	8	3	0	0	1	0	0	0	0	114
11:00	0	91	33	2	4	3	0	0	0	0	0	0	0	133
12:00 PM	3	102	24	0	3	1	2	0	0	0	0	0	0	135
13:00	0	95	19	1	8	2	0	1	0	0	0	0	0	126
14:00	0	72	22	0	2	3	2	0	1	0	0	0	0	102
15:00	0	108	28	1	3	5	1	0	0	0	0	0	0	146
16:00	0	83	26	1	0	2	0	0	0	0	0	0	0	112
17:00	0	50	27	0	3	2	0	0	0	0	0	0	0	82
18:00	1	50	7	0	1	1	0	0	0	0	0	0	0	60
19:00	0	14	2	0	1	0	0	0	0	0	0	0	0	17
20:00	0	13	2	0	0	0	0	0	0	0	0	0	0	15
21:00	0	6	3	0	0	0	0	0	0	0	0	0	0	9
22:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Totals	**9**	**1299**	**348**	**5**	**49**	**26**	**5**	**1**	**6**					**1748**
% of Totals	1%	74%	20%	0%	3%	1%	0%	0%	0%					100%

AM Volumes	5	703	188	2	28	10	0	0	5	0	0	0	0	941
% AM	0%	40%	11%	0%	2%	1%			0%					54%
AM Peak Hour	10:00	07:00	08:00	11:00	10:00	10:00			06:00					07:00
Volume	2	161	38	2	8	3			3					200
PM Volumes	4	596	160	3	21	16	5	1	1	0	0	0	0	807
% PM	0%	34%	9%	0%	1%	1%	0%	0%	0%					46%
PM Peak Hour	12:00	15:00	15:00	13:00	13:00	15:00	12:00	13:00	14:00					15:00
Volume	3	108	28	1	8	5	2	1	1					146

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	398	23%	261	15%	194	11%	895	51%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln E/O Centennial Dr

Day: Monday
Date: 9/9/2019

City: Grass Valley
Project #: CA19_7288_010

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1
01:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	5	2	0	0	0	0	0	0	0	0	0	0	7
04:00	0	18	2	0	1	0	0	0	0	0	0	0	0	21
05:00	0	36	9	0	3	2	0	0	0	0	0	0	0	50
06:00	1	87	39	0	6	1	0	0	3	0	0	0	0	137
07:00	1	185	40	1	9	1	0	0	0	0	0	0	0	237
08:00	0	203	60	0	11	0	0	0	1	0	0	0	0	275
09:00	2	152	50	0	7	1	0	0	0	0	0	0	0	212
10:00	3	156	61	0	13	5	0	0	1	0	0	0	0	239
11:00	1	173	73	2	8	4	0	0	0	0	0	0	0	261
12:00 PM	5	213	58	1	12	1	2	0	0	0	0	0	0	292
13:00	0	168	45	3	13	3	0	1	0	0	0	0	0	233
14:00	0	153	44	0	2	5	2	0	2	0	0	0	0	208
15:00	1	238	57	1	11	7	1	0	0	0	0	0	0	316
16:00	0	233	67	1	6	2	0	0	0	0	0	0	0	309
17:00	1	202	64	1	6	4	0	0	0	0	0	0	0	278
18:00	2	110	23	0	1	1	0	0	0	0	0	0	0	137
19:00	0	37	6	0	2	0	0	0	0	0	0	0	0	45
20:00	0	51	13	0	0	0	0	0	0	0	0	0	0	64
21:00	0	11	6	0	0	0	0	0	0	0	0	0	0	17
22:00	0	6	2	0	0	0	0	0	0	0	0	0	0	8
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Totals	**17**	**2443**	**723**	**10**	**111**	**37**	**5**	**1**	**7**					**3354**
% of Totals	1%	73%	22%	0%	3%	1%	0%	0%	0%					100%

AM Volumes	8	1020	338	3	58	14	0	0	5	0	0	0	0	1446
% AM	0%	30%	10%	0%	2%	0%			0%					43%
AM Peak Hour	10:00	08:00	11:00	11:00	10:00	10:00			06:00					08:00
Volume	3	203	73	2	13	5			3					275
PM Volumes	9	1423	385	7	53	23	5	1	2	0	0	0	0	1908
% PM	0%	42%	11%	0%	2%	1%	0%	0%	0%					57%
PM Peak Hour	12:00	15:00	16:00	13:00	13:00	15:00	12:00	13:00	14:00					15:00
Volume	5	238	67	3	13	7	2	1	2					316

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	512		15%	525		16%	587		18%	1730		52%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Whispering Pines Ln E/O Centennial Dr

Day: Tuesday
Date: 9/10/2019

City: Grass Valley
Project #: CA19_7288_010

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,607	1,638	3,245

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00	0	0	0		0				**12:00**	0	0	54		28		82	
00:15	0	0	1		0		1		**12:15**	0	0	37		44		81	
00:30	0	0	0		0				**12:30**	0	0	38		26		64	
00:45	0	0	0	1	0			1	**12:45**	0	0	25	154	33	131	58	285
01:00	0	0	1		1		2		**13:00**	0	0	42		42		84	
01:15	0	0	2		0		2		**13:15**	0	0	21		28		49	
01:30	0	0	0		0				**13:30**	0	0	16		22		38	
01:45	0	0	1	4	0	1	1	5	**13:45**	0	0	35	114	14	106	49	220
02:00	0	0	1		0		1		**14:00**	0	0	22		19		41	
02:15	0	0	1		1		2		**14:15**	0	0	23		26		49	
02:30	0	0	1		0		1		**14:30**	0	0	31		21		52	
02:45	0	0	0	3	1	2	1	5	**14:45**	0	0	32	108	27	93	59	201
03:00	0	0	2		0		2		**15:00**	0	0	30		24		54	
03:15	0	0	1		0		1		**15:15**	0	0	30		26		56	
03:30	0	0	2		0		2		**15:30**	0	0	51		37		88	
03:45	0	0	1	6	2	2	3	8	**15:45**	0	0	46	157	36	123	82	280
04:00	0	0	1		3		4		**16:00**	0	0	46		29		75	
04:15	0	0	1		6		7		**16:15**	0	0	51		26		77	
04:30	0	0	2		7		9		**16:30**	0	0	68		27		95	
04:45	0	0	0	4	8	24	8	28	**16:45**	0	0	35	200	29	111	64	311
05:00	0	0	1		8		9		**17:00**	0	0	91		28		119	
05:15	0	0	2		7		9		**17:15**	0	0	56		18		74	
05:30	0	0	0		4		4		**17:30**	0	0	33		14		47	
05:45	0	0	8	11	20	39	28	50	**17:45**	0	0	21	201	13	73	34	274
06:00	0	0	6		15		21		**18:00**	0	0	28		7		35	
06:15	0	0	6		16		22		**18:15**	0	0	19		12		31	
06:30	0	0	6		27		33		**18:30**	0	0	11		12		23	
06:45	0	0	9	27	55	113	64	140	**18:45**	0	0	22	80	22	53	44	133
07:00	0	0	17		34		51		**19:00**	0	0	8		2		10	
07:15	0	0	3		37		40		**19:15**	0	0	5		8		13	
07:30	0	0	7		49		56		**19:30**	0	0	2		2		4	
07:45	0	0	6	33	87	207	93	240	**19:45**	0	0	9	24	1	13	10	37
08:00	0	0	17		49		66		**20:00**	0	0	14		3		17	
08:15	0	0	15		55		70		**20:15**	0	0	4		3		7	
08:30	0	0	29		47		76		**20:30**	0	0	17		6		23	
08:45	0	0	21	82	42	193	63	275	**20:45**	0	0	7	42	1	13	8	55
09:00	0	0	15		38		53		**21:00**	0	0	4		0		4	
09:15	0	0	21		22		43		**21:15**	0	0	5		4		9	
09:30	0	0	27		20		47		**21:30**	0	0	1		1		2	
09:45	0	0	28	91	30	110	58	201	**21:45**	0	0	2	12	1	6	3	18
10:00	0	0	36		26		62		**22:00**	0	0	1		2		3	
10:15	0	0	25		19		44		**22:15**	0	0	0		1		1	
10:30	0	0	33		24		57		**22:30**	0	0	2		0		2	
10:45	0	0	29	123	25	94	54	217	**22:45**	0	0	2	5	0	3	2	8
11:00	0	0	17		25		42		**23:00**	0	0	1		0		1	
11:15	0	0	26		29		55		**23:15**	0	0	1		0		1	
11:30	0	0	39		35		74		**23:30**	0	0	1		1		2	
11:45	0	0	40	122	37	126	77	248	**23:45**	0	0	0	3	1	2	1	5
TOTALS				507		911		**1418**	**TOTALS**				1100		727		**1827**
SPLIT %				35.8%		64.2%		**43.7%**	**SPLIT %**				60.2%		39.8%		**56.3%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,607	1,638	3,245

AM Peak Hour				11:30		07:30		**11:30**	**PM Peak Hour**				16:30		12:15		**16:15**
AM Pk Volume				170		240		**314**	**PM Pk Volume**				250		145		**355**
Pk Hr Factor				0.787		0.690		**0.957**	**Pk Hr Factor**				0.687		0.824		**0.746**
7 - 9 Volume	0	0		115		400		**515**	**4 - 6 Volume**	0	0		401		184		**585**
7 - 9 Peak Hour				08:00		07:30		**07:45**	**4 - 6 Peak Hour**				16:30		16:00		**16:15**
7 - 9 Pk Volume	0	0		82		240		**305**	**4 - 6 Pk Volume**	0	0		250		111		**355**
Pk Hr Factor	0.000	0.000		0.707		0.690		**0.820**	**Pk Hr Factor**	0.000	0.000		0.687		0.957		**0.746**

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln E/O Centennial Dr

Day: Tuesday
Date: 9/10/2019

City: Grass Valley
Project #: CA19_7288_010e

East Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
02:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
03:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
04:00	0	2	1	0	1	0	0	0	0	0	0	0	0	4
05:00	0	7	1	0	3	0	0	0	0	0	0	0	0	11
06:00	0	15	11	0	1	0	0	0	0	0	0	0	0	27
07:00	0	26	2	0	5	0	0	0	0	0	0	0	0	33
08:00	1	48	26	1	3	3	0	0	0	0	0	0	0	82
09:00	0	58	31	0	2	0	0	0	0	0	0	0	0	91
10:00	0	85	33	0	4	1	0	0	0	0	0	0	0	123
11:00	0	82	34	1	5	0	0	0	0	0	0	0	0	122
12:00 PM	1	116	33	0	3	1	0	0	0	0	0	0	0	154
13:00	0	80	29	0	5	0	0	0	0	0	0	0	0	114
14:00	0	86	21	0	1	0	0	0	0	0	0	0	0	108
15:00	1	130	22	0	3	1	0	0	0	0	0	0	0	157
16:00	0	156	39	0	5	0	0	0	0	0	0	0	0	200
17:00	0	156	40	1	3	1	0	0	0	0	0	0	0	201
18:00	0	64	15	0	1	0	0	0	0	0	0	0	0	80
19:00	1	17	4	0	2	0	0	0	0	0	0	0	0	24
20:00	0	35	7	0	0	0	0	0	0	0	0	0	0	42
21:00	0	7	5	0	0	0	0	0	0	0	0	0	0	12
22:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
23:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
Totals	**4**	**1191**	**355**	**3**	**47**	**7**								**1607**
% of Totals	0%	74%	22%	0%	3%	0%								100%

AM Volumes	1	337	139	2	24	4	0	0	0	0	0	0	0	507
% AM	0%	21%	9%	0%	1%	0%								32%
AM Peak Hour	08:00	10:00	11:00	08:00	07:00	08:00								10:00
Volume	1	85	34	1	5	3								123
PM Volumes	3	854	216	1	23	3	0	0	0	0	0	0	0	1100
% PM	0%	53%	13%	0%	1%	0%								68%
PM Peak Hour	12:00	16:00	17:00	17:00	13:00	12:00								17:00
Volume	1	156	40	1	5	1								201

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	115		7%	268		17%	401		25%	823		51%

Classification Definitions

1	Motorcycles	**4**	Buses	**7**	> =4-Axle Single Units	**10**	>=6-Axle Single Trailers	**13**	>=7-Axle Multi-Trailers
2	Passenger Cars	**5**	2-Axle, 6-Tire Single Units	**8**	<=4-Axle Single Trailers	**11**	<=5-Axle Multi-Trailers		
3	2-Axle, 4-Tire Single Units	**6**	3-Axle Single Units	**9**	5-Axle Single Trailers	**12**	6-Axle Multi-Trailers		

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln E/O Centennial Dr

Day: Tuesday
Date: 9/10/2019

City: Grass Valley
Project #: CA19_7288_010w

West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
04:00	0	19	5	0	0	0	0	0	0	0	0	0	0	24
05:00	0	26	10	0	3	0	0	0	0	0	0	0	0	39
06:00	0	73	35	0	2	3	0	0	0	0	0	0	0	113
07:00	0	171	32	1	2	1	0	0	0	0	0	0	0	207
08:00	1	151	39	0	1	1	0	0	0	0	0	0	0	193
09:00	0	86	19	1	3	1	0	0	0	0	0	0	0	110
10:00	0	71	19	0	3	1	0	0	0	0	0	0	0	94
11:00	1	90	30	0	4	1	0	0	0	0	0	0	0	126
12:00 PM	0	103	24	0	2	2	0	0	0	0	0	0	0	131
13:00	1	85	18	0	2	0	0	0	0	0	0	0	0	106
14:00	0	66	16	1	6	4	0	0	0	0	0	0	0	93
15:00	0	93	23	0	4	3	0	0	0	0	0	0	0	123
16:00	1	85	22	1	1	1	0	0	0	0	0	0	0	111
17:00	2	48	18	0	3	2	0	0	0	0	0	0	0	73
18:00	0	44	4	1	3	1	0	0	0	0	0	0	0	53
19:00	0	8	2	0	2	1	0	0	0	0	0	0	0	13
20:00	0	11	2	0	0	0	0	0	0	0	0	0	0	13
21:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
22:00	0	1	2	0	0	0	0	0	0	0	0	0	0	3
23:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Totals	**6**	**1241**	**323**	**5**	**41**	**22**								**1638**
% of Totals	0%	76%	20%	0%	3%	1%								100%

AM Volumes	2	691	190	2	18	8	0	0	0	0	0	0	0	911
% AM	0%	42%	12%	0%	1%	0%								56%
AM Peak Hour	08:00	07:00	08:00	07:00	11:00	06:00								07:00
Volume	1	171	39	1	4	3								207
PM Volumes	4	550	133	3	23	14	0	0	0	0	0	0	0	727
% PM	0%	34%	8%	0%	1%	1%								44%
PM Peak Hour	17:00	12:00	12:00	14:00	14:00	14:00								12:00
Volume	2	103	24	1	6	4								131

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	400		24%	237		14%	184		11%	817		50%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln E/O Centennial Dr

Day: Tuesday
Date: 9/10/2019

City: Grass Valley
Project #: CA19_7288_010

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
02:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
03:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
04:00	0	21	6	0	1	0	0	0	0	0	0	0	0	28
05:00	0	33	11	0	6	0	0	0	0	0	0	0	0	50
06:00	0	88	46	0	3	3	0	0	0	0	0	0	0	140
07:00	0	197	34	1	7	1	0	0	0	0	0	0	0	240
08:00	2	199	65	1	4	4	0	0	0	0	0	0	0	275
09:00	0	144	50	1	5	1	0	0	0	0	0	0	0	201
10:00	0	156	52	0	7	2	0	0	0	0	0	0	0	217
11:00	1	172	64	1	9	1	0	0	0	0	0	0	0	248
12:00 PM	1	219	57	0	5	3	0	0	0	0	0	0	0	285
13:00	1	165	47	0	7	0	0	0	0	0	0	0	0	220
14:00	0	152	37	1	7	4	0	0	0	0	0	0	0	201
15:00	1	223	45	0	7	4	0	0	0	0	0	0	0	280
16:00	1	241	61	1	6	1	0	0	0	0	0	0	0	311
17:00	2	204	58	1	6	3	0	0	0	0	0	0	0	274
18:00	0	108	19	1	4	1	0	0	0	0	0	0	0	133
19:00	1	25	6	0	4	1	0	0	0	0	0	0	0	37
20:00	0	46	9	0	0	0	0	0	0	0	0	0	0	55
21:00	0	11	7	0	0	0	0	0	0	0	0	0	0	18
22:00	0	5	3	0	0	0	0	0	0	0	0	0	0	8
23:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
Totals	**10**	**2432**	**678**	**8**	**88**	**29**								**3245**
% of Totals	0%	75%	21%	0%	3%	1%								100%

AM Volumes	3	1028	329	4	42	12	0	0	0	0	0	0	0	1418
% AM	0%	32%	10%	0%	1%	0%								44%
AM Peak Hour	08:00	08:00	08:00	07:00	11:00	08:00								08:00
Volume	2	199	65	1	9	4								275
PM Volumes	7	1404	349	4	46	17	0	0	0	0	0	0	0	1827
% PM	0%	43%	11%	0%	1%	1%								56%
PM Peak Hour	17:00	16:00	16:00	14:00	13:00	14:00								16:00
Volume	2	241	61	1	7	4								311

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	515		16%	505		16%	585		18%	1640		51%

Classification Definitions

1	Motorcycles	**4**	Buses	**7**	> =4-Axle Single Units	**10**	>=6-Axle Single Trailers	**13**	>=7-Axle Multi-Trailers
2	Passenger Cars	**5**	2-Axle, 6-Tire Single Units	**8**	<=4-Axle Single Trailers	**11**	<=5-Axle Multi-Trailers		
3	2-Axle, 4-Tire Single Units	**6**	3-Axle Single Units	**9**	5-Axle Single Trailers	**12**	6-Axle Multi-Trailers		

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Wednesday
Date: 9/4/2019

City: Grass Valley
Project #: CA19_7288_011

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,401	1,189	2,590

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00	0	0	0		0				**12:00**	0	0	60		19		79	
00:15	0	0	0		0				**12:15**	0	0	28		27		55	
00:30	0	0	1		0		1		**12:30**	0	0	27		26		53	
00:45	0	0	0	1	1	1	1	2	**12:45**	0	0	30	145	39	111	69	256
01:00	0	0	0		0				**13:00**	0	0	28		28		56	
01:15	0	0	0		2		2		**13:15**	0	0	28		31		59	
01:30	0	0	0		1		1		**13:30**	0	0	25		27		52	
01:45	0	0	1	1	0	3	1	4	**13:45**	0	0	27	108	27	113	54	221
02:00	0	0	0		0				**14:00**	0	0	29		17		46	
02:15	0	0	0		1		1		**14:15**	0	0	19		16		35	
02:30	0	0	0		1		1		**14:30**	0	0	26		21		47	
02:45	0	0	0		0	2		2	**14:45**	0	0	27	101	22	76	49	177
03:00	0	0	0		0				**15:00**	0	0	41		21		62	
03:15	0	0	0		0				**15:15**	0	0	26		23		49	
03:30	0	0	0		0				**15:30**	0	0	54		16		70	
03:45	0	0	0		0				**15:45**	0	0	35	156	27	87	62	243
04:00	0	0	3		3		6		**16:00**	0	0	28		22		50	
04:15	0	0	1		1		2		**16:15**	0	0	32		14		46	
04:30	0	0	2		2		4		**16:30**	0	0	40		23		63	
04:45	0	0	0	6	2	8	2	14	**16:45**	0	0	25	125	22	81	47	206
05:00	0	0	2		4		6		**17:00**	0	0	65		9		74	
05:15	0	0	4		2		6		**17:15**	0	0	34		14		48	
05:30	0	0	4		7		11		**17:30**	0	0	28		7		35	
05:45	0	0	7	17	14	27	21	44	**17:45**	0	0	16	143	11	41	27	184
06:00	0	0	4		8		12		**18:00**	0	0	8		6		14	
06:15	0	0	3		10		13		**18:15**	0	0	17		1		18	
06:30	0	0	8		9		17		**18:30**	0	0	18		7		25	
06:45	0	0	15	30	22	49	37	79	**18:45**	0	0	19	62	8	22	27	84
07:00	0	0	21		15		36		**19:00**	0	0	14		3		17	
07:15	0	0	11		24		35		**19:15**	0	0	6		7		13	
07:30	0	0	12		26		38		**19:30**	0	0	3		2		5	
07:45	0	0	10	54	32	97	42	151	**19:45**	0	0	4	27	2	14	6	41
08:00	0	0	12		26		38		**20:00**	0	0	7		5		12	
08:15	0	0	20		41		61		**20:15**	0	0	7		4		11	
08:30	0	0	21		41		62		**20:30**	0	0	6		2		8	
08:45	0	0	18	71	38	146	56	217	**20:45**	0	0	9	29	3	14	12	43
09:00	0	0	29		23		52		**21:00**	0	0	2		2		4	
09:15	0	0	38		18		56		**21:15**	0	0	7		2		9	
09:30	0	0	23		28		51		**21:30**	0	0	3		1		4	
09:45	0	0	22	112	46	115	68	227	**21:45**	0	0	2	14	1	6	3	20
10:00	0	0	20		13		33		**22:00**	0	0	3		1		4	
10:15	0	0	19		27		46		**22:15**	0	0	2		0		2	
10:30	0	0	17		19		36		**22:30**	0	0	1		0		1	
10:45	0	0	23	79	31	90	54	169	**22:45**	0	0	1	7	0	1	1	8
11:00	0	0	21		20		41		**23:00**	0	0	1		0		1	
11:15	0	0	17		21		38		**23:15**	0	0	2		0		2	
11:30	0	0	37		16		53		**23:30**	0	0	2		0		2	
11:45	0	0	30	105	26	83	56	188	**23:45**	0	0	3	8	2	2	5	10
TOTALS				476		621		**1097**	**TOTALS**				925		568		**1493**
SPLIT %				43.4%		56.6%		**42.4%**	**SPLIT %**				62.0%		38.0%		**57.6%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,401	1,189	2,590

AM Peak Hour			11:30	08:00	**11:30**	**PM Peak Hour**		16:30	12:45	**12:00**
AM Pk Volume			155	146	**243**	**PM Pk Volume**		164	125	**256**
Pk Hr Factor			0.646	0.890	**0.769**	**Pk Hr Factor**		0.631	0.801	**0.810**
7 - 9 Volume	0	0	125	243	**368**	**4 - 6 Volume**	0	0 268	122	**390**
7 - 9 Peak Hour			08:00	08:00	**08:00**	**4 - 6 Peak Hour**		16:30	16:00	**16:30**
7 - 9 Pk Volume	0	0	71	146	**217**	**4 - 6 Pk Volume**	0	0 164	81	**232**
Pk Hr Factor	0.000	0.000	0.845	0.890	**0.875**	**Pk Hr Factor**	0.000	0.000 0.631	0.880	**0.784**

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Wednesday
Date: 9/4/2019

City: Grass Valley
Project #: CA19_7288_011e

East Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	4	1	0	1	0	0	0	0	0	0	0	0	6
05:00	0	10	3	0	3	1	0	0	0	0	0	0	0	17
06:00	0	20	5	1	1	2	0	0	0	0	1	0	0	30
07:00	0	29	16	1	6	0	0	1	1	0	0	0	0	54
08:00	0	44	17	0	9	0	0	0	1	0	0	0	0	71
09:00	1	71	30	0	5	3	0	0	1	0	1	0	0	112
10:00	0	50	22	1	6	0	0	0	0	0	0	0	0	79
11:00	0	72	27	1	4	0	0	1	0	0	0	0	0	105
12:00 PM	1	105	32	0	5	2	0	0	0	0	0	0	0	145
13:00	0	70	27	0	11	0	0	0	0	0	0	0	0	108
14:00	1	65	20	0	9	1	0	3	2	0	0	0	0	101
15:00	3	98	41	1	8	3	0	1	1	0	0	0	0	156
16:00	0	89	26	0	8	0	0	2	0	0	0	0	0	125
17:00	1	112	27	0	3	0	0	0	0	0	0	0	0	143
18:00	1	44	15	0	2	0	0	0	0	0	0	0	0	62
19:00	0	17	10	0	0	0	0	0	0	0	0	0	0	27
20:00	0	22	5	0	2	0	0	0	0	0	0	0	0	29
21:00	0	9	4	0	1	0	0	0	0	0	0	0	0	14
22:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
23:00	0	5	3	0	0	0	0	0	0	0	0	0	0	8
Totals	**8**	**943**	**333**	**5**	**84**	**12**		**8**	**6**		**2**			**1401**
% of Totals	1%	67%	24%	0%	6%	1%		1%	0%		0%			100%

AM Volumes	1	301	122	4	35	6	0	2	3	0	2	0	0	476
% AM	0%	21%	9%	0%	2%	0%		0%	0%		0%			34%
AM Peak Hour	09:00	11:00	09:00	06:00	08:00	09:00		07:00	07:00		06:00			09:00
Volume	1	72	30	1	9	3		1	1		1			112
PM Volumes	7	642	211	1	49	6	0	6	3	0	0	0	0	925
% PM	0%	46%	15%	0%	3%	0%		0%	0%					66%
PM Peak Hour	15:00	17:00	15:00	15:00	13:00	15:00		14:00	14:00					15:00
Volume	3	112	41	1	11	3		3	2					156

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	125	9%	253	18%	268	19%	755	54%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Wednesday
Date: 9/4/2019

City: Grass Valley
Project #: CA19_7288_011w

West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1
01:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	6	2	0	0	0	0	0	0	0	0	0	0	8
05:00	0	14	5	0	5	3	0	0	0	0	0	0	0	27
06:00	0	32	13	0	4	0	0	0	0	0	0	0	0	49
07:00	1	73	19	0	3	0	0	0	1	0	0	0	0	97
08:00	1	105	24	1	13	1	0	1	0	0	0	0	0	146
09:00	0	79	26	0	10	0	0	0	0	0	0	0	0	115
10:00	0	53	23	0	11	1	0	0	2	0	0	0	0	90
11:00	0	54	20	0	8	1	0	0	0	0	0	0	0	83
12:00 PM	0	79	20	1	10	0	0	1	0	0	0	0	0	111
13:00	2	75	26	1	8	1	0	0	0	0	0	0	0	113
14:00	1	46	16	0	8	1	0	3	1	0	0	0	0	76
15:00	0	52	24	0	11	0	0	0	0	0	0	0	0	87
16:00	1	58	16	1	5	0	0	0	0	0	0	0	0	81
17:00	0	26	7	0	8	0	0	0	0	0	0	0	0	41
18:00	0	20	1	0	1	0	0	0	0	0	0	0	0	22
19:00	0	11	3	0	0	0	0	0	0	0	0	0	0	14
20:00	0	9	5	0	0	0	0	0	0	0	0	0	0	14
21:00	0	4	0	0	2	0	0	0	0	0	0	0	0	6
22:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Totals	**6**	**804**	**251**	**4**	**107**	**8**		**5**	**4**					**1189**
% of Totals	1%	68%	21%	0%	9%	1%		0%	0%					100%

AM Volumes	2	421	133	1	54	6	0	1	3	0	0	0	0	621
% AM	0%	35%	11%	0%	5%	1%		0%	0%					52%
AM Peak Hour	07:00	08:00	09:00	08:00	08:00	05:00		08:00	10:00					08:00
Volume	1	105	26	1	13	3		1	2					146
PM Volumes	4	383	118	3	53	2	0	4	1	0	0	0	0	568
% PM	0%	32%	10%	0%	4%	0%		0%	0%					48%
PM Peak Hour	13:00	12:00	13:00	12:00	15:00	13:00		14:00	14:00					13:00
Volume	2	79	26	1	11	1		3	1					113

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	243		20%	224		19%	122		10%	600		50%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Wednesday
Date: 9/4/2019

City: Grass Valley
Project #: CA19_7288_011

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	2
01:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	10	3	0	1	0	0	0	0	0	0	0	0	14
05:00	0	24	8	0	8	4	0	0	0	0	0	0	0	44
06:00	0	52	18	1	5	2	0	0	0	0	1	0	0	79
07:00	1	102	35	1	9	0	0	1	2	0	0	0	0	151
08:00	1	149	41	1	22	1	0	1	1	0	0	0	0	217
09:00	1	150	56	0	15	3	0	0	1	0	1	0	0	227
10:00	0	103	45	1	17	1	0	0	2	0	0	0	0	169
11:00	0	126	47	1	12	1	0	1	0	0	0	0	0	188
12:00 PM	1	184	52	1	15	2	0	1	0	0	0	0	0	256
13:00	2	145	53	1	19	1	0	0	0	0	0	0	0	221
14:00	2	111	36	0	17	2	0	6	3	0	0	0	0	177
15:00	3	150	65	1	19	3	0	1	1	0	0	0	0	243
16:00	1	147	42	1	13	0	0	2	0	0	0	0	0	206
17:00	1	138	34	0	11	0	0	0	0	0	0	0	0	184
18:00	1	64	16	0	3	0	0	0	0	0	0	0	0	84
19:00	0	28	13	0	0	0	0	0	0	0	0	0	0	41
20:00	0	31	10	0	2	0	0	0	0	0	0	0	0	43
21:00	0	13	4	0	3	0	0	0	0	0	0	0	0	20
22:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
23:00	0	7	3	0	0	0	0	0	0	0	0	0	0	10
Totals	**14**	**1747**	**584**	**9**	**191**	**20**		**13**	**10**		**2**			**2590**
% of Totals	1%	67%	23%	0%	7%	1%		1%	0%		0%			100%

AM Volumes	3	722	255	5	89	12	0	3	6	0	2	0	0	1097
% AM	0%	28%	10%	0%	3%	0%		0%	0%		0%			42%
AM Peak Hour	07:00	09:00	09:00	06:00	08:00	05:00		07:00	07:00		06:00			09:00
Volume	1	150	56	1	22	4		1	2		1			227
PM Volumes	11	1025	329	4	102	8	0	10	4	0	0	0	0	1493
% PM	0%	40%	13%	0%	4%	0%		0%	0%					58%
PM Peak Hour	15:00	12:00	15:00	12:00	13:00	15:00		14:00	14:00					12:00
Volume	3	184	65	1	19	3		6	3					256

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	368		14%	477		18%	390		15%	1355		52%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Thursday
Date: 9/5/2019

City: Grass Valley
Project #: CA19_7288_011

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,329	1,166	2,495

AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00	0	0	0	0		12:00	0	0	29	21	50
00:15	0	0	0	0		12:15	0	0	26	27	53
00:30	0	0	0	0		12:30	0	0	39	22	61
00:45	0	0	0	1	1 1	12:45	0	0	22	116 43	113 65 229
01:00	0	0	0	0		13:00	0	0	24	36	60
01:15	0	0	0	0		13:15	0	0	23	26	49
01:30	0	0	0	0		13:30	0	0	34	27	61
01:45	0	0	0	1	1 1	13:45	0	0	27	108 21	110 48 218
02:00	0	0	0	1	1	14:00	0	0	27	19	46
02:15	0	0	0	0		14:15	0	0	24	23	47
02:30	0	0	0	0		14:30	0	0	30	17	47
02:45	0	0	0	1	2 1 2	14:45	0	0	24	105 25	84 49 189
03:00	0	0	1	1	2	15:00	0	0	21	13	34
03:15	0	0	0	1	1	15:15	0	0	15	12	27
03:30	0	0	0	0		15:30	0	0	53	32	85
03:45	0	0	0	1	0 2 3	15:45	0	0	29	118 24	81 53 199
04:00	0	0	0	0		16:00	0	0	19	11	30
04:15	0	0	4	1	5	16:15	0	0	33	23	56
04:30	0	0	3	4	7	16:30	0	0	50	21	71
04:45	0	0	0	7	1 6 1 13	16:45	0	0	34	136 14	69 48 205
05:00	0	0	1	2	3	17:00	0	0	50	17	67
05:15	0	0	3	3	6	17:15	0	0	23	16	39
05:30	0	0	4	6	10	17:30	0	0	35	9	44
05:45	0	0	5	13	12 23 17 36	17:45	0	0	27	135 9	51 36 186
06:00	0	0	5	5	10	18:00	0	0	16	5	21
06:15	0	0	7	5	12	18:15	0	0	18	9	27
06:30	0	0	8	11	19	18:30	0	0	17	7	24
06:45	0	0	12	32	22 43 34 75	18:45	0	0	15	66 11	32 26 98
07:00	0	0	21	21	42	19:00	0	0	13	4	17
07:15	0	0	6	23	29	19:15	0	0	12	8	20
07:30	0	0	15	28	43	19:30	0	0	7	4	11
07:45	0	0	21	63	34 106 55 169	19:45	0	0	5	37 7	23 12 60
08:00	0	0	16	23	39	20:00	0	0	1	4	5
08:15	0	0	16	27	43	20:15	0	0	10	2	12
08:30	0	0	31	30	61	20:30	0	0	9	2	11
08:45	0	0	18	81	32 112 50 193	20:45	0	0	3	23 0	8 3 31
09:00	0	0	15	33	48	21:00	0	0	2	1	3
09:15	0	0	15	27	42	21:15	0	0	0	1	1
09:30	0	0	15	24	39	21:30	0	0	2	1	3
09:45	0	0	25	70	17 101 42 171	21:45	0	0	5	9 1	4 6 13
10:00	0	0	17	20	37	22:00	0	0	2	0	2
10:15	0	0	24	20	44	22:15	0	0	0	2	2
10:30	0	0	29	19	48	22:30	0	0	2	0	2
10:45	0	0	18	88	25 84 43 172	22:45	0	0	0	4 0	2 6
11:00	0	0	30	24	54	23:00	0	0	0	1	1
11:15	0	0	18	32	50	23:15	0	0	0	0	
11:30	0	0	36	17	53	23:30	0	0	0	1	1
11:45	0	0	33	117	32 105 65 222	23:45	0	0	0	1 3	1 3
TOTALS				472	586 1058	TOTALS				857	580 1437
SPLIT %				44.6%	55.4% 42.4%	SPLIT %				59.6%	40.4% 57.6%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,329	1,166	2,495

AM Peak Hour			11:45	08:15	11:45	PM Peak Hour			16:15	12:45	16:15
AM Pk Volume			127	122	229	PM Pk Volume			167	132	242
Pk Hr Factor			0.814	0.924	0.881	Pk Hr Factor			0.835	0.767	0.852
7 - 9 Volume	0	0	144	218	362	4 - 6 Volume	0	0	271	120	391
7 - 9 Peak Hour			07:45	07:45	07:45	4 - 6 Peak Hour			16:15	16:15	16:15
7 - 9 Pk Volume	0	0	84	114	198	4 - 6 Pk Volume	0	0	167	75	242
Pk Hr Factor	0.000	0.000	0.677	0.838	0.811	Pk Hr Factor	0.000	0.000	0.835	0.815	0.852

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Thursday
Date: 9/5/2019

City: Grass Valley
Project #: CA19_7288_011e

East Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	5	2	0	0	0	0	0	0	0	0	0	0	7
05:00	0	10	0	0	3	0	0	0	0	0	0	0	0	13
06:00	0	18	8	0	3	1	0	0	0	1	1	0	0	32
07:00	0	25	17	1	17	2	0	0	1	0	0	0	0	63
08:00	0	41	27	1	10	1	0	0	0	0	1	0	0	81
09:00	1	32	29	0	6	2	0	0	0	0	0	0	0	70
10:00	0	48	32	0	7	0	0	0	1	0	0	0	0	88
11:00	1	77	34	0	3	2	0	0	0	0	0	0	0	117
12:00 PM	0	85	23	1	6	1	0	0	0	0	0	0	0	116
13:00	1	71	28	1	6	1	0	0	0	0	0	0	0	108
14:00	4	65	25	1	7	2	0	0	1	0	0	0	0	105
15:00	1	76	27	1	8	3	0	2	0	0	0	0	0	118
16:00	2	103	25	1	5	0	0	0	0	0	0	0	0	136
17:00	1	107	24	0	3	0	0	0	0	0	0	0	0	135
18:00	0	47	16	0	3	0	0	0	0	0	0	0	0	66
19:00	1	24	10	0	2	0	0	0	0	0	0	0	0	37
20:00	1	17	3	0	2	0	0	0	0	0	0	0	0	23
21:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
22:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	**13**	**864**	**331**	**7**	**91**	**15**		**2**	**3**	**1**	**2**			**1329**
% of Totals	1%	65%	25%	1%	7%	1%		0%	0%	0%	0%			100%

AM Volumes	2	257	149	2	49	8	0	0	2	1	2	0	0	472
% AM	0%	19%	11%	0%	4%	1%			0%	0%	0%			36%
AM Peak Hour	09:00	11:00	11:00	07:00	07:00	07:00			07:00	06:00	06:00			11:00
Volume	1	77	34	1	17	2			1	1	1			117
PM Volumes	11	607	182	5	42	7	0	2	1	0	0	0	0	857
% PM	1%	46%	14%	0%	3%	1%		0%	0%					64%
PM Peak Hour	14:00	17:00	13:00	12:00	15:00	15:00		15:00	14:00					16:00
Volume	4	107	28	1	8	3		2	1					136

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	144		11%	224		17%	271		20%	690		52%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Thursday
Date: 9/5/2019

City: Grass Valley
Project #: CA19_7288_011w

West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	4	0	0	2	0	0	0	0	0	0	0	0	6
05:00	0	15	5	0	3	0	0	0	0	0	0	0	0	23
06:00	0	31	10	0	2	0	0	0	0	0	0	0	0	43
07:00	2	63	30	0	10	1	0	0	0	0	0	0	0	106
08:00	1	75	25	0	10	0	0	1	0	0	0	0	0	112
09:00	1	59	29	0	10	2	0	0	0	0	0	0	0	101
10:00	0	52	18	1	11	2	0	0	0	0	0	0	0	84
11:00	1	77	23	0	3	0	0	0	1	0	0	0	0	105
12:00 PM	2	79	19	1	10	2	0	0	0	0	0	0	0	113
13:00	1	70	30	1	7	1	0	0	0	0	0	0	0	110
14:00	1	50	17	0	11	4	0	0	1	0	0	0	0	84
15:00	1	53	16	2	7	0	0	2	0	0	0	0	0	81
16:00	1	54	12	0	1	0	0	1	0	0	0	0	0	69
17:00	0	35	10	0	6	0	0	0	0	0	0	0	0	51
18:00	0	21	6	0	5	0	0	0	0	0	0	0	0	32
19:00	0	19	2	1	1	0	0	0	0	0	0	0	0	23
20:00	0	4	3	0	1	0	0	0	0	0	0	0	0	8
21:00	0	3	0	0	1	0	0	0	0	0	0	0	0	4
22:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
23:00	0	1	1	0	1	0	0	0	0	0	0	0	0	3
Totals	**11**	**771**	**258**	**6**	**102**	**12**		**4**	**2**					**1166**
% of Totals	1%	66%	22%	1%	9%	1%		0%	0%					100%

AM Volumes	5	381	141	1	51	5	0	1	1	0	0	0	0	586
% AM	0%	33%	12%	0%	4%	0%		0%	0%					50%
AM Peak Hour	07:00	11:00	07:00	10:00	10:00	09:00		08:00	11:00					08:00
Volume	2	77	30	1	11	2		1	1					112
PM Volumes	6	390	117	5	51	7	0	3	1	0	0	0	0	580
% PM	1%	33%	10%	0%	4%	1%		0%	0%					50%
PM Peak Hour	12:00	12:00	13:00	15:00	14:00	14:00		15:00	14:00					12:00
Volume	2	79	30	2	11	4		2	1					113

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	218		19%	223		19%	120		10%	605		52%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Thursday
Date: 9/5/2019

City: Grass Valley
Project #: CA19_7288_011

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	9	2	0	2	0	0	0	0	0	0	0	0	13
05:00	0	25	5	0	6	0	0	0	0	0	0	0	0	36
06:00	0	49	18	0	5	1	0	0	0	1	1	0	0	75
07:00	2	88	47	1	27	3	0	0	1	0	0	0	0	169
08:00	1	116	52	1	20	1	0	1	0	0	1	0	0	193
09:00	2	91	58	0	16	4	0	0	0	0	0	0	0	171
10:00	0	100	50	1	18	2	0	0	1	0	0	0	0	172
11:00	2	154	57	0	6	2	0	0	1	0	0	0	0	222
12:00 PM	2	164	42	2	16	3	0	0	0	0	0	0	0	229
13:00	2	141	58	2	13	2	0	0	0	0	0	0	0	218
14:00	5	115	42	1	18	6	0	0	2	0	0	0	0	189
15:00	2	129	43	3	15	3	0	4	0	0	0	0	0	199
16:00	3	157	37	1	6	0	0	1	0	0	0	0	0	205
17:00	1	142	34	0	9	0	0	0	0	0	0	0	0	186
18:00	0	68	22	0	8	0	0	0	0	0	0	0	0	98
19:00	1	43	12	1	3	0	0	0	0	0	0	0	0	60
20:00	1	21	6	0	3	0	0	0	0	0	0	0	0	31
21:00	0	11	1	0	1	0	0	0	0	0	0	0	0	13
22:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
23:00	0	1	1	0	1	0	0	0	0	0	0	0	0	3
Totals	**24**	**1635**	**589**	**13**	**193**	**27**		**6**	**5**	**1**	**2**			**2495**
% of Totals	1%	66%	24%	1%	8%	1%		0%	0%	0%	0%			100%

AM Volumes	7	638	290	3	100	13	0	1	3	1	2	0	0	1058
% AM	0%	26%	12%	0%	4%	1%		0%	0%	0%	0%			42%
AM Peak Hour	07:00	11:00	09:00	07:00	07:00	09:00		08:00	07:00	06:00	06:00			11:00
Volume	2	154	58	1	27	4		1	1	1	1			222
PM Volumes	17	997	299	10	93	14	0	5	2	0	0	0	0	1437
% PM	1%	40%	12%	0%	4%	1%		0%	0%					58%
PM Peak Hour	14:00	12:00	13:00	15:00	14:00	14:00		15:00	14:00					12:00
Volume	5	164	58	3	18	6		4	2					229

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	362		15%	447		18%	391		16%	1295		52%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by NDS/ATD

DAILY TOTALS	NB	SB	EB	WB	To
	0	0	1,270	1,111	2,3

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOT
00:00	0	0	1		0		1		**12:00**	0	0	47		23		70
00:15	0	0	0		0				**12:15**	0	0	28		28		56
00:30	0	0	0		1		1		**12:30**	0	0	30		21		51
00:45	0	0	0	1	0	1		2	**12:45**	0	0	36	141	41	113	77
01:00	0	0	0		0				**13:00**	0	0	32		27		59
01:15	0	0	0		0				**13:15**	0	0	30		37		67
01:30	0	0	0		0				**13:30**	0	0	19		26		45
01:45	0	0	0		0				**13:45**	0	0	13	94	31	121	44
02:00	0	0	0		1		1		**14:00**	0	0	22		24		46
02:15	0	0	1		0		1		**14:15**	0	0	24		13		37
02:30	0	0	1		0		1		**14:30**	0	0	24		22		46
02:45	0	0	0	2	0	1		3	**14:45**	0	0	24	94	15	74	39
03:00	0	0	0		0				**15:00**	0	0	26		18		44
03:15	0	0	0		2		2		**15:15**	0	0	18		25		43
03:30	0	0	0		0				**15:30**	0	0	38		21		59
03:45	0	0	1	1	0	2	1	3	**15:45**	0	0	26	108	21	85	47
04:00	0	0	2		2		4		**16:00**	0	0	27		12		39
04:15	0	0	3		3		6		**16:15**	0	0	22		12		34
04:30	0	0	2		0		2		**16:30**	0	0	37		8		45
04:45	0	0	2	9	4	9	6	18	**16:45**	0	0	23	109	16	48	39
05:00	0	0	0		7		7		**17:00**	0	0	57		12		69
05:15	0	0	3		3		6		**17:15**	0	0	32		6		38
05:30	0	0	1		2		3		**17:30**	0	0	19		11		30
05:45	0	0	8	12	10	22	18	34	**17:45**	0	0	16	124	12	41	28
06:00	0	0	5		8		13		**18:00**	0	0	18		8		26
06:15	0	0	5		9		14		**18:15**	0	0	12		5		17
06:30	0	0	9		12		21		**18:30**	0	0	9		6		15
06:45	0	0	11	30	26	55	37	85	**18:45**	0	0	12	51	2	21	14
07:00	0	0	16		21		37		**19:00**	0	0	6		3		9
07:15	0	0	11		19		30		**19:15**	0	0	13		3		16
07:30	0	0	13		27		40		**19:30**	0	0	6		4		10
07:45	0	0	18	58	37	104	55	162	**19:45**	0	0	3	28	0	10	3
08:00	0	0	10		23		33		**20:00**	0	0	3		1		4
08:15	0	0	25		24		49		**20:15**	0	0	8		4		12
08:30	0	0	22		31		53		**20:30**	0	0	2		3		5
08:45	0	0	17	74	31	109	48	183	**20:45**	0	0	1	14	1	9	2
09:00	0	0	11		27		38		**21:00**	0	0	3		1		4
09:15	0	0	22		24		46		**21:15**	0	0	2		0		2
09:30	0	0	24		17		41		**21:30**	0	0	1		1		2
09:45	0	0	17	74	26	94	43	168	**21:45**	0	0	3	9	0	2	3
10:00	0	0	24		23		47		**22:00**	0	0	2		0		2
10:15	0	0	34		17		51		**22:15**	0	0	2		1		3
10:30	0	0	20		21		41		**22:30**	0	0	1		1		2
10:45	0	0	20	98	29	90	49	188	**22:45**	0	0	0	5	0	2	
11:00	0	0	21		27		48		**23:00**	0	0	0		0		
11:15	0	0	27		28		55		**23:15**	0	0	4		1		5
11:30	0	0	37		16		53		**23:30**	0	0	2		0		2
11:45	0	0	43	128	26	97	69	225	**23:45**	0	0	0	6	0	1	
TOTALS				487		584		**1071**	**TOTALS**				783		527	
SPLIT %				45.5%		54.5%		**45.0%**	**SPLIT %**				59.8%		40.2%	

DAILY TOTALS	NB	SB	EB	WB	To
	0	0	1,270	1,111	2,3

AM Peak Hour			11:30	07:45	**11:30**	**PM Peak Hour**			16:30	12:45	
AM Pk Volume			155	115	**248**	**PM Pk Volume**			149	131	
Pk Hr Factor			0.824	0.777	**0.886**	**Pk Hr Factor**			0.654	0.799	
7 - 9 Volume	0	0	132	213	**345**	**4 - 6 Volume**	0	0	233	89	
7 - 9 Peak Hour			07:45	07:45	**07:45**	**4 - 6 Peak Hour**			16:30	16:00	
7 - 9 Pk Volume	0	0	75	115	**190**	**4 - 6 Pk Volume**	0	0	149	48	
Pk Hr Factor	0.000	0.000	0.750	0.777	**0.864**	**Pk Hr Factor**	0.000	0.000	0.654	0.750	

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Friday
Date: 9/6/2019

City: Grass Valley
Project #: CA19_7288_011e

East Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	7	1	0	1	0	0	0	0	0	0	0	0	9
05:00	0	9	1	0	0	2	0	0	0	0	0	0	0	12
06:00	1	17	9	0	1	2	0	0	0	0	0	0	0	30
07:00	0	28	20	1	8	0	0	0	1	0	0	0	0	58
08:00	0	47	13	0	12	2	0	0	0	0	0	0	0	74
09:00	0	46	26	0	1	1	0	0	0	0	0	0	0	74
10:00	1	60	23	1	8	2	0	1	2	0	0	0	0	98
11:00	1	83	39	0	3	2	0	0	0	0	0	0	0	128
12:00 PM	1	107	22	1	5	0	0	2	3	0	0	0	0	141
13:00	1	58	27	0	5	2	0	0	1	0	0	0	0	94
14:00	1	58	26	1	7	1	0	0	0	0	0	0	0	94
15:00	1	78	19	1	8	0	0	1	0	0	0	0	0	108
16:00	2	82	22	1	2	0	0	0	0	0	0	0	0	109
17:00	0	92	27	0	5	0	0	0	0	0	0	0	0	124
18:00	0	36	13	0	2	0	0	0	0	0	0	0	0	51
19:00	0	25	3	0	0	0	0	0	0	0	0	0	0	28
20:00	0	10	2	0	2	0	0	0	0	0	0	0	0	14
21:00	0	7	2	0	0	0	0	0	0	0	0	0	0	9
22:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
23:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
Totals	**9**	**862**	**298**	**6**	**70**	**14**		**4**	**7**					**1270**
% of Totals	1%	68%	23%	0%	6%	1%		0%	1%					100%

AM Volumes	3	301	132	2	34	11	0	1	3	0	0	0	0	487
% AM	0%	24%	10%	0%	3%	1%		0%	0%					38%
AM Peak Hour	06:00	11:00	11:00	07:00	08:00	05:00		10:00	10:00					11:00
Volume	1	83	39	1	12	2		1	2					128
PM Volumes	6	561	166	4	36	3	0	3	4	0	0	0	0	783
% PM	0%	44%	13%	0%	3%	0%		0%	0%					62%
PM Peak Hour	16:00	12:00	13:00	12:00	15:00	13:00		12:00	12:00					12:00
Volume	2	107	27	1	8	2		2	3					141

Directional Peak Periods All Classes	AM 7-9 Volume	AM 7-9 %	NOON 12-2 Volume	NOON 12-2 %	PM 4-6 Volume	PM 4-6 %	Off Peak Volumes Volume	Off Peak Volumes %
	132	10%	235	19%	233	18%	670	53%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Friday
Date: 9/6/2019

City: Grass Valley
Project #: CA19_7288_011w

West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	6	2	0	1	0	0	0	0	0	0	0	0	9
05:00	0	18	2	0	0	2	0	0	0	0	0	0	0	22
06:00	0	37	14	0	3	0	0	0	1	0	0	0	0	55
07:00	2	74	19	0	8	1	0	0	0	0	0	0	0	104
08:00	0	77	19	1	11	1	0	0	0	0	0	0	0	109
09:00	0	62	24	0	8	0	0	0	0	0	0	0	0	94
10:00	0	62	16	0	10	1	0	0	0	0	1	0	0	90
11:00	1	65	22	0	6	2	0	0	1	0	0	0	0	97
12:00 PM	1	80	19	1	10	0	0	2	0	0	0	0	0	113
13:00	1	79	27	0	13	0	0	0	1	0	0	0	0	121
14:00	1	54	11	1	7	0	0	0	0	0	0	0	0	74
15:00	0	51	24	2	7	0	0	0	0	0	1	0	0	85
16:00	0	29	12	2	4	0	0	0	1	0	0	0	0	48
17:00	0	29	4	1	7	0	0	0	0	0	0	0	0	41
18:00	0	14	5	0	2	0	0	0	0	0	0	0	0	21
19:00	0	8	2	0	0	0	0	0	0	0	0	0	0	10
20:00	0	6	3	0	0	0	0	0	0	0	0	0	0	9
21:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
22:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Totals	**6**	**757**	**228**	**8**	**97**	**7**		**2**	**4**		**2**			**1111**
% of Totals	1%	68%	21%	1%	9%	1%		0%	0%		0%			100%

AM Volumes	3	404	119	1	47	7	0	0	2	0	1	0	0	584
% AM	0%	36%	11%	0%	4%	1%			0%		0%			53%
AM Peak Hour	07:00	08:00	09:00	08:00	08:00	05:00			06:00		10:00			08:00
Volume	2	77	24	1	11	2			1		1			109
PM Volumes	3	353	109	7	50	0	0	2	2	0	1	0	0	527
% PM	0%	32%	10%	1%	5%			0%	0%		0%			47%
PM Peak Hour	12:00	12:00	13:00	15:00	13:00			12:00	13:00		15:00			13:00
Volume	1	80	27	2	13			2	1		1			121

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	213	19%	234	21%	89	8%	575	52%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Friday
Date: 9/6/2019

City: Grass Valley
Project #: CA19_7288_011

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	2
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	13	3	0	2	0	0	0	0	0	0	0	0	18
05:00	0	27	3	0	0	4	0	0	0	0	0	0	0	34
06:00	1	54	23	0	4	2	0	0	1	0	0	0	0	85
07:00	2	102	39	1	16	1	0	0	1	0	0	0	0	162
08:00	0	124	32	1	23	3	0	0	0	0	0	0	0	183
09:00	0	108	50	0	9	1	0	0	0	0	0	0	0	168
10:00	1	122	39	1	18	3	0	1	2	0	1	0	0	188
11:00	2	148	61	0	9	4	0	0	1	0	0	0	0	225
12:00 PM	2	187	41	2	15	0	0	4	3	0	0	0	0	254
13:00	2	137	54	0	18	2	0	0	2	0	0	0	0	215
14:00	2	112	37	2	14	1	0	0	0	0	0	0	0	168
15:00	1	129	43	3	15	0	0	1	0	0	1	0	0	193
16:00	2	111	34	3	6	0	0	0	1	0	0	0	0	157
17:00	0	121	31	1	12	0	0	0	0	0	0	0	0	165
18:00	0	50	18	0	4	0	0	0	0	0	0	0	0	72
19:00	0	33	5	0	0	0	0	0	0	0	0	0	0	38
20:00	0	16	5	0	2	0	0	0	0	0	0	0	0	23
21:00	0	8	3	0	0	0	0	0	0	0	0	0	0	11
22:00	0	5	2	0	0	0	0	0	0	0	0	0	0	7
23:00	0	5	2	0	0	0	0	0	0	0	0	0	0	7
Totals	**15**	**1619**	**526**	**14**	**167**	**21**		**6**	**11**		**2**			**2381**
% of Totals	1%	68%	22%	1%	7%	1%		0%	0%		0%			100%

AM Volumes	6	705	251	3	81	18	0	1	5	0	1	0	0	1071
% AM	0%	30%	11%	0%	3%	1%		0%	0%		0%			45%
AM Peak Hour	07:00	11:00	11:00	07:00	08:00	05:00		10:00	10:00		10:00			11:00
Volume	2	148	61	1	23	4		1	2		1			225
PM Volumes	9	914	275	11	86	3	0	5	6	0	1	0	0	1310
% PM	0%	38%	12%	0%	4%	0%		0%	0%		0%			55%
PM Peak Hour	12:00	12:00	13:00	15:00	13:00	13:00		12:00	12:00		15:00			12:00
Volume	2	187	54	3	18	2		4	3		1			254

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	345		14%	469		20%	322		14%	1245		52%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Saturday
Date: 9/7/2019

City: Grass Valley
Project #: CA19_7288_011

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	480	390	870

AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00	0	0	0	0		12:00	0	0	9	9	18
00:15	0	0	0	0		12:15	0	0	8	11	19
00:30	0	0	0	0		12:30	0	0	15	15	30
00:45	0	0	0	1	1 1	12:45	0	0	13	6	19
01:00	0	0	0	0		13:00	0	0	4	8	12
01:15	0	0	2	1	3	13:15	0	0	8	8	16
01:30	0	0	1	0	1	13:30	0	0	11	13	24
01:45	0	0	0	0	1 4	13:45	0	0	19	8	27
02:00	0	0	0	0		14:00	0	0	17	7	24
02:15	0	0	0	0		14:15	0	0	15	9	24
02:30	0	0	0	0		14:30	0	0	11	8	19
02:45	0	0	0	1	1 1	14:45	0	0	9	4	13
03:00	0	0	0	0		15:00	0	0	13	11	24
03:15	0	0	0	0		15:15	0	0	12	5	17
03:30	0	0	0	0		15:30	0	0	5	7	12
03:45	0	0	0	0		15:45	0	0	9	7	16
04:00	0	0	0	0		16:00	0	0	8	7	15
04:15	0	0	1	2	3	16:15	0	0	10	10	20
04:30	0	0	0	1	1	16:30	0	0	5	5	10
04:45	0	0	1	1	2 6	16:45	0	0	6	3	9
05:00	0	0	0	4	4	17:00	0	0	9	4	13
05:15	0	0	0	3	3	17:15	0	0	6	3	9
05:30	0	0	3	0	3	17:30	0	0	11	8	19
05:45	0	0	5	2	7 17	17:45	0	0	6	2	8
06:00	0	0	1	2	3	18:00	0	0	6	1	7
06:15	0	0	2	1	3	18:15	0	0	4	3	7
06:30	0	0	2	1	3	18:30	0	0	6	0	6
06:45	0	0	3	4	7 16	18:45	0	0	5	1	6
07:00	0	0	1	7	8	19:00	0	0	5	1	6
07:15	0	0	3	3	6	19:15	0	0	1	1	2
07:30	0	0	2	4	6	19:30	0	0	5	3	8
07:45	0	0	5	5	10 30	19:45	0	0	2	1	3
08:00	0	0	6	7	13	20:00	0	0	0	1	1
08:15	0	0	4	8	12	20:15	0	0	4	1	5
08:30	0	0	8	3	11	20:30	0	0	3	3	6
08:45	0	0	10	13	23 59	20:45	0	0	2	2	4
09:00	0	0	8	7	15	21:00	0	0	1	1	2
09:15	0	0	7	8	15	21:15	0	0	3	1	4
09:30	0	0	7	11	18	21:30	0	0	1	0	1
09:45	0	0	7	15	22 70	21:45	0	0	0	1	1
10:00	0	0	18	14	32	22:00	0	0	3	0	3
10:15	0	0	13	7	20	22:15	0	0	2	1	3
10:30	0	0	4	5	9	22:30	0	0	1	3	4
10:45	0	0	9	14	23 84	22:45	0	0	0	0	
11:00	0	0	11	6	17	23:00	0	0	2	0	2
11:15	0	0	12	7	19	23:15	0	0	0	1	1
11:30	0	0	15	7	22	23:30	0	0	1	2	3
11:45	0	0	12	9	21 79	23:45	0	0	1	0	1
TOTALS			183	184	367	TOTALS			297	206	503
SPLIT %			49.9%	50.1%	42.2%	SPLIT %			59.0%	41.0%	57.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	480	390	870

AM Peak Hour			11:00	09:15	09:30	PM Peak Hour			13:30	12:00	13:30
AM Pk Volume			50	48	92	PM Pk Volume			62	41	99
Pk Hr Factor			0.833	0.800	0.719	Pk Hr Factor			0.816	0.683	0.917
7 - 9 Volume	0	0	39	50	89	4 - 6 Volume	0	0	61	42	103
7 - 9 Peak Hour			08:00	08:00	08:00	4 - 6 Peak Hour			16:45	16:00	16:00
7 - 9 Pk Volume	0	0	28	31	59	4 - 6 Pk Volume	0	0	32	25	54
Pk Hr Factor	0.000	0.000	0.700	0.596	0.641	Pk Hr Factor	0.000	0.000	0.727	0.625	0.675

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Saturday
Date: 9/7/2019

City: Grass Valley
Project #: CA19_7288_011e

East Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	1	2	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	1	0	0	1	0	0	0	0	0	0	0	0	2
05:00	0	2	3	0	3	0	0	0	0	0	0	0	0	8
06:00	0	6	1	0	0	1	0	0	0	0	0	0	0	8
07:00	0	4	7	0	0	0	0	0	0	0	0	0	0	11
08:00	0	15	9	0	4	0	0	0	0	0	0	0	0	28
09:00	0	20	6	1	2	0	0	0	0	0	0	0	0	29
10:00	0	31	9	0	4	0	0	0	0	0	0	0	0	44
11:00	0	37	9	0	4	0	0	0	0	0	0	0	0	50
12:00 PM	0	34	8	0	3	0	0	0	0	0	0	0	0	45
13:00	2	30	10	0	0	0	0	0	0	0	0	0	0	42
14:00	1	37	11	0	3	0	0	0	0	0	0	0	0	52
15:00	0	26	11	0	2	0	0	0	0	0	0	0	0	39
16:00	0	24	4	0	0	1	0	0	0	0	0	0	0	29
17:00	2	19	10	0	1	0	0	0	0	0	0	0	0	32
18:00	0	18	2	0	1	0	0	0	0	0	0	0	0	21
19:00	0	13	0	0	0	0	0	0	0	0	0	0	0	13
20:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
21:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
22:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
23:00	0	2	2	0	0	0	0	0	0	0	0	0	0	4
Totals	**6**	**339**	**104**	**1**	**28**	**2**								**480**
% of Totals	1%	71%	22%	0%	6%	0%								100%

AM Volumes	1	118	44	1	18	1	0	0	0	0	0	0	0	183
% AM	0%	25%	9%	0%	4%	0%								38%
AM Peak Hour	01:00	11:00	08:00	09:00	08:00	06:00								11:00
Volume	1	37	9	1	4	1								50
PM Volumes	5	221	60	0	10	1	0	0	0	0	0	0	0	297
% PM	1%	46%	13%		2%	0%								62%
PM Peak Hour	13:00	14:00	14:00		12:00	16:00								14:00
Volume	2	37	11		3	1								52

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	39		8%	87		18%	61		13%	293		61%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Saturday
Date: 9/7/2019

City: Grass Valley
Project #: CA19_7288_011w

West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	1	0	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
05:00	0	5	3	0	1	0	0	0	0	0	0	0	0	9
06:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
07:00	0	13	4	1	1	0	0	0	0	0	0	0	0	19
08:00	0	20	5	0	6	0	0	0	0	0	0	0	0	31
09:00	0	30	8	0	2	1	0	0	0	0	0	0	0	41
10:00	0	24	9	0	5	1	0	1	0	0	0	0	0	40
11:00	0	20	5	1	3	0	0	0	0	0	0	0	0	29
12:00 PM	0	27	11	0	3	0	0	0	0	0	0	0	0	41
13:00	1	25	5	0	6	0	0	0	0	0	0	0	0	37
14:00	0	15	11	0	2	0	0	0	0	0	0	0	0	28
15:00	0	25	4	0	1	0	0	0	0	0	0	0	0	30
16:00	0	13	7	0	4	1	0	0	0	0	0	0	0	25
17:00	1	14	2	0	0	0	0	0	0	0	0	0	0	17
18:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
19:00	0	4	1	0	1	0	0	0	0	0	0	0	0	6
20:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
21:00	0	1	2	0	0	0	0	0	0	0	0	0	0	3
22:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
23:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
Totals	**3**	**265**	**81**	**2**	**35**	**3**		**1**						**390**
% of Totals	1%	68%	21%	1%	9%	1%		0%						100%

AM Volumes	1	125	35	2	18	2	0	1	0	0	0	0	0	184
% AM	0%	32%	9%	1%	5%	1%		0%						47%
AM Peak Hour	01:00	09:00	10:00	07:00	08:00	09:00		10:00						09:00
Volume	1	30	9	1	6	1		1						41
PM Volumes	2	140	46	0	17	1	0	0	0	0	0	0	0	206
% PM	1%	36%	12%		4%	0%								53%
PM Peak Hour	13:00	12:00	12:00		13:00	16:00								12:00
Volume	1	27	11		6	1								41

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	50		13%	78		20%	42		11%	220		56%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Saturday
Date: 9/7/2019

City: Grass Valley
Project #: CA19_7288_011

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	2	2	0	0	0	0	0	0	0	0	0	0	0	4
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	4	1	0	1	0	0	0	0	0	0	0	0	6
05:00	0	7	6	0	4	0	0	0	0	0	0	0	0	17
06:00	0	14	1	0	0	1	0	0	0	0	0	0	0	16
07:00	0	17	11	1	1	0	0	0	0	0	0	0	0	30
08:00	0	35	14	0	10	0	0	0	0	0	0	0	0	59
09:00	0	50	14	1	4	1	0	0	0	0	0	0	0	70
10:00	0	55	18	0	9	1	0	1	0	0	0	0	0	84
11:00	0	57	14	1	7	0	0	0	0	0	0	0	0	79
12:00 PM	0	61	19	0	6	0	0	0	0	0	0	0	0	86
13:00	3	55	15	0	6	0	0	0	0	0	0	0	0	79
14:00	1	52	22	0	5	0	0	0	0	0	0	0	0	80
15:00	0	51	15	0	3	0	0	0	0	0	0	0	0	69
16:00	0	37	11	0	4	2	0	0	0	0	0	0	0	54
17:00	3	33	12	0	1	0	0	0	0	0	0	0	0	49
18:00	0	22	3	0	1	0	0	0	0	0	0	0	0	26
19:00	0	17	1	0	1	0	0	0	0	0	0	0	0	19
20:00	0	15	1	0	0	0	0	0	0	0	0	0	0	16
21:00	0	6	2	0	0	0	0	0	0	0	0	0	0	8
22:00	0	7	3	0	0	0	0	0	0	0	0	0	0	10
23:00	0	5	2	0	0	0	0	0	0	0	0	0	0	7
Totals	**9**	**604**	**185**	**3**	**63**	**5**		**1**						**870**
% of Totals	1%	69%	21%	0%	7%	1%		0%						100%

AM Volumes	2	243	79	3	36	3	0	1	0	0	0	0	0	367
% AM	0%	28%	9%	0%	4%	0%		0%						42%
AM Peak Hour	01:00	11:00	10:00	07:00	08:00	06:00		10:00						10:00
Volume	2	57	18	1	10	1		1						84
PM Volumes	7	361	106	0	27	2	0	0	0	0	0	0	0	503
% PM	1%	41%	12%		3%	0%								58%
PM Peak Hour	13:00	12:00	14:00		12:00	16:00								12:00
Volume	3	61	22		6	2								86

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	↔	%	Volume	↔	%	Volume	↔	%	Volume	↔	%
	89		10%	165		19%	103		12%	513		59%

Classification Definitions

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8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Sunday
Date: 9/8/2019

City: Grass Valley
Project #: CA19_7288_011

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	326	269	595

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00	0	0	0		0				**12:00**	0	0	18		5		23	
00:15	0	0	1		0		1		**12:15**	0	0	13		8		21	
00:30	0	0	0		0				**12:30**	0	0	10		5		15	
00:45	0	0	0	1	0			1	**12:45**	0	0	12	53	3	21	15	74
01:00	0	0	0		0				**13:00**	0	0	12		7		19	
01:15	0	0	0		0				**13:15**	0	0	5		7		12	
01:30	0	0	0		0				**13:30**	0	0	11		5		16	
01:45	0	0	1	1	0		1	1	**13:45**	0	0	4	32	6	25	10	57
02:00	0	0	0		0				**14:00**	0	0	5		7		12	
02:15	0	0	1		0		1		**14:15**	0	0	5		3		8	
02:30	0	0	0		0				**14:30**	0	0	3		5		8	
02:45	0	0	1	2	0		1	2	**14:45**	0	0	7	20	5	20	12	40
03:00	0	0	0		0				**15:00**	0	0	6		5		11	
03:15	0	0	0		0				**15:15**	0	0	6		5		11	
03:30	0	0	1		1		2		**15:30**	0	0	6		4		10	
03:45	0	0	0	1	0	1		2	**15:45**	0	0	2	20	6	20	8	40
04:00	0	0	0		0				**16:00**	0	0	10		5		15	
04:15	0	0	0		0				**16:15**	0	0	8		4		12	
04:30	0	0	0		0				**16:30**	0	0	6		5		11	
04:45	0	0	0		0				**16:45**	0	0	6	30	4	18	10	48
05:00	0	0	0		0				**17:00**	0	0	9		6		15	
05:15	0	0	0		0				**17:15**	0	0	8		9		17	
05:30	0	0	0		1		1		**17:30**	0	0	5		3		8	
05:45	0	0	0		1	2	1	2	**17:45**	0	0	3	25	1	19	4	44
06:00	0	0	1		1		2		**18:00**	0	0	6		3		9	
06:15	0	0	1		0		1		**18:15**	0	0	7		2		9	
06:30	0	0	0		0				**18:30**	0	0	5		3		8	
06:45	0	0	0	2	0	1		3	**18:45**	0	0	4	22	2	10	6	32
07:00	0	0	1		6		7		**19:00**	0	0	5		2		7	
07:15	0	0	1		2		3		**19:15**	0	0	4		2		6	
07:30	0	0	0		1		1		**19:30**	0	0	4		0		4	
07:45	0	0	1	3	2	11	3	14	**19:45**	0	0	4	17	0	4	4	21
08:00	0	0	1		0		1		**20:00**	0	0	3		3		6	
08:15	0	0	2		1		3		**20:15**	0	0	5		2		7	
08:30	0	0	1		3		4		**20:30**	0	0	0		1		1	
08:45	0	0	3	7	3	7	6	14	**20:45**	0	0	0	8	2	8	2	16
09:00	0	0	4		5		9		**21:00**	0	0	3		1		4	
09:15	0	0	3		8		11		**21:15**	0	0	2		1		3	
09:30	0	0	3		9		12		**21:30**	0	0	0		0			
09:45	0	0	5	15	13	35	18	50	**21:45**	0	0	1	6	0	2	1	8
10:00	0	0	6		13		19		**22:00**	0	0	1		1		2	
10:15	0	0	1		19		20		**22:15**	0	0	0		1		1	
10:30	0	0	3		10		13		**22:30**	0	0	0		1		1	
10:45	0	0	6	16	5	47	11	63	**22:45**	0	0	0	1	0	3		4
11:00	0	0	8		2		10		**23:00**	0	0	0		0			
11:15	0	0	5		3		8		**23:15**	0	0	0		0			
11:30	0	0	12		5		17		**23:30**	0	0	0		1		1	
11:45	0	0	18	43	4	14	22	57	**23:45**	0	0	1	1	0	1	1	2
TOTALS				91		118		**209**	**TOTALS**				235		151		**386**
SPLIT %				43.5%		56.5%		**35.1%**	**SPLIT %**				60.9%		39.1%		**64.9%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	326	269	595

AM Peak Hour				11:30		09:45		**11:30**	**PM Peak Hour**				12:00		13:00		**12:00**
AM Pk Volume				61		55		**83**	**PM Pk Volume**				53		25		**74**
Pk Hr Factor				0.847		0.724		**0.902**	**Pk Hr Factor**				0.736		0.893		**0.804**
7 - 9 Volume	0	0		10		18		**28**	**4 - 6 Volume**	0	0		55		37		**92**
7 - 9 Peak Hour				08:00		07:00		**07:00**	**4 - 6 Peak Hour**				16:00		16:30		**16:30**
7 - 9 Pk Volume	0	0		7		11		**14**	**4 - 6 Pk Volume**	0	0		30		24		**53**
Pk Hr Factor	0.000	0.000		0.583		0.458		**0.500**	**Pk Hr Factor**	0.000	0.000		0.750		0.667		**0.779**

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Sunday
Date: 9/8/2019

City: Grass Valley
Project #: CA19_7288_011e

East Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
07:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
08:00	0	4	3	0	0	0	0	0	0	0	0	0	0	7
09:00	0	10	3	0	2	0	0	0	0	0	0	0	0	15
10:00	0	12	1	2	1	0	0	0	0	0	0	0	0	16
11:00	2	30	11	0	0	0	0	0	0	0	0	0	0	43
12:00 PM	0	43	10	0	0	0	0	0	0	0	0	0	0	53
13:00	1	26	4	0	1	0	0	0	0	0	0	0	0	32
14:00	0	15	4	0	1	0	0	0	0	0	0	0	0	20
15:00	0	13	7	0	0	0	0	0	0	0	0	0	0	20
16:00	0	20	8	2	0	0	0	0	0	0	0	0	0	30
17:00	0	19	6	0	0	0	0	0	0	0	0	0	0	25
18:00	0	14	8	0	0	0	0	0	0	0	0	0	0	22
19:00	0	15	1	0	1	0	0	0	0	0	0	0	0	17
20:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
21:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
22:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Totals	**3**	**246**	**67**	**4**	**6**									**326**
% of Totals	1%	75%	21%	1%	2%									100%

AM Volumes	2	66	18	2	3	0	0	0	0	0	0	0	0	91
% AM	1%	20%	6%	1%	1%									28%
AM Peak Hour	11:00	11:00	11:00	10:00	09:00									11:00
Volume	2	30	11	2	2									43
PM Volumes	1	180	49	2	3	0	0	0	0	0	0	0	0	235
% PM	0%	55%	15%	1%	1%									72%
PM Peak Hour	13:00	12:00	12:00	16:00	13:00									12:00
Volume	1	43	10	2	1									53

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	10		3%	85		26%	55		17%	176		54%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
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13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Sunday
Date: 9/8/2019

City: Grass Valley
Project #: CA19_7288_011w

West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
06:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
07:00	0	9	2	0	0	0	0	0	0	0	0	0	0	11
08:00	1	5	0	0	1	0	0	0	0	0	0	0	0	7
09:00	0	25	6	0	4	0	0	0	0	0	0	0	0	35
10:00	0	39	7	0	1	0	0	0	0	0	0	0	0	47
11:00	0	10	4	0	0	0	0	0	0	0	0	0	0	14
12:00 PM	2	11	7	1	0	0	0	0	0	0	0	0	0	21
13:00	1	15	7	0	2	0	0	0	0	0	0	0	0	25
14:00	0	16	4	0	0	0	0	0	0	0	0	0	0	20
15:00	1	11	6	0	2	0	0	0	0	0	0	0	0	20
16:00	0	13	4	0	1	0	0	0	0	0	0	0	0	18
17:00	0	16	3	0	0	0	0	0	0	0	0	0	0	19
18:00	0	7	1	0	2	0	0	0	0	0	0	0	0	10
19:00	0	2	1	1	0	0	0	0	0	0	0	0	0	4
20:00	0	4	3	0	1	0	0	0	0	0	0	0	0	8
21:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
22:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Totals	**5**	**191**	**57**	**2**	**14**									**269**
% of Totals	2%	71%	21%	1%	5%									100%

AM Volumes	1	91	20	0	6	0	0	0	0	0	0	0	0	118
% AM	0%	34%	7%		2%									44%
AM Peak Hour	08:00	10:00	10:00		09:00									10:00
Volume	1	39	7		4									47
PM Volumes	4	100	37	2	8	0	0	0	0	0	0	0	0	151
% PM	1%	37%	14%	1%	3%									56%
PM Peak Hour	12:00	14:00	12:00	12:00	13:00									13:00
Volume	2	16	7	1	2									25

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	18		7%	46		17%	37		14%	168		62%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Sunday
Date: 9/8/2019

City: Grass Valley
Project #: CA19_7288_011

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
06:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
07:00	0	12	2	0	0	0	0	0	0	0	0	0	0	14
08:00	1	9	3	0	1	0	0	0	0	0	0	0	0	14
09:00	0	35	9	0	6	0	0	0	0	0	0	0	0	50
10:00	0	51	8	2	2	0	0	0	0	0	0	0	0	63
11:00	2	40	15	0	0	0	0	0	0	0	0	0	0	57
12:00 PM	2	54	17	1	0	0	0	0	0	0	0	0	0	74
13:00	2	41	11	0	3	0	0	0	0	0	0	0	0	57
14:00	0	31	8	0	1	0	0	0	0	0	0	0	0	40
15:00	1	24	13	0	2	0	0	0	0	0	0	0	0	40
16:00	0	33	12	2	1	0	0	0	0	0	0	0	0	48
17:00	0	35	9	0	0	0	0	0	0	0	0	0	0	44
18:00	0	21	9	0	2	0	0	0	0	0	0	0	0	32
19:00	0	17	2	1	1	0	0	0	0	0	0	0	0	21
20:00	0	11	4	0	1	0	0	0	0	0	0	0	0	16
21:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
22:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
23:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Totals	**8**	**437**	**124**	**6**	**20**									**595**
% of Totals	1%	73%	21%	1%	3%									100%

AM Volumes	3	157	38	2	9	0	0	0	0	0	0	0	0	209
% AM	1%	26%	6%	0%	2%									35%
AM Peak Hour	11:00	10:00	11:00	10:00	09:00									10:00
Volume	2	51	15	2	6									63
PM Volumes	5	280	86	4	11	0	0	0	0	0	0	0	0	386
% PM	1%	47%	14%	1%	2%									65%
PM Peak Hour	12:00	12:00	12:00	16:00	13:00									12:00
Volume	2	54	17	2	3									74

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	28		5%	131		22%	92		15%	344		58%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Monday
Date: 9/9/2019

City: Grass Valley
Project #: CA19_7288_011

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,364	1,217	2,581

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00	0	0	0		1		1		**12:00**	0	0	41		18		59	
00:15	0	0	0		0				**12:15**	0	0	35		27		62	
00:30	0	0	0		0				**12:30**	0	0	24		24		48	
00:45	0	0	0		0	1		1	**12:45**	0	0	17	117	30	99	47	216
01:00	0	0	0		0				**13:00**	0	0	25		26		51	
01:15	0	0	0		1		1		**13:15**	0	0	25		30		55	
01:30	0	0	0		0				**13:30**	0	0	26		16		42	
01:45	0	0	0		0	1		1	**13:45**	0	0	21	97	33	105	54	202
02:00	0	0	0		0				**14:00**	0	0	15		18		33	
02:15	0	0	0		0				**14:15**	0	0	25		15		40	
02:30	0	0	0		0				**14:30**	0	0	35		24		59	
02:45	0	0	0		0				**14:45**	0	0	25	100	30	87	55	187
03:00	0	0	0		1		1		**15:00**	0	0	30		29		59	
03:15	0	0	0		0				**15:15**	0	0	21		30		51	
03:30	0	0	0		0				**15:30**	0	0	49		26		75	
03:45	0	0	2	2	0	1	2	3	**15:45**	0	0	37	137	34	119	71	256
04:00	0	0	0		1		1		**16:00**	0	0	36		23		59	
04:15	0	0	4		1		5		**16:15**	0	0	33		24		57	
04:30	0	0	1		1		2		**16:30**	0	0	47		19		66	
04:45	0	0	0	5	2	5	2	10	**16:45**	0	0	31	147	12	78	43	225
05:00	0	0	0		2		2		**17:00**	0	0	58		21		79	
05:15	0	0	4		5		9		**17:15**	0	0	44		15		59	
05:30	0	0	2		2		4		**17:30**	0	0	39		14		53	
05:45	0	0	3	9	17	26	20	35	**17:45**	0	0	24	165	8	58	32	223
06:00	0	0	2		10		12		**18:00**	0	0	17		3		20	
06:15	0	0	1		6		7		**18:15**	0	0	8		6		14	
06:30	0	0	7		13		20		**18:30**	0	0	20		8		28	
06:45	0	0	16	26	23	52	39	78	**18:45**	0	0	11	56	17	34	28	90
07:00	0	0	21		16		37		**19:00**	0	0	8		8		16	
07:15	0	0	8		16		24		**19:15**	0	0	4		4		8	
07:30	0	0	16		35		51		**19:30**	0	0	5		3		8	
07:45	0	0	13	58	30	97	43	155	**19:45**	0	0	2	19	8	23	10	42
08:00	0	0	22		34		56		**20:00**	0	0	8		5		13	
08:15	0	0	14		27		41		**20:15**	0	0	5		4		9	
08:30	0	0	18		25		43		**20:30**	0	0	19		3		22	
08:45	0	0	20	74	32	118	52	192	**20:45**	0	0	5	37	0	12	5	49
09:00	0	0	18		34		52		**21:00**	0	0	4		0		4	
09:15	0	0	25		21		46		**21:15**	0	0	4		1		5	
09:30	0	0	17		27		44		**21:30**	0	0	2		0		2	
09:45	0	0	26	86	25	107	51	193	**21:45**	0	0	2	12	0	1	2	13
10:00	0	0	26		24		50		**22:00**	0	0	2		1		3	
10:15	0	0	22		24		46		**22:15**	0	0	0		1		1	
10:30	0	0	18		24		42		**22:30**	0	0	2		0		2	
10:45	0	0	16	82	26	98	42	180	**22:45**	0	0	2	6	0	2	2	8
11:00	0	0	27		27		54		**23:00**	0	0	0		0			
11:15	0	0	35		15		50		**23:15**	0	0	0		0			
11:30	0	0	28		18		46		**23:30**	0	0	0		1		1	
11:45	0	0	37	127	31	91	68	218	**23:45**	0	0	2	2	1	2	3	4
TOTALS				469		597		**1066**	**TOTALS**				895		620		**1515**
SPLIT %				44.0%		56.0%		**41.3%**	**SPLIT %**				59.1%		40.9%		**58.7%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,364	1,217	2,581

AM Peak Hour				11:15		07:30		**11:45**	**PM Peak Hour**				16:30		15:00		**15:30**
AM Pk Volume				141		126		**237**	**PM Pk Volume**				180		119		**262**
Pk Hr Factor				0.860		0.900		**0.871**	**Pk Hr Factor**				0.776		0.875		**0.873**
7 - 9 Volume	0	0		132		215		**347**	**4 - 6 Volume**	0	0		312		136		**448**
7 - 9 Peak Hour				08:00		07:30		**08:00**	**4 - 6 Peak Hour**				16:30		16:00		**16:30**
7 - 9 Pk Volume	0	0		74		126		**192**	**4 - 6 Pk Volume**	0	0		180		78		**247**
Pk Hr Factor	0.000	0.000		0.841		0.900		**0.857**	**Pk Hr Factor**	0.000	0.000		0.776		0.813		**0.782**

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Monday
Date: 9/9/2019

City: Grass Valley
Project #: CA19_7288_011e

East Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
04:00	0	2	2	0	1	0	0	0	0	0	0	0	0	5
05:00	0	5	1	0	2	1	0	0	0	0	0	0	0	9
06:00	0	12	6	0	4	1	0	0	1	0	2	0	0	26
07:00	0	37	16	0	5	0	0	0	0	0	0	0	0	58
08:00	0	43	24	0	6	0	0	0	0	0	1	0	0	74
09:00	0	58	25	0	3	0	0	0	0	0	0	0	0	86
10:00	1	49	22	1	8	1	0	0	0	0	0	0	0	82
11:00	1	79	37	1	5	4	0	0	0	0	0	0	0	127
12:00 PM	1	82	29	0	4	1	0	0	0	0	0	0	0	117
13:00	1	65	19	0	9	2	0	1	0	0	0	0	0	97
14:00	1	64	22	0	9	2	0	0	2	0	0	0	0	100
15:00	0	90	36	1	5	5	0	0	0	0	0	0	0	137
16:00	3	104	36	1	3	0	0	0	0	0	0	0	0	147
17:00	2	122	38	0	3	0	0	0	0	0	0	0	0	165
18:00	1	42	8	2	3	0	0	0	0	0	0	0	0	56
19:00	0	14	4	0	0	0	0	1	0	0	0	0	0	19
20:00	0	30	6	1	0	0	0	0	0	0	0	0	0	37
21:00	0	11	1	0	0	0	0	0	0	0	0	0	0	12
22:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
23:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Totals	**11**	**916**	**335**	**7**	**70**	**17**		**2**	**3**		**3**			**1364**
% of Totals	1%	67%	25%	1%	5%	1%		0%	0%		0%			100%

AM Volumes	2	286	134	2	34	7	0	0	1	0	3	0	0	469
% AM	0%	21%	10%	0%	2%	1%			0%		0%			34%
AM Peak Hour	10:00	11:00	11:00	10:00	10:00	11:00			06:00		06:00			11:00
Volume	1	79	37	1	8	4			1		2			127
PM Volumes	9	630	201	5	36	10	0	2	2	0	0	0	0	895
% PM	1%	46%	15%	0%	3%	1%		0%	0%					66%
PM Peak Hour	16:00	17:00	17:00	18:00	13:00	15:00		13:00	14:00					17:00
Volume	3	122	38	2	9	5		1	2					165

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	132	10%	214	16%	312	23%	706	52%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Monday
Date: 9/9/2019

City: Grass Valley
Project #: CA19_7288_011w

West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
05:00	0	18	4	0	3	1	0	0	0	0	0	0	0	26
06:00	2	36	10	0	4	0	0	0	0	0	0	0	0	52
07:00	0	73	18	0	6	0	0	0	0	0	0	0	0	97
08:00	1	81	26	0	10	0	0	0	0	0	0	0	0	118
09:00	0	66	29	0	11	1	0	0	0	0	0	0	0	107
10:00	1	59	30	0	7	1	0	0	0	0	0	0	0	98
11:00	1	59	23	0	6	2	0	0	0	0	0	0	0	91
12:00 PM	3	63	26	1	5	0	0	1	0	0	0	0	0	99
13:00	0	70	24	2	9	0	0	0	0	0	0	0	0	105
14:00	0	58	23	0	4	1	0	0	1	0	0	0	0	87
15:00	0	83	24	0	11	1	0	0	0	0	0	0	0	119
16:00	0	55	19	1	3	0	0	0	0	0	0	0	0	78
17:00	0	41	12	1	4	0	0	0	0	0	0	0	0	58
18:00	0	27	6	0	1	0	0	0	0	0	0	0	0	34
19:00	0	16	4	2	1	0	0	0	0	0	0	0	0	23
20:00	0	7	5	0	0	0	0	0	0	0	0	0	0	12
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
23:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Totals	**8**	**823**	**285**	**7**	**85**	**7**		**1**	**1**					**1217**
% of Totals	1%	68%	23%	1%	7%	1%		0%	0%					100%

AM Volumes	5	398	142	0	47	5	0	0	0	0	0	0	0	597
% AM	0%	33%	12%		4%	0%								49%
AM Peak Hour	06:00	08:00	10:00		09:00	11:00								08:00
Volume	2	81	30		11	2								118
PM Volumes	3	425	143	7	38	2	0	1	1	0	0	0	0	620
% PM	0%	35%	12%	1%	3%	0%		0%	0%					51%
PM Peak Hour	12:00	15:00	12:00	13:00	15:00	14:00		12:00	14:00					15:00
Volume	3	83	26	2	11	1		1	1					119

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	215	18%	204	17%	136	11%	662	54%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Monday
Date: 9/9/2019

City: Grass Valley
Project #: CA19_7288_011

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
04:00	0	6	3	0	1	0	0	0	0	0	0	0	0	10
05:00	0	23	5	0	5	2	0	0	0	0	0	0	0	35
06:00	2	48	16	0	8	1	0	0	1	0	2	0	0	78
07:00	0	110	34	0	11	0	0	0	0	0	0	0	0	155
08:00	1	124	50	0	16	0	0	0	0	0	1	0	0	192
09:00	0	124	54	0	14	1	0	0	0	0	0	0	0	193
10:00	2	108	52	1	15	2	0	0	0	0	0	0	0	180
11:00	2	138	60	1	11	6	0	0	0	0	0	0	0	218
12:00 PM	4	145	55	1	9	1	0	1	0	0	0	0	0	216
13:00	1	135	43	2	18	2	0	1	0	0	0	0	0	202
14:00	1	122	45	0	13	3	0	0	3	0	0	0	0	187
15:00	0	173	60	1	16	6	0	0	0	0	0	0	0	256
16:00	3	159	55	2	6	0	0	0	0	0	0	0	0	225
17:00	2	163	50	1	7	0	0	0	0	0	0	0	0	223
18:00	1	69	14	2	4	0	0	0	0	0	0	0	0	90
19:00	0	30	8	2	1	0	0	1	0	0	0	0	0	42
20:00	0	37	11	1	0	0	0	0	0	0	0	0	0	49
21:00	0	12	1	0	0	0	0	0	0	0	0	0	0	13
22:00	0	6	2	0	0	0	0	0	0	0	0	0	0	8
23:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
Totals	**19**	**1739**	**620**	**14**	**155**	**24**		**3**	**4**		**3**			**2581**
% of Totals	1%	67%	24%	1%	6%	1%		0%	0%		0%			100%

AM Volumes	7	684	276	2	81	12	0	0	1	0	3	0	0	1066
% AM	0%	27%	11%	0%	3%	0%			0%		0%			41%
AM Peak Hour	06:00	11:00	11:00	10:00	08:00	11:00			06:00		06:00			11:00
Volume	2	138	60	1	16	6			1		2			218
PM Volumes	12	1055	344	12	74	12	0	3	3	0	0	0	0	1515
% PM	0%	41%	13%	0%	3%	0%		0%	0%					59%
PM Peak Hour	12:00	15:00	15:00	13:00	13:00	15:00		12:00	14:00					15:00
Volume	4	173	60	2	18	6		1	3					256

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	347	13%	418	16%	448	17%	1368	53%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Tuesday
Date: 9/10/2019

City: Grass Valley
Project #: CA19_7288_011

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,286	1,174	2,460

AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00	0	0	0	0		**12:00**	0	0	32	14	46
00:15	0	0	0	1	1	**12:15**	0	0	37	31	68
00:30	0	0	0	0		**12:30**	0	0	28	19	47
00:45	0	0	0	0	1	**12:45**	0	0	14	111	29	93	43	204
01:00	0	0	0	0		**13:00**	0	0	29	26	55
01:15	0	0	0	0		**13:15**	0	0	30	32	62
01:30	0	0	0	0		**13:30**	0	0	23	11	34
01:45	0	0	0	0		**13:45**	0	0	23	105	30	99	53	204
02:00	0	0	0	0		**14:00**	0	0	14	18	32
02:15	0	0	0	0		**14:15**	0	0	21	15	36
02:30	0	0	0	0		**14:30**	0	0	33	26	59
02:45	0	0	0	0		**14:45**	0	0	28	96	29	88	57	184
03:00	0	0	0	0		**15:00**	0	0	28	33	61
03:15	0	0	0	1	1	**15:15**	0	0	16	24	40
03:30	0	0	1	0	1	**15:30**	0	0	51	25	76
03:45	0	0	2	3	0	1	2	4	**15:45**	0	0	35	130	30	112	65	242
04:00	0	0	0	0		**16:00**	0	0	35	18	53
04:15	0	0	1	2	3	**16:15**	0	0	37	23	60
04:30	0	0	1	2	3	**16:30**	0	0	50	25	75
04:45	0	0	1	3	1	5	2	8	**16:45**	0	0	24	146	14	80	38	226
05:00	0	0	0	3	3	**17:00**	0	0	62	17	79
05:15	0	0	1	2	3	**17:15**	0	0	44	10	54
05:30	0	0	2	2	4	**17:30**	0	0	35	20	55
05:45	0	0	1	4	11	18	12	22	**17:45**	0	0	25	166	14	61	39	227
06:00	0	0	3	9	12	**18:00**	0	0	14	4	18
06:15	0	0	2	7	9	**18:15**	0	0	5	3	8
06:30	0	0	7	10	17	**18:30**	0	0	16	5	21
06:45	0	0	15	27	21	47	36	74	**18:45**	0	0	10	45	19	31	29	76
07:00	0	0	21	14	35	**19:00**	0	0	10	10	20
07:15	0	0	5	12	17	**19:15**	0	0	3	2	5
07:30	0	0	12	33	45	**19:30**	0	0	9	2	11
07:45	0	0	17	55	28	87	45	142	**19:45**	0	0	1	23	9	23	10	46
08:00	0	0	17	36	53	**20:00**	0	0	6	1	7
08:15	0	0	13	24	37	**20:15**	0	0	6	3	9
08:30	0	0	17	26	43	**20:30**	0	0	14	1	15
08:45	0	0	18	65	34	120	52	185	**20:45**	0	0	0	26	0	5		31
09:00	0	0	21	30	51	**21:00**	0	0	7	1	8
09:15	0	0	22	21	43	**21:15**	0	0	3	2	5
09:30	0	0	18	27	45	**21:30**	0	0	2	0	2
09:45	0	0	23	84	27	105	50	189	**21:45**	0	0	0	12	1	4	1	16
10:00	0	0	22	20	42	**22:00**	0	0	1	2	3
10:15	0	0	16	21	37	**22:15**	0	0	1	2	3
10:30	0	0	17	26	43	**22:30**	0	0	0	0	
10:45	0	0	13	68	23	90	36	158	**22:45**	0	0	3	5	0	4	3	9
11:00	0	0	15	29	44	**23:00**	0	0	0	1	1
11:15	0	0	36	20	56	**23:15**	0	0	0	0	
11:30	0	0	22	16	38	**23:30**	0	0	1	2	3
11:45	0	0	37	110	30	95	67	205	**23:45**	0	0	1	2	2	5	3	7
TOTALS				419	569	**988**	**TOTALS**				867	605	**1472**
SPLIT %				42.4%	57.6%	**40.2%**	**SPLIT %**				58.9%	41.1%	**59.8%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,286	1,174	2,460

AM Peak Hour			11:45	07:30	**11:45**	**PM Peak Hour**			16:30	14:30	**15:30**
AM Pk Volume			134	121	**228**	**PM Pk Volume**			180	112	**254**
Pk Hr Factor			0.905	0.840	**0.838**	**Pk Hr Factor**			0.726	0.848	**0.836**
7 - 9 Volume	0	0	120	207	**327**	**4 - 6 Volume**	0	0	312	141	**453**
7 - 9 Peak Hour			08:00	07:30	**08:00**	**4 - 6 Peak Hour**			16:30	16:00	**16:15**
7 - 9 Pk Volume	0	0	65	121	**185**	**4 - 6 Pk Volume**	0	0	180	80	**252**
Pk Hr Factor	0.000	0.000	0.903	0.840	**0.873**	**Pk Hr Factor**	0.000	0.000	0.726	0.800	**0.797**

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Tuesday
Date: 9/10/2019

City: Grass Valley
Project #: CA19_7288_011e

East Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
05:00	0	2	1	0	1	0	0	0	0	0	0	0	0	4
06:00	0	14	8	0	5	0	0	0	0	0	0	0	0	27
07:00	0	37	14	1	3	0	0	0	0	0	0	0	0	55
08:00	1	38	21	0	4	1	0	0	0	0	0	0	0	65
09:00	0	59	18	1	4	2	0	0	0	0	0	0	0	84
10:00	1	40	23	0	3	1	0	0	0	0	0	0	0	68
11:00	0	74	31	1	3	1	0	0	0	0	0	0	0	110
12:00 PM	1	74	29	0	6	1	0	0	0	0	0	0	0	111
13:00	1	76	17	1	10	0	0	0	0	0	0	0	0	105
14:00	0	65	24	0	7	0	0	0	0	0	0	0	0	96
15:00	0	96	31	0	1	2	0	0	0	0	0	0	0	130
16:00	2	109	33	1	1	0	0	0	0	0	0	0	0	146
17:00	0	125	36	0	4	1	0	0	0	0	0	0	0	166
18:00	1	35	4	1	4	0	0	0	0	0	0	0	0	45
19:00	0	17	3	0	3	0	0	0	0	0	0	0	0	23
20:00	0	22	3	0	1	0	0	0	0	0	0	0	0	26
21:00	0	10	2	0	0	0	0	0	0	0	0	0	0	12
22:00	0	1	4	0	0	0	0	0	0	0	0	0	0	5
23:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Totals	**7**	**902**	**302**	**6**	**60**	**9**								**1286**
% of Totals	1%	70%	23%	0%	5%	1%								100%

AM Volumes	2	270	116	3	23	5	0	0	0	0	0	0	0	419
% AM	0%	21%	9%	0%	2%	0%								33%
AM Peak Hour	08:00	11:00	11:00	07:00	06:00	09:00								11:00
Volume	1	74	31	1	5	2								110
PM Volumes	5	632	186	3	37	4	0	0	0	0	0	0	0	867
% PM	0%	49%	14%	0%	3%	0%								67%
PM Peak Hour	16:00	17:00	17:00	13:00	13:00	15:00								17:00
Volume	2	125	36	1	10	2								166

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	120		9%	216		17%	312		24%	638		50%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Tuesday
Date: 9/10/2019

City: Grass Valley
Project #: CA19_7288_011w

West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
05:00	0	15	1	0	2	0	0	0	0	0	0	0	0	18
06:00	0	32	9	0	6	0	0	0	0	0	0	0	0	47
07:00	1	65	15	0	6	0	0	0	0	0	0	0	0	87
08:00	0	88	25	1	5	1	0	0	0	0	0	0	0	120
09:00	0	68	30	0	7	0	0	0	0	0	0	0	0	105
10:00	1	58	26	0	5	0	0	0	0	0	0	0	0	90
11:00	0	63	23	1	7	1	0	0	0	0	0	0	0	95
12:00 PM	0	67	22	0	4	0	0	0	0	0	0	0	0	93
13:00	1	64	25	0	9	0	0	0	0	0	0	0	0	99
14:00	0	62	20	1	4	1	0	0	0	0	0	0	0	88
15:00	1	79	26	0	6	0	0	0	0	0	0	0	0	112
16:00	0	53	24	1	2	0	0	0	0	0	0	0	0	80
17:00	0	48	7	0	5	1	0	0	0	0	0	0	0	61
18:00	1	20	5	0	5	0	0	0	0	0	0	0	0	31
19:00	0	16	3	1	3	0	0	0	0	0	0	0	0	23
20:00	0	2	2	0	1	0	0	0	0	0	0	0	0	5
21:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
22:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
23:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
Totals	**5**	**819**	**264**	**5**	**77**	**4**								**1174**
% of Totals	0%	70%	22%	0%	7%	0%								100%

AM Volumes	2	396	129	2	38	2	0	0	0	0	0	0	0	569
% AM	0%	34%	11%	0%	3%	0%								48%
AM Peak Hour	07:00	08:00	09:00	08:00	09:00	08:00								08:00
Volume	1	88	30	1	7	1								120
PM Volumes	3	423	135	3	39	2	0	0	0	0	0	0	0	605
% PM	0%	36%	11%	0%	3%	0%								52%
PM Peak Hour	13:00	15:00	15:00	14:00	13:00	14:00								15:00
Volume	1	79	26	1	9	1								112

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%	Volume	⟷	%
	207		18%	192		16%	141		12%	634		54%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

Whispering Pines Ln Bet. Crown Point Cir & Brunswick Rd

Day: Tuesday
Date: 9/10/2019

City: Grass Valley
Project #: CA19_7288_011

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
04:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
05:00	0	17	2	0	3	0	0	0	0	0	0	0	0	22
06:00	0	46	17	0	11	0	0	0	0	0	0	0	0	74
07:00	1	102	29	1	9	0	0	0	0	0	0	0	0	142
08:00	1	126	46	1	9	2	0	0	0	0	0	0	0	185
09:00	0	127	48	1	11	2	0	0	0	0	0	0	0	189
10:00	2	98	49	0	8	1	0	0	0	0	0	0	0	158
11:00	0	137	54	2	10	2	0	0	0	0	0	0	0	205
12:00 PM	1	141	51	0	10	1	0	0	0	0	0	0	0	204
13:00	2	140	42	1	19	0	0	0	0	0	0	0	0	204
14:00	0	127	44	1	11	1	0	0	0	0	0	0	0	184
15:00	1	175	57	0	7	2	0	0	0	0	0	0	0	242
16:00	2	162	57	2	3	0	0	0	0	0	0	0	0	226
17:00	0	173	43	0	9	2	0	0	0	0	0	0	0	227
18:00	2	55	9	1	9	0	0	0	0	0	0	0	0	76
19:00	0	33	6	1	6	0	0	0	0	0	0	0	0	46
20:00	0	24	5	0	2	0	0	0	0	0	0	0	0	31
21:00	0	13	3	0	0	0	0	0	0	0	0	0	0	16
22:00	0	5	4	0	0	0	0	0	0	0	0	0	0	9
23:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
Totals	**12**	**1721**	**566**	**11**	**137**	**13**								**2460**
% of Totals	0%	70%	23%	0%	6%	1%								100%

AM Volumes	4	666	245	5	61	7	0	0	0	0	0	0	0	988
% AM	0%	27%	10%	0%	2%	0%								40%
AM Peak Hour	10:00	11:00	11:00	11:00	06:00	08:00								11:00
Volume	2	137	54	2	11	2								205
PM Volumes	8	1055	321	6	76	6	0	0	0	0	0	0	0	1472
% PM	0%	43%	13%	0%	3%	0%								60%
PM Peak Hour	13:00	15:00	15:00	16:00	13:00	15:00								15:00
Volume	2	175	57	2	19	2								242

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	327	13%	408	17%	453	18%	1272	52%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

VOLUME

Brunswick Rd Bet. SR 174 & Project Dwy

Day: Tuesday
Date: 8/27/2019

City: Grass Valley
Project #: CA19_7289_004

DAILY TOTALS	NB	SB	EB	WB	Total
	4,647	4,744	0	0	9,391

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	2		2				4		12:00	78		79				157	
00:15	5		2				7		12:15	57		85				142	
00:30	1		4				5		12:30	82		89				171	
00:45	3	11	4	12			7	23	12:45	90	307	69	322			159	629
01:00	1		0				1		13:00	56		76				132	
01:15	0		1				1		13:15	82		69				151	
01:30	2		1				3		13:30	105		93				198	
01:45	0	3	0	2			0	5	13:45	76	319	98	336			174	655
02:00	3		0				3		14:00	84		82				166	
02:15	1		1				2		14:15	80		82				162	
02:30	1		0				1		14:30	75		99				174	
02:45	0	5	2	3			2	8	14:45	71	310	103	366			174	676
03:00	0		0				0		15:00	72		103				175	
03:15	4		0				4		15:15	91		101				192	
03:30	0		0				0		15:30	96		111				207	
03:45	4	8	6	6			10	14	15:45	88	347	103	418			191	765
04:00	1		0				1		16:00	93		102				195	
04:15	5		2				7		16:15	93		118				211	
04:30	6		4				10		16:30	72		114				186	
04:45	9	21	3	9			12	30	16:45	79	337	131	465			210	802
05:00	15		4				19		17:00	95		142				237	
05:15	12		8				20		17:15	93		177				270	
05:30	30		8				38		17:30	68		144				212	
05:45	52	109	9	29			61	138	17:45	60	316	80	543			140	859
06:00	28		14				42		18:00	51		83				134	
06:15	46		22				68		18:15	51		66				117	
06:30	60		26				86		18:30	48		78				126	
06:45	78	212	31	93			109	305	18:45	56	206	64	291			120	497
07:00	59		30				89		19:00	42		57				99	
07:15	106		59				165		19:15	18		70				88	
07:30	107		55				162		19:30	24		66				90	
07:45	142	414	49	193			191	607	19:45	30	114	58	251			88	365
08:00	122		64				186		20:00	18		75				93	
08:15	121		69				190		20:15	26		56				82	
08:30	122		80				202		20:30	20		25				45	
08:45	100	465	67	280			167	745	20:45	17	81	34	190			51	271
09:00	78		59				137		21:00	23		28				51	
09:15	69		62				131		21:15	19		28				47	
09:30	71		52				123		21:30	19		13				32	
09:45	84	302	73	246			157	548	21:45	12	73	13	82			25	155
10:00	71		57				128		22:00	9		22				31	
10:15	88		51				139		22:15	13		10				23	
10:30	69		55				124		22:30	9		16				25	
10:45	80	308	47	210			127	518	22:45	7	38	12	60			19	98
11:00	84		69				153		23:00	3		8				11	
11:15	71		84				155		23:15	2		9				11	
11:30	86		73				159		23:30	7		4				11	
11:45	86	327	87	313			173	640	23:45	2	14	3	24			5	38
TOTALS		2185		1396				3581	TOTALS		2462		3348				5810
SPLIT %		61.0%		39.0%				38.1%	SPLIT %		42.4%		57.6%				61.9%

DAILY TOTALS	NB	SB	EB	WB	Total
	4,647	4,744	0	0	9,391

AM Peak Hour	07:45		11:45				07:45		PM Peak Hour	15:30		16:45				16:45	
AM Pk Volume	507		340				769		PM Pk Volume	370		594				929	
Pk Hr Factor	0.893		0.955				0.952		Pk Hr Factor	0.964		0.839				0.860	
7 - 9 Volume	879		473		0	0	1352		4 - 6 Volume	653		1008		0	0	1661	
7 - 9 Peak Hour	07:45		08:00				07:45		4 - 6 Peak Hour	16:15		16:45				16:45	
7 - 9 Pk Volume	507		280		0	0	769		4 - 6 Pk Volume	339		594		0	0	929	
Pk Hr Factor	0.893		0.875		0.000	0.000	0.952		Pk Hr Factor	0.892		0.839		0.000	0.000	0.860	

Prepared by National Data & Surveying Services

VOLUME

Brunswick Rd Bet. SR 174 & Project Dwy

Day: Wednesday
Date: 8/28/2019

City: Grass Valley
Project #: CA19_7289_004

DAILY TOTALS	NB	SB	EB	WB	Total
	4,673	4,667	0	0	9,340

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	2		2				4		**12:00**	74		81				155	
00:15	3		5				8		**12:15**	78		74				152	
00:30	4		2				6		**12:30**	75		94				169	
00:45	0	9	4	13			4	22	**12:45**	96	323	79	328			175	651
01:00	0		1				1		**13:00**	84		69				153	
01:15	1		1				2		**13:15**	77		66				143	
01:30	1		1				2		**13:30**	80		85				165	
01:45	2	4	3	6			5	10	**13:45**	79	320	90	310			169	630
02:00	3		0				3		**14:00**	65		92				157	
02:15	1		2				3		**14:15**	66		84				150	
02:30	2		0				2		**14:30**	84		104				188	
02:45	2	8	1	3			3	11	**14:45**	73	288	89	369			162	657
03:00	2		0				2		**15:00**	82		103				185	
03:15	4		2				6		**15:15**	101		94				195	
03:30	3		1				4		**15:30**	68		117				185	
03:45	4	13	5	8			9	21	**15:45**	87	338	124	438			211	776
04:00	1		2				3		**16:00**	107		118				225	
04:15	8		2				10		**16:15**	93		105				198	
04:30	3		1				4		**16:30**	96		144				240	
04:45	14	26	1	6			15	32	**16:45**	80	376	129	496			209	872
05:00	11		2				13		**17:00**	85		134				219	
05:15	16		8				24		**17:15**	81		134				215	
05:30	37		10				47		**17:30**	75		102				177	
05:45	50	114	17	37			67	151	**17:45**	62	303	92	462			154	765
06:00	16		13				29		**18:00**	54		82				136	
06:15	53		24				77		**18:15**	60		74				134	
06:30	65		36				101		**18:30**	48		79				127	
06:45	79	213	43	116			122	329	**18:45**	52	214	89	324			141	538
07:00	50		31				81		**19:00**	46		64				110	
07:15	85		44				129		**19:15**	35		57				92	
07:30	122		42				164		**19:30**	27		59				86	
07:45	145	402	42	159			187	561	**19:45**	21	129	41	221			62	350
08:00	127		74				201		**20:00**	39		47				86	
08:15	122		64				186		**20:15**	24		49				73	
08:30	112		52				164		**20:30**	28		38				66	
08:45	102	463	62	252			164	715	**20:45**	15	106	38	172			53	278
09:00	83		59				142		**21:00**	13		40				53	
09:15	72		75				147		**21:15**	12		27				39	
09:30	66		64				130		**21:30**	12		20				32	
09:45	95	316	50	248			145	564	**21:45**	11	48	19	106			30	154
10:00	76		60				136		**22:00**	15		13				28	
10:15	78		48				126		**22:15**	10		10				20	
10:30	55		55				110		**22:30**	8		9				17	
10:45	74	283	53	216			127	499	**22:45**	5	38	9	41			14	79
11:00	87		80				167		**23:00**	4		8				12	
11:15	70		75				145		**23:15**	6		6				12	
11:30	79		85				164		**23:30**	4		3				7	
11:45	85	321	77	317			162	638	**23:45**	4	18	2	19			6	37
TOTALS		2172		1381				**3553**	**TOTALS**		2501		3286				**5787**
SPLIT %		61.1%		38.9%				**38.0%**	**SPLIT %**		43.2%		56.8%				**62.0%**

DAILY TOTALS	NB	SB	EB	WB	Total
	4,673	4,667	0	0	9,340

AM Peak Hour	07:30		11:45					**07:30**	**PM Peak Hour**	15:45		16:30					**16:30**
AM Pk Volume	516		326					**738**	**PM Pk Volume**	383		541					**883**
Pk Hr Factor	0.890		0.867					**0.918**	**Pk Hr Factor**	0.895		0.939					**0.920**
7 - 9 Volume	865		411		0	0		**1276**	**4 - 6 Volume**	679		958		0	0		**1637**
7 - 9 Peak Hour	07:30		08:00					**07:30**	**4 - 6 Peak Hour**	16:00		16:30					**16:30**
7 - 9 Pk Volume	516		252		0	0		**738**	**4 - 6 Pk Volume**	376		541		0	0		**883**
Pk Hr Factor	0.890		0.851		0.000	0.000		**0.918**	**Pk Hr Factor**	0.879		0.939		0.000	0.000		**0.920**

Prepared by National Data & Surveying Services

VOLUME

Brunswick Rd Bet. SR 174 & Project Dwy

Day: Thursday
Date: 8/29/2019

City: Grass Valley
Project #: CA19_7289_004

DAILY TOTALS	NB	SB	EB	WB	Total
	4,700	4,824	0	0	9,524

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	2		12				14		**12:00**	77		84				161	
00:15	2		3				5		**12:15**	77		87				164	
00:30	5		0				5		**12:30**	72		86				158	
00:45	0	9	4	19			4	28	**12:45**	74	300	63	320			137	620
01:00	1		1				2		**13:00**	73		72				145	
01:15	1		1				2		**13:15**	86		72				158	
01:30	1		0				1		**13:30**	83		75				158	
01:45	1	4	2	4			3	8	**13:45**	85	327	92	311			177	638
02:00	0		0				0		**14:00**	71		87				158	
02:15	3		0				3		**14:15**	81		88				169	
02:30	1		1				2		**14:30**	62		103				165	
02:45	2	6	1	2			3	8	**14:45**	91	305	92	370			183	675
03:00	1		1				2		**15:00**	62		117				179	
03:15	4		3				7		**15:15**	100		84				184	
03:30	1		1				2		**15:30**	91		132				223	
03:45	4	10	1	6			5	16	**15:45**	119	372	136	469			255	841
04:00	4		3				7		**16:00**	94		146				240	
04:15	3		3				6		**16:15**	78		105				183	
04:30	10		1				11		**16:30**	91		115				206	
04:45	12	29	2	9			14	38	**16:45**	76	339	116	482			192	821
05:00	7		4				11		**17:00**	89		153				242	
05:15	15		4				19		**17:15**	93		165				258	
05:30	31		13				44		**17:30**	70		116				186	
05:45	51	104	9	30			60	134	**17:45**	65	317	112	546			177	863
06:00	26		17				43		**18:00**	51		81				132	
06:15	44		22				66		**18:15**	39		84				123	
06:30	48		28				76		**18:30**	42		69				111	
06:45	74	192	20	87			94	279	**18:45**	40	172	72	306			112	478
07:00	60		38				98		**19:00**	49		65				114	
07:15	78		47				125		**19:15**	33		50				83	
07:30	119		48				167		**19:30**	25		57				82	
07:45	150	407	58	191			208	598	**19:45**	29	136	40	212			69	348
08:00	129		86				215		**20:00**	25		54				79	
08:15	117		82				199		**20:15**	25		49				74	
08:30	127		66				193		**20:30**	15		34				49	
08:45	121	494	56	290			177	784	**20:45**	21	86	30	167			51	253
09:00	93		70				163		**21:00**	23		24				47	
09:15	57		60				117		**21:15**	22		16				38	
09:30	92		75				167		**21:30**	23		21				44	
09:45	75	317	71	276			146	593	**21:45**	19	87	14	75			33	162
10:00	73		70				143		**22:00**	14		13				27	
10:15	67		71				138		**22:15**	12		10				22	
10:30	97		61				158		**22:30**	13		7				20	
10:45	87	324	71	273			158	597	**22:45**	8	47	8	38			16	85
11:00	70		87				157		**23:00**	3		7				10	
11:15	67		61				128		**23:15**	4		7				11	
11:30	95		84				179		**23:30**	1		6				7	
11:45	71	303	79	311			150	614	**23:45**	5	13	10	30			15	43
TOTALS		2199		1498				**3697**	**TOTALS**		2501		3326				**5827**
SPLIT %		59.5%		40.5%				**38.8%**	**SPLIT %**		42.9%		57.1%				**61.2%**

DAILY TOTALS	NB	SB	EB	WB	Total
	4,700	4,824	0	0	9,524

AM Peak Hour	07:45	11:45					**07:45**	**PM Peak Hour**	15:15	16:45					**15:15**
AM Pk Volume	523	336					**815**	**PM Pk Volume**	404	550					**902**
Pk Hr Factor	0.872	0.966					**0.948**	**Pk Hr Factor**	0.849	0.833					**0.884**
7 - 9 Volume	901	481	0	0			**1382**	**4 - 6 Volume**	656	1028	0	0			**1684**
7 - 9 Peak Hour	07:45	07:45					**07:45**	**4 - 6 Peak Hour**	16:30	16:45					**16:30**
7 - 9 Pk Volume	523	292	0	0			**815**	**4 - 6 Pk Volume**	349	550	0	0			**898**
Pk Hr Factor	0.872	0.849	0.000	0.000			**0.948**	**Pk Hr Factor**	0.938	0.833	0.000	0.000			**0.870**

Prepared by National Data & Surveying Services

VOLUME

SR 174 Bet. Brunswick Rd & Empire St

Day: Tuesday
Date: 8/27/2019

City: Grass Valley
Project #: CA19_7289_005

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,131	4,173	8,304

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			2		0		2		12:00			68		74		142	
00:15			3		2		5		12:15			67		63		130	
00:30			3		0		3		12:30			56		55		111	
00:45			4	12	3	5	7	17	12:45			45	236	71	263	116	499
01:00			4		0		4		13:00			65		63		128	
01:15			3		2		5		13:15			64		70		134	
01:30			4		1		5		13:30			48		75		123	
01:45			2	13	0	3	2	16	13:45			60	237	81	289	141	526
02:00			1		1		2		14:00			71		75		146	
02:15			0		0		0		14:15			81		66		147	
02:30			0		0		0		14:30			86		67		153	
02:45			2	3	1	2	3	5	14:45			77	315	80	288	157	603
03:00			0		0		0		15:00			93		100		193	
03:15			0		3		3		15:15			148		76		224	
03:30			0		2		2		15:30			95		63		158	
03:45			1	1	1	6	2	7	15:45			101	437	95	334	196	771
04:00			1		6		7		16:00			96		75		171	
04:15			2		6		8		16:15			93		82		175	
04:30			0		5		5		16:30			89		57		146	
04:45			2	5	13	30	15	35	16:45			87	365	87	301	174	666
05:00			5		6		11		17:00			118		75		193	
05:15			6		17		23		17:15			95		72		167	
05:30			9		9		18		17:30			77		77		154	
05:45			11	31	14	46	25	77	17:45			81	371	67	291	148	662
06:00			15		24		39		18:00			78		45		123	
06:15			15		33		48		18:15			65		46		111	
06:30			31		44		75		18:30			54		41		95	
06:45			37	98	66	167	103	265	18:45			53	250	37	169	90	419
07:00			38		56		94		19:00			52		33		85	
07:15			54		78		132		19:15			50		34		84	
07:30			49		105		154		19:30			39		24		63	
07:45			64	205	144	383	208	588	19:45			46	187	21	112	67	299
08:00			65		144		209		20:00			44		19		63	
08:15			63		179		242		20:15			40		45		85	
08:30			89		101		190		20:30			38		18		56	
08:45			60	277	88	512	148	789	20:45			30	152	13	95	43	247
09:00			55		71		126		21:00			22		14		36	
09:15			69		68		137		21:15			38		17		55	
09:30			57		66		123		21:30			21		19		40	
09:45			55	236	71	276	126	512	21:45			17	98	9	59	26	157
10:00			64		55		119		22:00			16		9		25	
10:15			64		61		125		22:15			13		6		19	
10:30			73		52		125		22:30			10		8		18	
10:45			63	264	54	222	117	486	22:45			8	47	7	30	15	77
11:00			53		64		117		23:00			4		2		6	
11:15			69		71		140		23:15			2		4		6	
11:30			61		80		141		23:30			6		3		9	
11:45			91	274	63	278	154	552	23:45			5	17	3	12	8	29
TOTALS				1419		1930		3349	TOTALS				2712		2243		4955
SPLIT %				42.4%		57.6%		40.3%	SPLIT %				54.7%		45.3%		59.7%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,131	4,173	8,304

AM Peak Hour				11:15	07:30	07:45		PM Peak Hour				15:15	15:00	15:00
AM Pk Volume				289	572	849		PM Pk Volume				440	334	771
Pk Hr Factor				0.794	0.799	0.877		Pk Hr Factor				0.743	0.835	0.860
7 - 9 Volume	0	0		482	895	1377		4 - 6 Volume	0	0		736	592	1328
7 - 9 Peak Hour				07:45	07:30	07:45		4 - 6 Peak Hour				16:30	16:45	16:15
7 - 9 Pk Volume	0	0		281	572	849		4 - 6 Pk Volume	0	0		389	311	688
Pk Hr Factor	0.000	0.000		0.789	0.799	0.877		Pk Hr Factor	0.000	0.000		0.824	0.894	0.891

Prepared by National Data & Surveying Services

VOLUME

SR 174 Bet. Brunswick Rd & Empire St

Day: Wednesday
Date: 8/28/2019

City: Grass Valley
Project #: CA19_7289_005

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,094	4,169	8,263

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			4		1		5		12:00			46		61		107	
00:15			2		1		3		12:15			59		62		121	
00:30			4		2		6		12:30			81		60		141	
00:45			2	12	0	4	2	16	12:45			72	258	72	255	144	513
01:00			4		2		6		13:00			54		37		91	
01:15			2		0		2		13:15			87		73		160	
01:30			1		0		1		13:30			62		54		116	
01:45			0	7	1	3	1	10	13:45			78	281	56	220	134	501
02:00			2		0		2		14:00			58		85		143	
02:15			1		2		3		14:15			66		74		140	
02:30			1		1		2		14:30			108		64		172	
02:45			0	4	0	3	0	7	14:45			73	305	92	315	165	620
03:00			0		1		1		15:00			87		71		158	
03:15			0		3		3		15:15			132		92		224	
03:30			2		3		5		15:30			100		70		170	
03:45			1	3	2	9	3	12	15:45			115	434	93	326	208	760
04:00			3		3		6		16:00			94		81		175	
04:15			0		8		8		16:15			103		71		174	
04:30			2		6		8		16:30			92		74		166	
04:45			1	6	2	19	3	25	16:45			81	370	86	312	167	682
05:00			5		9		14		17:00			111		114		225	
05:15			4		15		19		17:15			97		89		186	
05:30			10		11		21		17:30			78		62		140	
05:45			8	27	19	54	27	81	17:45			87	373	54	319	141	692
06:00			12		20		32		18:00			69		58		127	
06:15			20		42		62		18:15			70		47		117	
06:30			32		51		83		18:30			54		42		96	
06:45			23	87	68	181	91	268	18:45			58	251	41	188	99	439
07:00			41		53		94		19:00			56		33		89	
07:15			55		81		136		19:15			57		32		89	
07:30			43		102		145		19:30			44		22		66	
07:45			58	197	134	370	192	567	19:45			39	196	22	109	61	305
08:00			66		170		236		20:00			54		28		82	
08:15			74		186		260		20:15			35		26		61	
08:30			99		100		199		20:30			35		17		52	
08:45			50	289	71	527	121	816	20:45			36	160	13	84	49	244
09:00			60		79		139		21:00			41		18		59	
09:15			54		52		106		21:15			33		10		43	
09:30			54		64		118		21:30			27		14		41	
09:45			51	219	63	258	114	477	21:45			21	122	12	54	33	176
10:00			47		56		103		22:00			13		7		20	
10:15			49		83		132		22:15			12		13		25	
10:30			67		57		124		22:30			7		6		13	
10:45			43	206	70	266	113	472	22:45			8	40	4	30	12	70
11:00			38		58		96		23:00			8		2		10	
11:15			51		63		114		23:15			4		3		7	
11:30			56		68		124		23:30			7		3		10	
11:45			81	226	65	254	146	480	23:45			2	21	1	9	3	30
TOTALS				1283		1948		3231	TOTALS				2811		2221		5032
SPLIT %				39.7%		60.3%		39.1%	SPLIT %				55.9%		44.1%		60.9%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,094	4,169	8,263

AM Peak Hour				07:45	07:30	07:45		PM Peak Hour				15:15	16:30	15:15
AM Pk Volume				297	592	887		PM Pk Volume				441	363	777
Pk Hr Factor				0.750	0.796	0.853		Pk Hr Factor				0.835	0.796	0.867
7 - 9 Volume	0	0		486	897	1383		4 - 6 Volume	0	0		743	631	1374
7 - 9 Peak Hour				07:45	07:30	07:45		4 - 6 Peak Hour				16:15	16:30	16:30
7 - 9 Pk Volume	0	0		297	592	887		4 - 6 Pk Volume	0	0		387	363	744
Pk Hr Factor	0.000	0.000		0.750	0.796	0.853		Pk Hr Factor	0.000	0.000		0.872	0.796	0.827

Prepared by National Data & Surveying Services

VOLUME

SR 174 Bet. Brunswick Rd & Empire St

Day: Thursday
Date: 8/29/2019

City: Grass Valley
Project #: CA19_7289_005

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,091	4,219	8,310

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			3		1		4		12:00			69		53		122	
00:15			4		4		8		12:15			66		67		133	
00:30			1		3		4		12:30			51		59		110	
00:45			1	9	2	10	3	19	12:45			75	261	71	250	146	511
01:00			1		0		1		13:00			66		68		134	
01:15			0		1		1		13:15			68		61		129	
01:30			0		2		2		13:30			66		62		128	
01:45			0	1	2	5	2	6	13:45			82	282	69	260	151	542
02:00			0		0		0		14:00			44		71		115	
02:15			1		0		1		14:15			76		67		143	
02:30			0		0		0		14:30			98		82		180	
02:45			1	2	0		1	2	14:45			88	306	87	307	175	613
03:00			0		0		0		15:00			88		85		173	
03:15			0		3		3		15:15			108		82		190	
03:30			1		1		2		15:30			105		64		169	
03:45			0	1	3	7	3	8	15:45			96	397	113	344	209	741
04:00			0		3		3		16:00			125		86		211	
04:15			4		9		13		16:15			93		77		170	
04:30			1		3		4		16:30			78		65		143	
04:45			1	6	7	22	8	28	16:45			112	408	73	301	185	709
05:00			2		7		9		17:00			107		86		193	
05:15			1		13		14		17:15			90		74		164	
05:30			7		12		19		17:30			85		55		140	
05:45			10	20	17	49	27	69	17:45			77	359	55	270	132	629
06:00			15		17		32		18:00			61		52		113	
06:15			26		37		63		18:15			54		54		108	
06:30			27		52		79		18:30			61		44		105	
06:45			17	85	55	161	72	246	18:45			57	233	51	201	108	434
07:00			30		60		90		19:00			62		39		101	
07:15			50		69		119		19:15			53		22		75	
07:30			48		103		151		19:30			50		26		76	
07:45			51	179	153	385	204	564	19:45			48	213	27	114	75	327
08:00			48		158		206		20:00			46		35		81	
08:15			83		174		257		20:15			46		23		69	
08:30			89		105		194		20:30			31		18		49	
08:45			55	275	77	514	132	789	20:45			36	159	18	94	54	253
09:00			58		48		106		21:00			43		16		59	
09:15			52		76		128		21:15			26		15		41	
09:30			58		83		141		21:30			20		12		32	
09:45			53	221	68	275	121	496	21:45			17	106	9	52	26	158
10:00			46		58		104		22:00			24		12		36	
10:15			54		63		117		22:15			13		8		21	
10:30			58		53		111		22:30			16		4		20	
10:45			50	208	75	249	125	457	22:45			10	63	11	35	21	98
11:00			54		63		117		23:00			16		3		19	
11:15			57		76		133		23:15			8		4		12	
11:30			72		77		149		23:30			10		2		12	
11:45			76	259	86	302	162	561	23:45			4	38	3	12	7	50
TOTALS				1266		1979		3245	TOTALS				2825		2240		5065
SPLIT %				39.0%		61.0%		39.0%	SPLIT %				55.8%		44.2%		61.0%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,091	4,219	8,310

AM Peak Hour				08:15	07:45	07:45	PM Peak Hour				15:15	15:15	15:15
AM Pk Volume				285	590	861	PM Pk Volume				434	345	779
Pk Hr Factor				0.801	0.848	0.838	Pk Hr Factor				0.868	0.763	0.923
7 - 9 Volume	0	0		454	899	1353	4 - 6 Volume	0	0		767	571	1338
7 - 9 Peak Hour				08:00	07:45	07:45	4 - 6 Peak Hour				16:00	16:00	16:00
7 - 9 Pk Volume	0	0		275	590	861	4 - 6 Pk Volume	0	0		408	301	709
Pk Hr Factor	0.000	0.000		0.772	0.848	0.838	Pk Hr Factor	0.000	0.000		0.816	0.875	0.840

Prepared by National Data & Surveying Services

VOLUME

Empire St Bet. SR 174 & Auburn St

Day: Tuesday
Date: 8/27/2019

City: Grass Valley
Project #: CA19_7289_006

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	2,345	2,013	4,358

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			3		1		4		12:00			42		40		82	
00:15			0		0		0		12:15			33		26		59	
00:30			3		2		5		12:30			32		33		65	
00:45			2	8	1	4	3	12	12:45			30	137	34	133	64	270
01:00			2		1		3		13:00			42		28		70	
01:15			2		0		2		13:15			28		35		63	
01:30			0		0		0		13:30			32		33		65	
01:45			1	5	0	1	1	6	13:45			42	144	40	136	82	280
02:00			1		0		1		14:00			49		32		81	
02:15			0		0		0		14:15			69		21		90	
02:30			0		0		0		14:30			43		54		97	
02:45			1	2	0		1	2	14:45			41	202	33	140	74	342
03:00			0		0		0		15:00			66		36		102	
03:15			1		1		2		15:15			52		83		135	
03:30			0		2		2		15:30			53		36		89	
03:45			1	2	2	5	3	7	15:45			51	222	36	191	87	413
04:00			1		2		3		16:00			45		55		100	
04:15			3		2		5		16:15			53		38		91	
04:30			1		2		3		16:30			58		33		91	
04:45			2	7	7	13	9	20	16:45			53	209	35	161	88	370
05:00			3		5		8		17:00			43		44		87	
05:15			3		13		16		17:15			48		37		85	
05:30			4		4		8		17:30			52		39		91	
05:45			9	19	8	30	17	49	17:45			38	181	31	151	69	332
06:00			6		10		16		18:00			40		25		65	
06:15			14		17		31		18:15			31		21		52	
06:30			16		29		45		18:30			21		23		44	
06:45			15	51	30	86	45	137	18:45			27	119	18	87	45	206
07:00			21		26		47		19:00			30		15		45	
07:15			23		40		63		19:15			31		13		44	
07:30			29		32		61		19:30			19		11		30	
07:45			64	137	49	147	113	284	19:45			26	106	11	50	37	156
08:00			75		55		130		20:00			21		11		32	
08:15			67		63		130		20:15			21		20		41	
08:30			40		76		116		20:30			14		7		21	
08:45			30	212	47	241	77	453	20:45			13	69	4	42	17	111
09:00			40		26		66		21:00			13		5		18	
09:15			33		24		57		21:15			15		3		18	
09:30			36		32		68		21:30			10		11		21	
09:45			45	154	34	116	79	270	21:45			8	46	5	24	13	70
10:00			34		24		58		22:00			2		7		9	
10:15			28		28		56		22:15			4		2		6	
10:30			37		26		63		22:30			5		2		7	
10:45			35	134	26	104	61	238	22:45			5	16	0	11	5	27
11:00			35		35		70		23:00			2		2		4	
11:15			37		30		67		23:15			3		1		4	
11:30			39		26		65		23:30			3		0		3	
11:45			40	151	45	136	85	287	23:45			4	12	1	4	5	16
TOTALS				882		883		1765	TOTALS				1463		1130		2593
SPLIT %				50.0%		50.0%		40.5%	SPLIT %				56.4%		43.6%		59.5%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	2,345	2,013	4,358

AM Peak Hour			07:45	07:45	07:45	PM Peak Hour			15:00	15:15	15:00
AM Pk Volume			246	243	489	PM Pk Volume			222	210	413
Pk Hr Factor			0.820	0.799	0.940	Pk Hr Factor			0.841	0.633	0.765
7 - 9 Volume	0	0	349	388	737	4 - 6 Volume	0	0	390	312	702
7 - 9 Peak Hour			07:45	07:45	07:45	4 - 6 Peak Hour			16:00	16:00	16:00
7 - 9 Pk Volume	0	0	246	243	489	4 - 6 Pk Volume	0	0	209	161	370
Pk Hr Factor	0.000	0.000	0.820	0.799	0.940	Pk Hr Factor	0.000	0.000	0.901	0.732	0.925

Prepared by National Data & Surveying Services

VOLUME

Empire St Bet. SR 174 & Auburn St

Day: Wednesday
Date: 8/28/2019

City: Grass Valley
Project #: CA19_7289_006

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	2,246	1,983	4,229

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			3		0		3		12:00			26		33		59	
00:15			3		3		6		12:15			44		29		73	
00:30			1		2		3		12:30			47		31		78	
00:45			1	8	0	5	1	13	12:45			40	157	30	123	70	280
01:00			3		1		4		13:00			29		26		55	
01:15			1		0		1		13:15			43		25		68	
01:30			0		0		0		13:30			33		35		68	
01:45			1	5	1	2	2	7	13:45			40	145	18	104	58	249
02:00			1		0		1		14:00			44		36		80	
02:15			0		2		2		14:15			49		32		81	
02:30			0		1		1		14:30			44		55		99	
02:45			0	1	1	4	1	5	14:45			49	186	37	160	86	346
03:00			0		1		1		15:00			73		32		105	
03:15			2		1		3		15:15			54		73		127	
03:30			1		1		2		15:30			43		40		83	
03:45			0	3	0	3	0	6	15:45			61	231	41	186	102	417
04:00			1		3		4		16:00			35		44		79	
04:15			0		3		3		16:15			51		41		92	
04:30			0		3		3		16:30			49		34		83	
04:45			1	2	3	12	4	14	16:45			42	177	33	152	75	329
05:00			4		7		11		17:00			53		50		103	
05:15			2		6		8		17:15			43		37		80	
05:30			4		6		10		17:30			44		24		68	
05:45			6	16	8	27	14	43	17:45			45	185	29	140	74	325
06:00			5		14		19		18:00			40		20		60	
06:15			13		22		35		18:15			31		24		55	
06:30			13		36		49		18:30			32		12		44	
06:45			13	44	33	105	46	149	18:45			22	125	22	78	44	203
07:00			18		31		49		19:00			24		22		46	
07:15			35		36		71		19:15			28		12		40	
07:30			37		38		75		19:30			22		13		35	
07:45			32	122	52	157	84	279	19:45			25	99	14	61	39	160
08:00			60		55		115		20:00			26		17		43	
08:15			82		60		142		20:15			15		11		26	
08:30			43		84		127		20:30			16		9		25	
08:45			27	212	35	234	62	446	20:45			17	74	3	40	20	114
09:00			22		35		57		21:00			22		5		27	
09:15			24		31		55		21:15			13		3		16	
09:30			27		23		50		21:30			10		2		12	
09:45			29	102	31	120	60	222	21:45			12	57	3	13	15	70
10:00			21		22		43		22:00			6		3		9	
10:15			35		33		68		22:15			7		4		11	
10:30			36		20		56		22:30			3		1		4	
10:45			20	112	38	113	58	225	22:45			7	23	1	9	8	32
11:00			33		32		65		23:00			6		1		7	
11:15			35		22		57		23:15			2		1		3	
11:30			54		38		92		23:30			3		1		4	
11:45			26	148	38	130	64	278	23:45			1	12	2	5	3	17
TOTALS				775		912		1687	TOTALS				1471		1071		2542
SPLIT %				45.9%		54.1%		39.9%	SPLIT %				57.9%		42.1%		60.1%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	2,246	1,983	4,229

AM Peak Hour				07:45	07:45	07:45	PM Peak Hour				15:00	15:15	14:30
AM Pk Volume				217	251	468	PM Pk Volume				231	198	417
Pk Hr Factor				0.662	0.747	0.824	Pk Hr Factor				0.791	0.678	0.821
7 - 9 Volume	0	0		334	391	725	4 - 6 Volume	0	0		362	292	654
7 - 9 Peak Hour				07:45	07:45	07:45	4 - 6 Peak Hour				16:15	16:15	16:15
7 - 9 Pk Volume	0	0		217	251	468	4 - 6 Pk Volume	0	0		195	158	353
Pk Hr Factor	0.000	0.000		0.662	0.747	0.824	Pk Hr Factor	0.000	0.000		0.920	0.790	0.857

Prepared by National Data & Surveying Services

VOLUME

Empire St Bet. SR 174 & Auburn St

Day: Thursday
Date: 8/29/2019

City: Grass Valley
Project #: CA19_7289_006

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	2,140	1,948	4,088

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			0		0		0		12:00			26		21		47	
00:15			3		2		5		12:15			27		32		59	
00:30			1		0		1		12:30			21		31		52	
00:45			1	5	0	2	1	7	12:45			35	109	38	122	73	231
01:00			1		0		1		13:00			29		35		64	
01:15			0		0		0		13:15			29		26		55	
01:30			0		0		0		13:30			43		33		76	
01:45			0	1	0		0	1	13:45			40	141	30	124	70	265
02:00			1		1		2		14:00			40		26		66	
02:15			0		0		0		14:15			43		38		81	
02:30			0		0		0		14:30			49		57		106	
02:45			0	1	0	1	0	2	14:45			59	191	28	149	87	340
03:00			0		0		0		15:00			59		27		86	
03:15			0		1		1		15:15			65		79		144	
03:30			1		2		3		15:30			59		39		98	
03:45			0	1	1	4	1	5	15:45			62	245	52	197	114	442
04:00			2		3		5		16:00			67		51		118	
04:15			1		2		3		16:15			48		47		95	
04:30			0		4		4		16:30			38		34		72	
04:45			0	3	4	13	4	16	16:45			70	223	25	157	95	380
05:00			1		4		5		17:00			48		34		82	
05:15			0		8		8		17:15			38		38		76	
05:30			3		4		7		17:30			39		24		63	
05:45			5	9	9	25	14	34	17:45			42	167	24	120	66	287
06:00			9		11		20		18:00			27		25		52	
06:15			15		22		37		18:15			27		20		47	
06:30			12		32		44		18:30			33		17		50	
06:45			15	51	35	100	50	151	18:45			35	122	17	79	52	201
07:00			8		30		38		19:00			28		18		46	
07:15			35		31		66		19:15			30		6		36	
07:30			23		41		64		19:30			23		8		31	
07:45			35	101	49	151	84	252	19:45			16	97	21	53	37	150
08:00			62		46		108		20:00			13		15		28	
08:15			56		51		107		20:15			15		14		29	
08:30			48		81		129		20:30			16		9		25	
08:45			31	197	40	218	71	415	20:45			22	66	7	45	29	111
09:00			31		27		58		21:00			15		2		17	
09:15			25		32		57		21:15			15		3		18	
09:30			28		32		60		21:30			7		4		11	
09:45			19	103	25	116	44	219	21:45			13	50	5	14	18	64
10:00			29		25		54		22:00			12		4		16	
10:15			21		26		47		22:15			7		2		9	
10:30			30		23		53		22:30			7		0		7	
10:45			25	105	33	107	58	212	22:45			5	31	5	11	10	42
11:00			16		27		43		23:00			4		1		5	
11:15			28		27		55		23:15			1		3		4	
11:30			42		28		70		23:30			4		1		5	
11:45			25	111	50	132	75	243	23:45			1	10	3	8	4	18
TOTALS				688		869		1557	TOTALS				1452		1079		2531
SPLIT %				44.2%		55.8%		38.1%	SPLIT %				57.4%		42.6%		61.9%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	2,140	1,948	4,088

AM Peak Hour				07:45	07:45	07:45	PM Peak Hour				15:15	15:15	15:15
AM Pk Volume				201	227	428	PM Pk Volume				253	221	474
Pk Hr Factor				0.810	0.701	0.829	Pk Hr Factor				0.944	0.699	0.823
7 - 9 Volume	0	0		298	369	667	4 - 6 Volume	0	0		390	277	667
7 - 9 Peak Hour				07:45	07:45	07:45	4 - 6 Peak Hour				16:00	16:00	16:00
7 - 9 Pk Volume	0	0		201	227	428	4 - 6 Pk Volume	0	0		223	157	380
Pk Hr Factor	0.000	0.000		0.810	0.701	0.829	Pk Hr Factor	0.000	0.000		0.796	0.770	0.805

Prepared by National Data & Surveying Services

VOLUME

Empire St Bet. Auburn St & SR 49

Day: Tuesday
Date: 8/27/2019

City: Grass Valley
Project #: CA19_7289_007

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	2,685	2,947	5,632

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			1		1		2		**12:00**			29		58		87	
00:15			2		3		5		**12:15**			46		48		94	
00:30			3		5		8		**12:30**			26		45		71	
00:45			5	11	1	10	6	21	**12:45**			38	139	61	212	99	351
01:00			4		5		9		**13:00**			40		43		83	
01:15			0		1		1		**13:15**			37		33		70	
01:30			5		4		9		**13:30**			33		48		81	
01:45			1	10	0	10	1	20	**13:45**			49	159	50	174	99	333
02:00			2		0		2		**14:00**			58		74		132	
02:15			0		0		0		**14:15**			65		48		113	
02:30			1		10		11		**14:30**			54		63		117	
02:45			1	4	2	12	3	16	**14:45**			62	239	50	235	112	474
03:00			1		0		1		**15:00**			66		58		124	
03:15			1		1		2		**15:15**			60		90		150	
03:30			1		3		4		**15:30**			50		61		111	
03:45			0	3	2	6	2	9	**15:45**			62	238	61	270	123	508
04:00			1		3		4		**16:00**			63		62		125	
04:15			4		6		10		**16:15**			48		64		112	
04:30			1		11		12		**16:30**			62		51		113	
04:45			2	8	12	32	14	40	**16:45**			58	231	45	222	103	453
05:00			3		1		4		**17:00**			43		58		101	
05:15			6		8		14		**17:15**			61		46		107	
05:30			7		7		14		**17:30**			54		59		113	
05:45			5	21	8	24	13	45	**17:45**			60	218	49	212	109	430
06:00			6		14		20		**18:00**			29		39		68	
06:15			18		28		46		**18:15**			31		43		74	
06:30			20		24		44		**18:30**			25		34		59	
06:45			27	71	37	103	64	174	**18:45**			35	120	23	139	58	259
07:00			16		32		48		**19:00**			34		22		56	
07:15			31		55		86		**19:15**			24		30		54	
07:30			40		46		86		**19:30**			29		17		46	
07:45			68	155	70	203	138	358	**19:45**			23	110	27	96	50	206
08:00			92		79		171		**20:00**			22		27		49	
08:15			96		77		173		**20:15**			27		29		56	
08:30			53		87		140		**20:30**			19		19		38	
08:45			65	306	72	315	137	621	**20:45**			10	78	13	88	23	166
09:00			44		37		81		**21:00**			18		12		30	
09:15			35		40		75		**21:15**			16		10		26	
09:30			31		32		63		**21:30**			10		17		27	
09:45			43	153	52	161	95	314	**21:45**			15	59	12	51	27	110
10:00			35		55		90		**22:00**			5		8		13	
10:15			41		34		75		**22:15**			7		6		13	
10:30			42		43		85		**22:30**			6		5		11	
10:45			43	161	44	176	87	337	**22:45**			4	22	5	24	9	46
11:00			36		32		68		**23:00**			5		7		12	
11:15			30		45		75		**23:15**			2		5		7	
11:30			39		43		82		**23:30**			3		2		5	
11:45			49	154	35	155	84	309	**23:45**			5	15	3	17	8	32
TOTALS				1057		1207		**2264**	**TOTALS**				1628		1740		**3368**
SPLIT %				46.7%		53.3%		**40.2%**	**SPLIT %**				48.3%		51.7%		**59.8%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	2,685	2,947	5,632

AM Peak Hour				07:45		08:00		**07:45**	**PM Peak Hour**				14:15		15:15		**15:15**
AM Pk Volume				309		315		**622**	**PM Pk Volume**				247		274		**509**
Pk Hr Factor				0.805		0.905		**0.899**	**Pk Hr Factor**				0.936		0.761		**0.848**
7 - 9 Volume	0	0		461		518		**979**	**4 - 6 Volume**	0	0		449		434		**883**
7 - 9 Peak Hour				07:45		08:00		**07:45**	**4 - 6 Peak Hour**				16:00		16:00		**16:00**
7 - 9 Pk Volume	0	0		309		315		**622**	**4 - 6 Pk Volume**	0	0		231		222		**453**
Pk Hr Factor	0.000	0.000		0.805		0.905		**0.899**	**Pk Hr Factor**	0.000	0.000		0.917		0.867		**0.906**

Prepared by National Data & Surveying Services

VOLUME

Empire St Bet. Auburn St & SR 49

Day: Wednesday
Date: 8/28/2019

City: Grass Valley
Project #: CA19_7289_007

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	2,750	2,932	5,682

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			3		2		5		12:00			39		56		95	
00:15			4		4		8		12:15			40		45		85	
00:30			0		4		4		12:30			44		39		83	
00:45			1	8	1	11	2	19	12:45			38	161	40	180	78	341
01:00			3		1		4		13:00			43		50		93	
01:15			1		0		1		13:15			49		46		95	
01:30			1		0		1		13:30			39		45		84	
01:45			3	8	2	3	5	11	13:45			42	173	46	187	88	360
02:00			1		0		1		14:00			45		45		90	
02:15			0		1		1		14:15			77		60		137	
02:30			0		3		3		14:30			61		53		114	
02:45			0	1	3	7	3	8	14:45			90	273	52	210	142	483
03:00			0		1		1		15:00			88		90		178	
03:15			1		2		3		15:15			55		82		137	
03:30			1		1		2		15:30			62		54		116	
03:45			0	2	1	5	1	7	15:45			64	269	68	294	132	563
04:00			1		2		3		16:00			40		57		97	
04:15			0		7		7		16:15			58		55		113	
04:30			1		8		9		16:30			55		44		99	
04:45			4	6	9	26	13	32	16:45			55	208	48	204	103	412
05:00			5		5		10		17:00			70		61		131	
05:15			8		12		20		17:15			60		67		127	
05:30			5		8		13		17:30			55		44		99	
05:45			7	25	13	38	20	63	17:45			45	230	39	211	84	441
06:00			6		19		25		18:00			34		29		63	
06:15			18		25		43		18:15			33		42		75	
06:30			15		30		45		18:30			37		26		63	
06:45			23	62	39	113	62	175	18:45			27	131	34	131	61	262
07:00			29		29		58		19:00			20		37		57	
07:15			33		48		81		19:15			27		30		57	
07:30			39		58		97		19:30			23		24		47	
07:45			52	153	78	213	130	366	19:45			26	96	26	117	52	213
08:00			86		70		156		20:00			16		25		41	
08:15			91		64		155		20:15			17		28		45	
08:30			68		93		161		20:30			16		14		30	
08:45			67	312	73	300	140	612	20:45			24	73	7	74	31	147
09:00			33		58		91		21:00			20		11		31	
09:15			47		57		104		21:15			12		11		23	
09:30			38		37		75		21:30			8		8		16	
09:45			38	156	46	198	84	354	21:45			15	55	2	32	17	87
10:00			29		42		71		22:00			9		7		16	
10:15			42		55		97		22:15			10		7		17	
10:30			41		43		84		22:30			7		2		9	
10:45			35	147	43	183	78	330	22:45			10	36	3	19	13	55
11:00			34		39		73		23:00			4		6		10	
11:15			41		41		82		23:15			4		2		6	
11:30			40		49		89		23:30			4		8		12	
11:45			36	151	29	158	65	309	23:45			2	14	2	18	4	32
TOTALS				1031		1255		2286	TOTALS				1719		1677		3396
SPLIT %				45.1%		54.9%		40.2%	SPLIT %				50.6%		49.4%		59.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	2,750	2,932	5,682

AM Peak Hour				08:00	07:45	08:00		PM Peak Hour				14:15	15:00	14:45
AM Pk Volume				312	305	612		PM Pk Volume				316	294	573
Pk Hr Factor				0.857	0.820	0.950		Pk Hr Factor				0.878	0.817	0.805
7 - 9 Volume	0	0		465	513	978		4 - 6 Volume	0	0		438	415	853
7 - 9 Peak Hour				08:00	07:45	08:00		4 - 6 Peak Hour				16:30	16:30	16:30
7 - 9 Pk Volume	0	0		312	305	612		4 - 6 Pk Volume	0	0		240	220	460
Pk Hr Factor	0.000	0.000		0.857	0.820	0.950		Pk Hr Factor	0.000	0.000		0.857	0.821	0.878

Prepared by National Data & Surveying Services

VOLUME

Empire St Bet. Auburn St & SR 49

Day: Thursday
Date: 8/29/2019

City: Grass Valley
Project #: CA19_7289_007

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	2,666	2,919	5,585

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			2		1		3		12:00			31		46		77	
00:15			1		2		3		12:15			38		39		77	
00:30			1		2		3		12:30			36		60		96	
00:45			2	6	2	7	4	13	12:45			27	132	58	203	85	335
01:00			0		1		1		13:00			45		49		94	
01:15			0		0		0		13:15			35		57		92	
01:30			2		3		5		13:30			37		43		80	
01:45			2	4	1	5	3	9	13:45			54	171	50	199	104	370
02:00			2		1		3		14:00			47		41		88	
02:15			0		1		1		14:15			59		52		111	
02:30			0		0		0		14:30			43		70		113	
02:45			0	2	0	2	0	4	14:45			85	234	50	213	135	447
03:00			1		0		1		15:00			65		71		136	
03:15			0		1		1		15:15			62		75		137	
03:30			2		1		3		15:30			64		55		119	
03:45			0	3	1	3	1	6	15:45			58	249	73	274	131	523
04:00			2		4		6		16:00			64		62		126	
04:15			3		7		10		16:15			53		63		116	
04:30			1		7		8		16:30			65		51		116	
04:45			1	7	11	29	12	36	16:45			58	240	49	225	107	465
05:00			2		6		8		17:00			65		49		114	
05:15			2		8		10		17:15			49		61		110	
05:30			5		14		19		17:30			54		38		92	
05:45			12	21	9	37	21	58	17:45			53	221	43	191	96	412
06:00			11		20		31		18:00			36		39		75	
06:15			14		22		36		18:15			25		30		55	
06:30			15		32		47		18:30			39		27		66	
06:45			19	59	34	108	53	167	18:45			39	139	28	124	67	263
07:00			24		39		63		19:00			26		42		68	
07:15			36		38		74		19:15			29		19		48	
07:30			31		41		72		19:30			22		25		47	
07:45			44	135	81	199	125	334	19:45			15	92	26	112	41	204
08:00			86		60		146		20:00			21		17		38	
08:15			96		70		166		20:15			16		28		44	
08:30			59		96		155		20:30			22		18		40	
08:45			72	313	100	326	172	639	20:45			21	80	16	79	37	159
09:00			34		43		77		21:00			17		10		27	
09:15			37		58		95		21:15			16		11		27	
09:30			35		39		74		21:30			8		9		17	
09:45			31	137	43	183	74	320	21:45			12	53	14	44	26	97
10:00			29		41		70		22:00			10		10		20	
10:15			44		43		87		22:15			7		4		11	
10:30			30		28		58		22:30			9		6		15	
10:45			40	143	38	150	78	293	22:45			6	32	5	25	11	57
11:00			40		32		72		23:00			5		3		8	
11:15			44		43		87		23:15			4		4		8	
11:30			54		38		92		23:30			7		4		11	
11:45			37	175	54	167	91	342	23:45			2	18	3	14	5	32
TOTALS				1005		1216		2221	TOTALS				1661		1703		3364
SPLIT %				45.2%		54.8%		39.8%	SPLIT %				49.4%		50.6%		60.2%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	2,666	2,919	5,585

AM Peak Hour				08:00	08:00	08:00	PM Peak Hour				14:45	15:00	14:45
AM Pk Volume				313	326	639	PM Pk Volume				276	274	527
Pk Hr Factor				0.815	0.815	0.929	Pk Hr Factor				0.812	0.913	0.962
7 - 9 Volume	0	0		448	525	973	4 - 6 Volume	0	0		461	416	877
7 - 9 Peak Hour				08:00	08:00	08:00	4 - 6 Peak Hour				16:15	16:00	16:00
7 - 9 Pk Volume	0	0		313	326	639	4 - 6 Pk Volume	0	0		241	225	465
Pk Hr Factor	0.000	0.000		0.815	0.815	0.929	Pk Hr Factor	0.000	0.000		0.927	0.893	0.923

Prepared by National Data & Surveying Services

VOLUME

Idaho Maryland Rd Bet. Brunswick Rd & SR 49

Day: Tuesday
Date: 8/27/2019

City: Grass Valley
Project #: CA19_7289_008

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	3,685	3,617	7,302

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			2		3		5		12:00			94		92		186	
00:15			2		1		3		12:15			79		84		163	
00:30			1		1		2		12:30			86		71		157	
00:45			2	7	2	7	4	14	12:45			63	322	73	320	136	642
01:00			0		0		0		13:00			67		73		140	
01:15			0		0		0		13:15			81		69		150	
01:30			1		1		2		13:30			68		81		149	
01:45			2	3	2	3	4	6	13:45			75	291	61	284	136	575
02:00			0		2		2		14:00			63		72		135	
02:15			1		0		1		14:15			71		59		130	
02:30			2		2		4		14:30			82		71		153	
02:45			2	5	1	5	3	10	14:45			71	287	84	286	155	573
03:00			0		2		2		15:00			102		92		194	
03:15			2		0		2		15:15			88		81		169	
03:30			2		0		2		15:30			88		89		177	
03:45			3	7	1	3	4	10	15:45			73	351	96	358	169	709
04:00			1		5		6		16:00			76		114		190	
04:15			4		2		6		16:15			79		79		158	
04:30			5		2		7		16:30			65		99		164	
04:45			3	13	4	13	7	26	16:45			78	298	66	358	144	656
05:00			4		8		12		17:00			86		104		190	
05:15			13		13		26		17:15			59		78		137	
05:30			13		11		24		17:30			66		69		135	
05:45			26	56	13	45	39	101	17:45			40	251	54	305	94	556
06:00			19		8		27		18:00			57		49		106	
06:15			21		23		44		18:15			43		42		85	
06:30			22		20		42		18:30			34		29		63	
06:45			58	120	44	95	102	215	18:45			30	164	18	138	48	302
07:00			28		32		60		19:00			35		29		64	
07:15			48		29		77		19:15			38		22		60	
07:30			45		50		95		19:30			26		19		45	
07:45			69	190	62	173	131	363	19:45			18	117	21	91	39	208
08:00			40		60		100		20:00			35		32		67	
08:15			79		46		125		20:15			10		20		30	
08:30			61		63		124		20:30			14		19		33	
08:45			60	240	63	232	123	472	20:45			14	73	22	93	36	166
09:00			48		54		102		21:00			13		20		33	
09:15			61		42		103		21:15			9		8		17	
09:30			58		53		111		21:30			7		13		20	
09:45			56	223	68	217	124	440	21:45			13	42	7	48	20	90
10:00			62		45		107		22:00			11		8		19	
10:15			70		60		130		22:15			7		7		14	
10:30			66		62		128		22:30			5		8		13	
10:45			73	271	58	225	131	496	22:45			9	32	13	36	22	68
11:00			84		69		153		23:00			1		6		7	
11:15			76		62		138		23:15			1		4		5	
11:30			81		73		154		23:30			2		1		3	
11:45			76	317	65	269	141	586	23:45			1	5	2	13	3	18
TOTALS			1452		1287		2739		TOTALS			2233		2330		4563	
SPLIT %			53.0%		47.0%		37.5%		SPLIT %			48.9%		51.1%		62.5%	

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	3,685	3,617	7,302

AM Peak Hour				11:45	11:30	11:45		PM Peak Hour				15:00	15:45	15:00
AM Pk Volume				335	314	647		PM Pk Volume				351	388	709
Pk Hr Factor				0.891	0.853	0.870		Pk Hr Factor				0.860	0.851	0.914
7 - 9 Volume	0	0		430	405	835		4 - 6 Volume	0	0		549	663	1212
7 - 9 Peak Hour				07:45	08:00	07:45		4 - 6 Peak Hour				16:15	16:00	16:00
7 - 9 Pk Volume	0	0		249	232	480		4 - 6 Pk Volume	0	0		308	358	656
Pk Hr Factor	0.000	0.000		0.788	0.921	0.916		Pk Hr Factor	0.000	0.000		0.895	0.785	0.863

Prepared by National Data & Surveying Services

VOLUME

Idaho Maryland Rd Bet. Brunswick Rd & SR 49

Day: Wednesday
Date: 8/28/2019

City: Grass Valley
Project #: CA19_7289_008

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	3,742	3,638	7,380

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			1		1		2		**12:00**			95		74		169	
00:15			4		2		6		**12:15**			84		87		171	
00:30			0		1		1		**12:30**			91		66		157	
00:45			4	9	0	4	4	13	**12:45**			98	368	96	323	194	691
01:00			0		1		1		**13:00**			77		82		159	
01:15			0		0		0		**13:15**			90		85		175	
01:30			3		0		3		**13:30**			79		66		145	
01:45			0	3	0	1	0	4	**13:45**			103	349	64	297	167	646
02:00			0		1		1		**14:00**			73		68		141	
02:15			3		1		4		**14:15**			70		72		142	
02:30			1		3		4		**14:30**			85		76		161	
02:45			1	5	0	5	1	10	**14:45**			69	297	90	306	159	603
03:00			0		2		2		**15:00**			65		67		132	
03:15			1		0		1		**15:15**			87		79		166	
03:30			4		2		6		**15:30**			76		109		185	
03:45			4	9	0	4	4	13	**15:45**			73	301	89	344	162	645
04:00			1		2		3		**16:00**			63		77		140	
04:15			6		0		6		**16:15**			76		65		141	
04:30			7		2		9		**16:30**			78		91		169	
04:45			4	18	5	9	9	27	**16:45**			73	290	68	301	141	591
05:00			3		4		7		**17:00**			64		99		163	
05:15			11		15		26		**17:15**			54		76		130	
05:30			10		12		22		**17:30**			61		61		122	
05:45			26	50	17	48	43	98	**17:45**			67	246	52	288	119	534
06:00			9		11		20		**18:00**			56		51		107	
06:15			12		24		36		**18:15**			43		46		89	
06:30			39		21		60		**18:30**			41		56		97	
06:45			59	119	35	91	94	210	**18:45**			30	170	39	192	69	362
07:00			32		29		61		**19:00**			28		26		54	
07:15			38		33		71		**19:15**			37		26		63	
07:30			45		45		90		**19:30**			18		37		55	
07:45			65	180	54	161	119	341	**19:45**			22	105	15	104	37	209
08:00			53		59		112		**20:00**			21		20		41	
08:15			68		60		128		**20:15**			19		22		41	
08:30			65		68		133		**20:30**			15		14		29	
08:45			68	254	69	256	137	510	**20:45**			7	62	24	80	31	142
09:00			62		59		121		**21:00**			12		17		29	
09:15			69		52		121		**21:15**			9		11		20	
09:30			61		66		127		**21:30**			3		6		9	
09:45			83	275	56	233	139	508	**21:45**			8	32	1	35	9	67
10:00			70		62		132		**22:00**			4		9		13	
10:15			60		44		104		**22:15**			6		6		12	
10:30			66		54		120		**22:30**			4		7		11	
10:45			68	264	53	213	121	477	**22:45**			2	16	1	23	3	39
11:00			94		72		166		**23:00**			1		5		6	
11:15			82		72		154		**23:15**			1		5		6	
11:30			79		81		160		**23:30**			0		1		1	
11:45			61	316	82	307	143	623	**23:45**			2	4	2	13	4	17
TOTALS				1502		1332		**2834**	**TOTALS**				2240		2306		**4546**
SPLIT %				53.0%		47.0%		**38.4%**	**SPLIT %**				49.3%		50.7%		**61.6%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	3,742	3,638	7,380

AM Peak Hour				11:45	11:30	**11:30**		**PM Peak Hour**				12:00	15:15	**12:00**
AM Pk Volume				331	324	**643**		**PM Pk Volume**				368	354	**691**
Pk Hr Factor				0.871	0.931	**0.940**		**Pk Hr Factor**				0.939	0.812	**0.890**
7 - 9 Volume	0	0		434	417	**851**		**4 - 6 Volume**	0	0		536	589	**1125**
7 - 9 Peak Hour				08:00	08:00	**08:00**		**4 - 6 Peak Hour**				16:15	16:30	**16:15**
7 - 9 Pk Volume	0	0		254	256	**510**		**4 - 6 Pk Volume**	0	0		291	334	**614**
Pk Hr Factor	0.000	0.000		0.934	0.928	**0.931**		**Pk Hr Factor**	0.000	0.000		0.933	0.843	**0.908**

Prepared by National Data & Surveying Services

VOLUME

Idaho Maryland Rd Bet. Brunswick Rd & SR 49

Day: Thursday
Date: 8/29/2019

City: Grass Valley
Project #: CA19_7289_008

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	3,690	3,672	7,362

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			4		1		5		12:00			73		65		138	
00:15			1		3		4		12:15			89		91		180	
00:30			3		0		3		12:30			65		79		144	
00:45			2	10	0	4	2	14	12:45			73	300	69	304	142	604
01:00			3		0		3		13:00			71		89		160	
01:15			1		0		1		13:15			81		71		152	
01:30			0		2		2		13:30			79		54		133	
01:45			0	4	0	2	0	6	13:45			95	326	66	280	161	606
02:00			1		0		1		14:00			72		61		133	
02:15			1		2		3		14:15			76		81		157	
02:30			3		1		4		14:30			63		64		127	
02:45			1	6	0	3	1	9	14:45			69	280	70	276	139	556
03:00			0		0		0		15:00			76		85		161	
03:15			2		2		4		15:15			80		74		154	
03:30			1		2		3		15:30			77		106		183	
03:45			4	7	1	5	5	12	15:45			84	317	102	367	186	684
04:00			1		1		2		16:00			80		83		163	
04:15			3		5		8		16:15			81		84		165	
04:30			7		5		12		16:30			79		108		187	
04:45			2	13	2	13	4	26	16:45			75	315	77	352	152	667
05:00			6		2		8		17:00			88		85		173	
05:15			7		21		28		17:15			77		99		176	
05:30			10		9		19		17:30			64		55		119	
05:45			16	39	14	46	30	85	17:45			52	281	42	281	94	562
06:00			10		18		28		18:00			49		35		84	
06:15			16		15		31		18:15			39		29		68	
06:30			40		23		63		18:30			38		43		81	
06:45			61	127	30	86	91	213	18:45			36	162	38	145	74	307
07:00			26		39		65		19:00			23		37		60	
07:15			43		34		77		19:15			30		37		67	
07:30			50		48		98		19:30			20		45		65	
07:45			66	185	59	180	125	365	19:45			22	95	23	142	45	237
08:00			68		59		127		20:00			29		33		62	
08:15			68		62		130		20:15			13		17		30	
08:30			61		58		119		20:30			11		23		34	
08:45			71	268	72	251	143	519	20:45			13	66	20	93	33	159
09:00			62		61		123		21:00			13		14		27	
09:15			61		43		104		21:15			10		11		21	
09:30			55		54		109		21:30			7		11		18	
09:45			72	250	70	228	142	478	21:45			11	41	10	46	21	87
10:00			61		60		121		22:00			6		7		13	
10:15			50		52		102		22:15			4		9		13	
10:30			85		68		153		22:30			4		2		6	
10:45			72	268	76	256	148	524	22:45			3	17	2	20	5	37
11:00			80		73		153		23:00			1		9		10	
11:15			70		65		135		23:15			2		3		5	
11:30			79		58		137		23:30			0		2		2	
11:45			79	308	80	276	159	584	23:45			2	5	2	16	4	21
TOTALS				1485		1350		2835	TOTALS				2205		2322		4527
SPLIT %				52.4%		47.6%		38.5%	SPLIT %				48.7%		51.3%		61.5%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	3,690	3,672	7,362

AM Peak Hour				11:30	11:45	11:45		PM Peak Hour				13:15	15:45	15:45
AM Pk Volume				320	315	621		PM Pk Volume				327	377	701
Pk Hr Factor				0.899	0.865	0.863		Pk Hr Factor				0.861	0.873	0.937
7 - 9 Volume	0	0		453	431	884		4 - 6 Volume	0	0		596	633	1229
7 - 9 Peak Hour				08:00	08:00	08:00		4 - 6 Peak Hour				16:15	16:30	16:30
7 - 9 Pk Volume	0	0		268	251	519		4 - 6 Pk Volume	0	0		323	369	688
Pk Hr Factor	0.000	0.000		0.944	0.872	0.907		Pk Hr Factor	0.000	0.000		0.918	0.854	0.920

TECHNICAL LOS APPENDIX III

FOR

IDAHO-MARYLAND MINE PROJECT
TRAFFIC IMPACT ANALYSIS

Nevada County, CA

LEVEL OF SERVICE CALCULATIONS AND QUEUING

Prepared For:

Rise Grass Valley Inc.

Prepared By:

KD Anderson & Associates, Inc.
3853 Taylor Road, Suite G
Loomis, CA 95650
(916) 660-1555

April 8, 2021

LEVEL OF SERVICE CALCULATIONS AND QUEUING

EXISTING

EXISTING PLUS APPROVED PROJECT (EPAP)

EPAP PLUS PROJECT – CENTENNIAL

EPAP PLUS PROJECT – SR 49

CUMULATIVE

CUMULATIVE PLUS PROJECT – CENTENNIAL

CUMULATIVE PLUS PROJECT – SR 49

KDA

Intersection	
Intersection Delay, s/veh	19
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	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	63	344	4	0	0	0	0	192	265	158	258	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	14.7	27.2	14.3
HCM LOS	B	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	457	235	176	158	258
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.775	0.461	0.339	0.311	0.471
Departure Headway (Hd)	6.107	7.076	6.922	7.082	6.571
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	590	507	519	506	545
Service Time	4.165	4.841	4.687	4.853	4.342
HCM Lane V/C Ratio	0.775	0.464	0.339	0.312	0.473
HCM Control Delay	27.2	15.8	13.2	13	15.1
HCM Lane LOS	D	C	B	B	C
HCM 95th-tile Q	7.2	2.4	1.5	1.3	2.5

Intersection	
Intersection Delay, s/veh	20.1
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	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	285	39	41	351	288	456
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	19.8	15	23
HCM LOS	C	B	C

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	288	456	324	158	234
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.577	0.758	0.607	0.319	0.464
Departure Headway (Hd)	7.204	5.984	6.754	7.278	7.146
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	499	602	534	492	502
Service Time	4.969	3.748	4.817	5.054	4.921
HCM Lane V/C Ratio	0.577	0.757	0.607	0.321	0.466
HCM Control Delay	19.4	25.2	19.8	13.5	16
HCM Lane LOS	C	D	C	B	C
HCM 95th-tile Q	3.6	6.8	4	1.4	2.4

Intersection	
Intersection Delay, s/veh	12.2
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	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	581	128	23	301	86	32
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	13.2	10.5	10.4
HCM LOS	B	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	118	387	322	124	201
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.194	0.561	0.441	0.195	0.311
Departure Headway (Hd)	5.916	5.21	4.929	5.679	5.585
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	601	686	725	626	638
Service Time	4.006	2.981	2.7	3.47	3.375
HCM Lane V/C Ratio	0.196	0.564	0.444	0.198	0.315
HCM Control Delay	10.4	14.5	11.6	9.9	10.9
HCM Lane LOS	B	B	B	A	B
HCM 95th-tile Q	0.7	3.5	2.3	0.7	1.3

Intersection	
Int Delay, s/veh	11.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	158	61	0	103	209	449	18	37	311	8
Future Vol, veh/h	0	0	158	61	0	103	209	449	18	37	311	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	550	-	-	120	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	168	65	0	110	222	478	19	39	331	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	1350	331	1430	1350	488	340	0	0	497	0	0
Stage 1	-	409	-	932	932	-	-	-	-	-	-	-
Stage 2	-	941	-	498	418	-	-	-	-	-	-	-
Critical Hdwy	-	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	-	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	150	711	112	150	580	1219	-	-	1067	-	-
Stage 1	0	596	-	320	345	-	-	-	-	-	-	-
Stage 2	0	342	-	554	591	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	118	711	72	118	580	1219	-	-	1067	-	-
Mov Cap-2 Maneuver	-	118	-	72	118	-	-	-	-	-	-	-
Stage 1	-	574	-	262	282	-	-	-	-	-	-	-
Stage 2	-	280	-	408	569	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.6	73.7	2.7	0.9
HCM LOS	B	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1219	-	-	711	72	580	1067	-	-
HCM Lane V/C Ratio	0.182	-	-	0.236	0.901	0.189	0.037	-	-
HCM Control Delay (s)	8.6	-	-	11.6	176.9	12.6	8.5	-	-
HCM Lane LOS	A	-	-	B	F	B	A	-	-
HCM 95th %tile Q(veh)	0.7	-	-	0.9	4.5	0.7	0.1	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	44	64	657	426	86
Future Vol, veh/h	21	44	64	657	426	86
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	49	71	730	473	96

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1393	285	569	0	-	0
Stage 1	521	-	-	-	-	-
Stage 2	872	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	144	713	1001	-	-	-
Stage 1	562	-	-	-	-	-
Stage 2	408	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	134	713	1001	-	-	-
Mov Cap-2 Maneuver	328	-	-	-	-	-
Stage 1	522	-	-	-	-	-
Stage 2	408	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.5	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1001	-	328	713	-	-
HCM Lane V/C Ratio	0.071	-	0.071	0.069	-	-
HCM Control Delay (s)	8.9	-	16.8	10.4	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.2	0.2	-	-

Intersection	
Intersection Delay, s/veh	23.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	21	12	25	45	171	20	475	12	51	191	26
Future Vol, veh/h	29	21	12	25	45	171	20	475	12	51	191	26
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	23	13	27	48	184	22	511	13	55	205	28
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	11.1	13.6	35.7	12.8
HCM LOS	B	B	E	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	47%	10%	100%	0%
Vol Thru, %	0%	98%	34%	19%	0%	88%
Vol Right, %	0%	2%	19%	71%	0%	12%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	20	487	62	241	51	217
LT Vol	20	0	29	25	51	0
Through Vol	0	475	21	45	0	191
RT Vol	0	12	12	171	0	26
Lane Flow Rate	22	524	67	259	55	233
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.039	0.873	0.13	0.431	0.105	0.408
Departure Headway (Hd)	6.525	6	7.032	5.989	6.892	6.296
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	546	602	513	596	516	567
Service Time	4.297	3.771	5.032	4.086	4.684	4.087
HCM Lane V/C Ratio	0.04	0.87	0.131	0.435	0.107	0.411
HCM Control Delay	9.6	36.8	11.1	13.6	10.5	13.4
HCM Lane LOS	A	E	B	B	B	B
HCM 95th-tile Q	0.1	10	0.4	2.2	0.3	2

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	110	160	263	381	141	97
Future Vol, veh/h	110	160	263	381	141	97
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	117	170	280	405	150	103

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	280	0	-	0	684	280
Stage 1	-	-	-	-	280	-
Stage 2	-	-	-	-	404	-
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	1283	-	-	0	414	759
Stage 1	-	-	-	0	767	-
Stage 2	-	-	-	0	674	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1283	-	-	-	376	759
Mov Cap-2 Maneuver	-	-	-	-	376	-
Stage 1	-	-	-	-	697	-
Stage 2	-	-	-	-	674	-

Approach	EB	WB	SB
HCM Control Delay, s	3.3	0	16.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1283	-	-	376	759
HCM Lane V/C Ratio	0.091	-	-	0.399	0.136
HCM Control Delay (s)	8.1	-	-	20.8	10.5
HCM Lane LOS	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	-	-	1.9	0.5

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	507	228	0
Future Vol, veh/h	0	0	0	507	228	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	528	238	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	766	238	238	0	-	0
Stage 1	238	-	-	-	-	-
Stage 2	528	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	371	801	1329	-	-	-
Stage 1	802	-	-	-	-	-
Stage 2	592	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	371	801	1329	-	-	-
Mov Cap-2 Maneuver	531	-	-	-	-	-
Stage 1	802	-	-	-	-	-
Stage 2	592	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1329	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	62	0	0	91	0	0
Future Vol, veh/h	62	0	0	91	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	67	0	0	99	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	67	0	166	67
Stage 1	-	-	-	-	67	-
Stage 2	-	-	-	-	99	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1535	-	824	997
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	925	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1535	-	824	997
Mov Cap-2 Maneuver	-	-	-	-	824	-
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	925	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1535	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	306	0	0	103	0	0	0	0	2	0	0
Future Vol, veh/h	0	306	0	0	103	0	0	0	0	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	364	0	0	123	0	0	0	0	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	123	0	0	364	0	0	487	487	364	487	487	123
Stage 1	-	-	-	-	-	-	364	364	-	123	123	-
Stage 2	-	-	-	-	-	-	123	123	-	364	364	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1464	-	-	1195	-	-	491	481	681	491	481	928
Stage 1	-	-	-	-	-	-	655	624	-	881	794	-
Stage 2	-	-	-	-	-	-	881	794	-	655	624	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1464	-	-	1195	-	-	491	481	681	491	481	928
Mov Cap-2 Maneuver	-	-	-	-	-	-	491	481	-	491	481	-
Stage 1	-	-	-	-	-	-	655	624	-	881	794	-
Stage 2	-	-	-	-	-	-	881	794	-	655	624	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	12.4
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1464	-	-	1195	-	-	491
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.005
HCM Control Delay (s)	0	0	-	-	0	-	-	12.4
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	200	232	21	180	71	11
Future Vol, veh/h	200	232	21	180	71	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	206	239	22	186	73	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	445	0	436	206
Stage 1	-	-	-	-	206	-
Stage 2	-	-	-	-	230	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1115	-	578	835
Stage 1	-	-	-	-	829	-
Stage 2	-	-	-	-	808	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1115	-	566	835
Mov Cap-2 Maneuver	-	-	-	-	566	-
Stage 1	-	-	-	-	829	-
Stage 2	-	-	-	-	792	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	12.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	592	-	-	1115	-
HCM Lane V/C Ratio	0.143	-	-	0.019	-
HCM Control Delay (s)	12.1	-	-	8.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	100	101	101	88	38	94
Future Vol, veh/h	100	101	101	88	38	94
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	118	119	119	104	45	111
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	9.8	8.9	8.7
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	50%	0%	100%	0%
Vol Thru, %	50%	53%	0%	0%
Vol Right, %	0%	47%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	201	189	38	94
LT Vol	100	0	38	0
Through Vol	101	101	0	0
RT Vol	0	88	0	94
Lane Flow Rate	236	222	45	111
Geometry Grp	2	2	7	7
Degree of Util (X)	0.306	0.267	0.075	0.149
Departure Headway (Hd)	4.663	4.32	6.061	4.851
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	771	832	590	737
Service Time	2.697	2.352	3.807	2.597
HCM Lane V/C Ratio	0.306	0.267	0.076	0.151
HCM Control Delay	9.8	8.9	9.3	8.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.3	1.1	0.2	0.5

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	91	52	84	84	84	71
Future Vol, veh/h	91	52	84	84	84	71
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	101	58	93	93	93	79
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8.9	9.3	8.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	50%	64%	0%	0%
Vol Thru, %	50%	0%	100%	0%
Vol Right, %	0%	36%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	168	143	84	71
LT Vol	84	91	0	0
Through Vol	84	0	84	0
RT Vol	0	52	0	71
Lane Flow Rate	187	159	93	79
Geometry Grp	5	2	7	7
Degree of Util (X)	0.244	0.206	0.132	0.096
Departure Headway (Hd)	4.713	4.668	5.084	4.379
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	762	769	706	818
Service Time	2.741	2.695	2.811	2.106
HCM Lane V/C Ratio	0.245	0.207	0.132	0.097
HCM Control Delay	9.3	8.9	8.6	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1	0.8	0.5	0.3

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	59	197	587	147	299	233
v/c Ratio	0.25	0.29	0.78	0.20	0.66	0.15
Control Delay	31.8	5.8	26.3	3.9	30.6	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.8	5.8	26.3	3.9	30.6	2.9
Queue Length 50th (ft)	24	14	213	0	120	23
Queue Length 95th (ft)	59	50	#422	33	212	49
Internal Link Dist (ft)	770		615			753
Turn Bay Length (ft)	165			405	410	
Base Capacity (vph)	451	816	1017	929	636	1531
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.24	0.58	0.16	0.47	0.15

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	54	181	540	135	275	214
Future Volume (veh/h)	54	181	540	135	275	214
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	59	197	587	147	299	233
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	236	531	697	591	361	1238
Arrive On Green	0.14	0.14	0.38	0.38	0.21	0.68
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	59	197	587	147	299	233
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	1.7	5.5	16.8	3.7	9.5	2.7
Cycle Q Clear(g_c), s	1.7	5.5	16.8	3.7	9.5	2.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	236	531	697	591	361	1238
V/C Ratio(X)	0.25	0.37	0.84	0.25	0.83	0.19
Avail Cap(c_a), veh/h	427	701	960	813	602	1564
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	1.00
Uniform Delay (d), s/veh	22.2	14.2	16.2	12.1	21.8	3.4
Incr Delay (d2), s/veh	0.5	0.4	5.0	0.2	4.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.8	6.4	1.1	3.8	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.7	14.6	21.2	12.4	26.7	3.5
LnGrp LOS	C	B	C	B	C	A
Approach Vol, veh/h	256		734			532
Approach Delay, s/veh	16.5		19.5			16.5
Approach LOS	B		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	17.0	27.7			44.7	12.7
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	11.5	18.8			4.7	7.5
Green Ext Time (p_c), s	0.6	3.1			1.3	0.4

Intersection Summary	
HCM 6th Ctrl Delay	17.9
HCM 6th LOS	B

1: Tinloy St /Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.3	0.0	0.1
Total Del/Veh (s)	9.1	28.6	6.4	14.5

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	1.3	0.0	0.6
Total Del/Veh (s)	5.4	9.1	16.5	10.4

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.3	0.2
Total Del/Veh (s)	8.4	9.2	1.2	6.2

8: Main St & Maltman Dr/Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.6	1.8	1.0
Total Del/Veh (s)	14.2	8.0	11.6	12.3	10.4

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.4	2.8	0.8
Total Del/Veh (s)	9.7	12.4	13.5	34.6	17.5

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.2	6.8	23.8	12.0

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.5	1.5	0.0	0.3
Total Del/Veh (s)	10.4	17.9	16.1	4.8	11.8

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	1.0	0.6
Total Del/Veh (s)	15.2	17.0	10.2	12.6

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.8	0.0	0.1	0.5
Total Del/Veh (s)	8.1	5.1	8.7	6.5

Total Zone Performance

Denied Del/Veh (s)	1.1
Total Del/Veh (s)	273.6

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	106	325	117	89
Average Queue (ft)	70	130	53	33
95th Queue (ft)	115	265	98	68
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	5			
Queuing Penalty (veh)	15			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	128	123	195	121	106
Average Queue (ft)	56	41	84	72	49
95th Queue (ft)	99	93	153	115	92
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	0			4	1
Queuing Penalty (veh)	1			6	1
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	3		
Queuing Penalty (veh)		0	8		

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	114	108	35	80	28
Average Queue (ft)	62	51	11	42	2
95th Queue (ft)	96	83	35	65	13
Link Distance (ft)	1196	1196		262	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	

Intersection: 8: Main St & Maltman Dr/Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	T	R	L	L	T
Maximum Queue (ft)	44	107	113	121	139	101	79	137	123
Average Queue (ft)	19	42	51	48	59	40	27	64	51
95th Queue (ft)	44	82	91	95	107	76	63	111	100
Link Distance (ft)	777	160	160	160	1486				1622
Upstream Blk Time (%)		0	0	0					
Queuing Penalty (veh)		0	0	0					
Storage Bay Dist (ft)						115	360	360	
Storage Blk Time (%)					1	0			
Queuing Penalty (veh)					1	0			

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	136	162	101	170	164	64	90	151	178	85	90
Average Queue (ft)	48	73	60	58	67	18	43	67	108	30	42
95th Queue (ft)	109	145	99	134	139	50	74	135	167	69	76
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	0	0	1	2	2						
Queuing Penalty (veh)	0	1	0	6	7						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			1	2		0	0				
Queuing Penalty (veh)			3	2		0	0				

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	<	R	T
Maximum Queue (ft)	96	101	84	124	216	218	254
Average Queue (ft)	30	31	17	22	147	119	34
95th Queue (ft)	74	77	59	84	221	209	152
Link Distance (ft)	456	456	334	334	145	145	915
Upstream Blk Time (%)				0	14	7	
Queuing Penalty (veh)				0	0	0	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	84	102	123	138	117	108	153	200	48	114	94	76
Average Queue (ft)	34	55	57	74	56	47	67	104	16	53	33	32
95th Queue (ft)	72	90	102	116	96	87	121	175	42	94	72	65
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)						0	1					
Queuing Penalty (veh)						0	1					

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	77
Average Queue (ft)	32
95th Queue (ft)	66
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	131	118	34	63	77	94	252	84
Average Queue (ft)	48	49	5	25	32	16	114	16
95th Queue (ft)	99	98	21	51	61	59	204	55
Link Distance (ft)	211	211		1564	1564		800	
Upstream Blk Time (%)	0							
Queuing Penalty (veh)	0							
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)							0	
Queuing Penalty (veh)							1	

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	126	72	72	143	154	75	84
Average Queue (ft)	51	23	23	51	48	28	41
95th Queue (ft)	102	51	58	106	113	62	70
Link Distance (ft)	548		211	211	211	1120	1120
Upstream Blk Time (%)				0			
Queuing Penalty (veh)				0			
Storage Bay Dist (ft)		155					
Storage Blk Time (%)	0						
Queuing Penalty (veh)	0						

Zone Summary

Zone wide Queuing Penalty: 53

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

AM Peak
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	30	3.0	0.233	7.4	LOS A	1.0	25.5	0.60	0.58	0.60	33.5
8	T1	63	3.0	0.233	7.4	LOS A	1.0	25.5	0.60	0.58	0.60	33.4
18	R2	82	3.0	0.233	7.4	LOS A	1.0	25.5	0.60	0.58	0.60	32.5
Approach		176	3.0	0.233	7.4	LOS A	1.0	25.5	0.60	0.58	0.60	33.0
East: Idaho Maryland Rd												
1	L2	208	3.0	0.213	5.8	LOS A	0.9	22.9	0.48	0.39	0.48	32.2
6	T1	133	3.0	0.413	8.3	LOS A	2.1	53.0	0.57	0.50	0.57	33.4
16	R2	270	3.0	0.413	8.3	LOS A	2.1	53.0	0.57	0.50	0.57	32.3
Approach		611	3.0	0.413	7.4	LOS A	2.1	53.0	0.54	0.46	0.54	32.5
North: Main St												
7	L2	126	3.0	0.310	6.8	LOS A	1.3	34.3	0.49	0.42	0.49	33.2
4	T1	183	3.0	0.310	6.8	LOS A	1.3	34.3	0.49	0.42	0.49	33.2
14	R2	207	3.0	0.127	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		516	3.0	0.310	4.1	LOS A	1.3	34.3	0.29	0.25	0.29	34.6
West: Main St												
5	L2	276	3.0	0.499	10.6	LOS B	3.3	83.8	0.65	0.75	0.92	31.0
2	T1	148	3.0	0.499	10.6	LOS B	3.3	83.8	0.65	0.75	0.92	30.9
12	R2	14	3.0	0.499	10.6	LOS B	3.3	83.8	0.65	0.75	0.92	30.1
Approach		438	3.0	0.499	10.6	LOS B	3.3	83.8	0.65	0.75	0.92	30.9
All Vehicles		1740	3.0	0.499	7.2	LOS A	3.3	83.8	0.50	0.49	0.57	32.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection	
Intersection Delay, s/veh	15.4
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	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	67	313	1	0	0	0	0	132	161	190	353	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	13.8	15.3	16.5
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	293	223	158	190	353
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.502	0.43	0.297	0.355	0.61
Departure Headway (Hd)	6.157	6.925	6.768	6.725	6.217
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	584	520	530	534	579
Service Time	4.207	4.678	4.521	4.477	3.969
HCM Lane V/C Ratio	0.502	0.429	0.298	0.356	0.61
HCM Control Delay	15.3	14.8	12.4	13.2	18.3
HCM Lane LOS	C	B	B	B	C
HCM 95th-tile Q	2.8	2.1	1.2	1.6	4.1

Intersection	
Intersection Delay, s/veh	23.8
Intersection LOS	C

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	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	207	41	62	766	188	217
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	14.7	31.2	14.3
HCM LOS	B	D	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	188	217	248	317	510
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.401	0.389	0.447	0.561	0.888
Departure Headway (Hd)	7.69	6.467	6.492	6.361	6.261
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	468	555	555	565	577
Service Time	5.448	4.224	4.544	4.113	4.013
HCM Lane V/C Ratio	0.402	0.391	0.447	0.561	0.884
HCM Control Delay	15.5	13.3	14.7	17	40
HCM Lane LOS	C	B	B	C	E
HCM 95th-tile Q	1.9	1.8	2.3	3.4	10.4

Intersection	
Intersection Delay, s/veh	16.3
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	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	420	83	26	723	107	34
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	12.6	19.6	11.7
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	141	280	223	267	482
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.253	0.46	0.35	0.422	0.754
Departure Headway (Hd)	6.443	5.92	5.656	5.678	5.628
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	558	610	637	634	646
Service Time	4.479	3.653	3.39	3.405	3.355
HCM Lane V/C Ratio	0.253	0.459	0.35	0.421	0.746
HCM Control Delay	11.7	13.6	11.4	12.5	23.6
HCM Lane LOS	B	B	B	B	C
HCM 95th-tile Q	1	2.4	1.6	2.1	6.8

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	196	23	0	72	234	460	52	90	445	14
Future Vol, veh/h	0	0	196	23	0	72	234	460	52	90	445	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	50	-	0	550	-	-	120	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	202	24	0	74	241	474	54	93	459	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	459	1736	-	501	473	0	0	528	0	0
Stage 1	-	-	-	983	-	-	-	-	-	-	-	-
Stage 2	-	-	-	753	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.22	7.12	-	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	6.12	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.12	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.318	3.518	-	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	0	602	69	0	570	1089	-	-	1039	-	-
Stage 1	0	0	-	299	0	-	-	-	-	-	-	-
Stage 2	0	0	-	402	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	602	36	-	570	1089	-	-	1039	-	-
Mov Cap-2 Maneuver	-	-	-	36	-	-	-	-	-	-	-	-
Stage 1	-	-	-	233	-	-	-	-	-	-	-	-
Stage 2	-	-	-	243	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14	61.8	2.9	1.4
HCM LOS	B	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1089	-	-	602	36	570	1039	-	-
HCM Lane V/C Ratio	0.222	-	-	0.336	0.659	0.13	0.089	-	-
HCM Control Delay (s)	9.2	-	-	14	216.7	12.3	8.8	-	-
HCM Lane LOS	A	-	-	B	F	B	A	-	-
HCM 95th %tile Q(veh)	0.8	-	-	1.5	2.3	0.4	0.3	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	85	53	23	658	618	40
Future Vol, veh/h	85	53	23	658	618	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	89	56	24	693	651	42

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1413	347	693	0	-	0
Stage 1	672	-	-	-	-	-
Stage 2	741	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	140	650	900	-	-	-
Stage 1	470	-	-	-	-	-
Stage 2	470	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	136	650	900	-	-	-
Mov Cap-2 Maneuver	336	-	-	-	-	-
Stage 1	457	-	-	-	-	-
Stage 2	470	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.3	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	900	-	336	650	-	-
HCM Lane V/C Ratio	0.027	-	0.266	0.086	-	-
HCM Control Delay (s)	9.1	-	19.6	11.1	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.1	0.3	-	-

Intersection	
Intersection Delay, s/veh	19.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	21	19	24	37	75	9	311	34	138	483	30
Future Vol, veh/h	18	21	19	24	37	75	9	311	34	138	483	30
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	21	19	24	37	76	9	314	34	139	488	30
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	10.5	11.2	16.2	23.8
HCM LOS	B	B	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	31%	18%	100%	0%
Vol Thru, %	0%	90%	36%	27%	0%	94%
Vol Right, %	0%	10%	33%	55%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	345	58	136	138	513
LT Vol	9	0	18	24	138	0
Through Vol	0	311	21	37	0	483
RT Vol	0	34	19	75	0	30
Lane Flow Rate	9	348	59	137	139	518
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.016	0.573	0.108	0.237	0.238	0.804
Departure Headway (Hd)	6.499	5.921	6.623	6.217	6.134	5.587
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	550	610	538	576	585	648
Service Time	4.247	3.67	4.694	4.277	3.873	3.325
HCM Lane V/C Ratio	0.016	0.57	0.11	0.238	0.238	0.799
HCM Control Delay	9.4	16.4	10.5	11.2	10.8	27.3
HCM Lane LOS	A	C	B	B	B	D
HCM 95th-tile Q	0	3.6	0.4	0.9	0.9	8.1

Intersection	
Int Delay, s/veh	35.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	72	226	239	254	386	107
Future Vol, veh/h	72	226	239	254	386	107
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	78	246	260	276	420	116

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	260	0	-	0	662	260
Stage 1	-	-	-	-	260	-
Stage 2	-	-	-	-	402	-
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	1304	-	-	0	427	779
Stage 1	-	-	-	0	783	-
Stage 2	-	-	-	0	676	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1304	-	-	-	~ 401	779
Mov Cap-2 Maneuver	-	-	-	-	~ 401	-
Stage 1	-	-	-	-	736	-
Stage 2	-	-	-	-	676	-

Approach	EB	WB	SB
HCM Control Delay, s	1.9	0	72.9
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1304	-	-	401	779
HCM Lane V/C Ratio	0.06	-	-	1.046	0.149
HCM Control Delay (s)	7.9	-	-	90.2	10.4
HCM Lane LOS	A	-	-	F	B
HCM 95th %tile Q(veh)	0.2	-	-	13.8	0.5

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

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	354	526	0
Future Vol, veh/h	0	0	0	354	526	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	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	0	0	0	385	572	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	957	572	572	0	-	0
Stage 1	572	-	-	-	-	-
Stage 2	385	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	286	520	1001	-	-	-
Stage 1	565	-	-	-	-	-
Stage 2	688	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	286	520	1001	-	-	-
Mov Cap-2 Maneuver	478	-	-	-	-	-
Stage 1	565	-	-	-	-	-
Stage 2	688	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1001	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	58	0	0	76	0	0
Future Vol, veh/h	58	0	0	76	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	63	0	0	83	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	63	0	146	63
Stage 1	-	-	-	-	63	-
Stage 2	-	-	-	-	83	-
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	-	-	1540	-	846	1002
Stage 1	-	-	-	-	960	-
Stage 2	-	-	-	-	940	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1540	-	846	1002
Mov Cap-2 Maneuver	-	-	-	-	846	-
Stage 1	-	-	-	-	960	-
Stage 2	-	-	-	-	940	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1540	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	1	114	0	0	261	0	0	0	0	0	0	0
Future Vol, veh/h	1	114	0	0	261	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	152	0	0	348	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	348	0	0	152	0	0	508	508	152	508	508	348
Stage 1	-	-	-	-	-	-	160	160	-	348	348	-
Stage 2	-	-	-	-	-	-	348	348	-	160	160	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1211	-	-	1429	-	-	475	468	894	475	468	695
Stage 1	-	-	-	-	-	-	842	766	-	668	634	-
Stage 2	-	-	-	-	-	-	668	634	-	842	766	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1211	-	-	1429	-	-	474	466	894	474	466	695
Mov Cap-2 Maneuver	-	-	-	-	-	-	474	466	-	474	466	-
Stage 1	-	-	-	-	-	-	839	763	-	665	634	-
Stage 2	-	-	-	-	-	-	668	634	-	839	763	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	0	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1211	-	-	1429	-	-	-
HCM Lane V/C Ratio	-	0.003	-	-	-	-	-	-
HCM Control Delay (s)	0	8	0	-	0	-	-	0
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	15.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	260	117	9	357	240	32
Future Vol, veh/h	260	117	9	357	240	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	325	146	11	446	300	40

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	471	0	793	325
Stage 1	-	-	-	-	325	-
Stage 2	-	-	-	-	468	-
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	-	-	1091	-	358	716
Stage 1	-	-	-	-	732	-
Stage 2	-	-	-	-	630	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1091	-	354	716
Mov Cap-2 Maneuver	-	-	-	-	354	-
Stage 1	-	-	-	-	732	-
Stage 2	-	-	-	-	624	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	59.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	376	-	-	1091	-
HCM Lane V/C Ratio	0.904	-	-	0.01	-
HCM Control Delay (s)	59.1	-	-	8.3	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	9.3	-	-	0	-

Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	181	102	186	67	107	190
Future Vol, veh/h	181	102	186	67	107	190
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	213	120	219	79	126	224
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	13.9	12.2	11.2
HCM LOS	B	B	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	64%	0%	100%	0%
Vol Thru, %	36%	74%	0%	0%
Vol Right, %	0%	26%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	283	253	107	190
LT Vol	181	0	107	0
Through Vol	102	186	0	0
RT Vol	0	67	0	190
Lane Flow Rate	333	298	126	224
Geometry Grp	2	2	7	7
Degree of Util (X)	0.504	0.433	0.234	0.34
Departure Headway (Hd)	5.454	5.238	6.698	5.481
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	663	688	536	657
Service Time	3.485	3.269	4.431	3.214
HCM Lane V/C Ratio	0.502	0.433	0.235	0.341
HCM Control Delay	13.9	12.2	11.5	11
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	2.8	2.2	0.9	1.5

Intersection	
Intersection Delay, s/veh	11.7
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	133	100	72	166	171	168
Future Vol, veh/h	133	100	72	166	171	168
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	160	120	87	200	206	202
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	12.5	12.6	10.5
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	30%	57%	0%	0%
Vol Thru, %	70%	0%	100%	0%
Vol Right, %	0%	43%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	238	233	171	168
LT Vol	72	133	0	0
Through Vol	166	0	171	0
RT Vol	0	100	0	168
Lane Flow Rate	287	281	206	202
Geometry Grp	5	2	7	7
Degree of Util (X)	0.433	0.425	0.327	0.282
Departure Headway (Hd)	5.436	5.45	5.719	5.01
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	662	663	630	719
Service Time	3.463	3.479	3.445	2.736
HCM Lane V/C Ratio	0.434	0.424	0.327	0.281
HCM Control Delay	12.6	12.5	11.2	9.7
HCM Lane LOS	B	B	B	A
HCM 95th-tile Q	2.2	2.1	1.4	1.2

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	159	350	390	49	127	549
v/c Ratio	0.44	0.43	0.63	0.09	0.38	0.44
Control Delay	26.3	4.5	21.2	5.4	25.3	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.3	4.5	21.2	5.4	25.3	6.9
Queue Length 50th (ft)	43	10	101	0	35	81
Queue Length 95th (ft)	121	60	221	19	96	162
Internal Link Dist (ft)	1047		692			753
Turn Bay Length (ft)	165			405	410	
Base Capacity (vph)	542	1108	1145	991	744	1690
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.32	0.34	0.05	0.17	0.32

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Volume (veh/h)	146	322	359	45	117	505	
Future Volume (veh/h)	146	322	359	45	117	505	
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	1826	1826	1826	1826	1826	1826	
Adj Flow Rate, veh/h	159	350	390	49	127	549	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	5	5	5	5	5	5	
Cap, veh/h	442	543	530	449	167	923	
Arrive On Green	0.25	0.25	0.29	0.29	0.10	0.51	
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826	
Grp Volume(v), veh/h	159	350	390	49	127	549	
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826	
Q Serve(g_s), s	3.2	8.1	8.3	1.0	3.1	9.1	
Cycle Q Clear(g_c), s	3.2	8.1	8.3	1.0	3.1	9.1	
Prop In Lane	1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	442	543	530	449	167	923	
V/C Ratio(X)	0.36	0.65	0.74	0.11	0.76	0.59	
Avail Cap(c_a), veh/h	588	672	1286	1090	807	2095	
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	1.00	
Uniform Delay (d), s/veh	13.1	11.7	13.7	11.2	18.9	7.5	
Incr Delay (d2), s/veh	0.5	1.5	2.0	0.1	6.9	0.6	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	1.1	2.4	2.7	0.3	1.3	2.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	13.6	13.2	15.7	11.3	25.7	8.1	
LnGrp LOS	B	B	B	B	C	A	
Approach Vol, veh/h	509		439			676	
Approach Delay, s/veh	13.3		15.2			11.4	
Approach LOS	B		B			B	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	9.2	18.3			27.5	15.4
Change Period (Y+Rc), s	5.1	5.8			5.8	4.5
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.5
Max Q Clear Time (g_c+I1), s	5.1	10.3			11.1	10.1
Green Ext Time (p_c), s	0.2	2.2			3.5	0.8

Intersection Summary	
HCM 6th Ctrl Delay	13.0
HCM 6th LOS	B

1: Tinloy St /Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.0	0.1
Total Del/Veh (s)	10.5	21.4	5.6	10.9

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	1.0	0.0	0.4
Total Del/Veh (s)	5.8	8.4	18.6	10.3

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.5	0.3
Total Del/Veh (s)	11.0	9.8	1.9	7.0

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.5	2.1	1.2
Total Del/Veh (s)	19.1	10.3	16.1	15.8	13.8

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.5	2.7	0.7
Total Del/Veh (s)	14.1	14.6	19.9	36.8	20.7

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.4	8.8	25.6	12.4

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.6	1.4	0.0	0.4
Total Del/Veh (s)	16.3	33.4	28.5	12.1	22.4

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.1	1.7	0.5
Total Del/Veh (s)	14.3	14.8	11.5	13.7

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	2.3	0.0	0.2	1.2
Total Del/Veh (s)	8.8	7.9	10.6	8.8

Total Zone Performance

Denied Del/Veh (s)	1.3
Total Del/Veh (s)	659.3

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	111	211	99	93
Average Queue (ft)	75	93	44	44
95th Queue (ft)	118	168	82	81
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	7			
Queuing Penalty (veh)	22			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	143	111	161	126	116
Average Queue (ft)	83	32	80	78	62
95th Queue (ft)	138	76	135	120	107
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	1			5	2
Queuing Penalty (veh)	4			8	3
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	3		
Queuing Penalty (veh)		0	5		

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	144	138	41	76	50
Average Queue (ft)	76	65	15	40	5
95th Queue (ft)	119	110	41	63	27
Link Distance (ft)	1196	1196		262	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	46	120	120	167	25	246	140	182	211	134
Average Queue (ft)	14	48	51	81	2	89	60	60	106	57
95th Queue (ft)	40	91	94	150	13	169	117	134	172	109
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)		0	0	0						
Queuing Penalty (veh)		0	0	1						
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)						3	0			
Queuing Penalty (veh)						6	1			

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	168	191	102	175	175	121	179	210	231	100	85
Average Queue (ft)	90	129	62	59	94	33	85	111	138	37	44
95th Queue (ft)	170	201	106	143	171	83	152	192	208	82	75
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	0	5	3	4	6						
Queuing Penalty (veh)	1	17	0	13	21						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			3	4		1	6	0	0		
Queuing Penalty (veh)			7	4		1	2	0	0		

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	R	<	R	T
Maximum Queue (ft)	134	146	188	246	73	216	226	258
Average Queue (ft)	45	50	52	68	3	137	147	40
95th Queue (ft)	103	111	142	174	47	213	231	165
Link Distance (ft)	456	456	334	334	334	145	145	915
Upstream Blk Time (%)				0	0	11	14	
Queuing Penalty (veh)				0	0	0	0	
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	128	140	203	192	193	179	252	334	235	290	234	122
Average Queue (ft)	56	74	91	101	92	83	115	190	86	165	87	59
95th Queue (ft)	107	122	161	162	160	145	199	292	187	250	173	104
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)			0									
Queuing Penalty (veh)			0									
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)			0	0	0	3	5			0	0	
Queuing Penalty (veh)			0	0	0	9	8			2	0	

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	123
Average Queue (ft)	53
95th Queue (ft)	99
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	187	142	71	76	94	76	145	48
Average Queue (ft)	82	62	22	26	42	26	57	19
95th Queue (ft)	151	125	55	57	78	59	108	43
Link Distance (ft)	211	211		1564	1564		800	
Upstream Blk Time (%)	0							
Queuing Penalty (veh)	0							
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)							0	
Queuing Penalty (veh)							0	

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	241	174	109	92	96	99	67
Average Queue (ft)	95	61	54	30	32	47	35
95th Queue (ft)	177	120	96	71	77	84	59
Link Distance (ft)	548		211	211	211	1120	1120
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		155					
Storage Blk Time (%)	1	0					
Queuing Penalty (veh)	3	0					

Zone Summary

Zone wide Queuing Penalty: 139

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

PM Peak
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	66	3.0	0.225	6.3	LOS A	1.0	26.0	0.52	0.44	0.52	33.7
8	T1	65	3.0	0.225	6.3	LOS A	1.0	26.0	0.52	0.44	0.52	33.6
18	R2	73	3.0	0.225	6.3	LOS A	1.0	26.0	0.52	0.44	0.52	32.6
Approach		204	3.0	0.225	6.3	LOS A	1.0	26.0	0.52	0.44	0.52	33.3
East: Idaho Maryland Rd												
1	L2	318	3.0	0.317	6.8	LOS A	1.5	37.6	0.50	0.42	0.50	31.7
6	T1	246	3.0	0.474	9.1	LOS A	2.8	72.4	0.59	0.53	0.64	33.0
16	R2	233	3.0	0.474	9.1	LOS A	2.8	72.4	0.59	0.53	0.64	32.0
Approach		797	3.0	0.474	8.2	LOS A	2.8	72.4	0.55	0.49	0.58	32.2
North: Main St												
7	L2	73	3.0	0.359	8.9	LOS A	1.6	40.8	0.61	0.64	0.68	32.6
4	T1	213	3.0	0.359	8.9	LOS A	1.6	40.8	0.61	0.64	0.68	32.6
14	R2	329	3.0	0.203	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		615	3.0	0.359	4.1	LOS A	1.6	40.8	0.29	0.30	0.32	34.9
West: Main St												
5	L2	207	3.0	0.412	9.5	LOS A	2.1	53.7	0.63	0.69	0.79	31.4
2	T1	93	3.0	0.412	9.5	LOS A	2.1	53.7	0.63	0.69	0.79	31.4
12	R2	35	3.0	0.412	9.5	LOS A	2.1	53.7	0.63	0.69	0.79	30.5
Approach		335	3.0	0.412	9.5	LOS A	2.1	53.7	0.63	0.69	0.79	31.3
All Vehicles		1951	3.0	0.474	6.9	LOS A	2.8	72.4	0.48	0.46	0.53	32.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	96	2	0	0	0	0	84	95	88	94	0
Future Vol, veh/h	15	96	2	0	0	0	0	84	95	88	94	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	109	2	0	0	0	0	95	108	100	107	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	9	9.6	9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	24%	0%	100%	0%
Vol Thru, %	47%	76%	96%	0%	100%
Vol Right, %	53%	0%	4%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	179	63	50	88	94
LT Vol	0	15	0	88	0
Through Vol	84	48	48	0	94
RT Vol	95	0	2	0	0
Lane Flow Rate	203	72	57	100	107
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.272	0.112	0.087	0.155	0.15
Departure Headway (Hd)	4.814	5.65	5.502	5.568	5.065
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	747	634	650	644	708
Service Time	2.844	3.392	3.244	3.299	2.796
HCM Lane V/C Ratio	0.272	0.114	0.088	0.155	0.151
HCM Control Delay	9.6	9.1	8.8	9.3	8.7
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	1.1	0.4	0.3	0.5	0.5

Intersection	
Intersection Delay, s/veh	13.5
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	169	13	29	149	125	323
Future Vol, veh/h	169	13	29	149	125	323
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	219	17	38	194	162	419
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	13.2	11	14.7
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	37%	0%
Vol Thru, %	0%	0%	93%	63%	100%
Vol Right, %	0%	100%	7%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	125	323	182	79	99
LT Vol	125	0	0	29	0
Through Vol	0	0	169	50	99
RT Vol	0	323	13	0	0
Lane Flow Rate	162	419	236	102	129
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.29	0.609	0.401	0.188	0.231
Departure Headway (Hd)	6.44	5.228	6.113	6.629	6.442
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	558	692	589	541	557
Service Time	4.171	2.959	4.148	4.369	4.182
HCM Lane V/C Ratio	0.29	0.605	0.401	0.189	0.232
HCM Control Delay	11.8	15.8	13.2	10.9	11.1
HCM Lane LOS	B	C	B	B	B
HCM 95th-tile Q	1.2	4.2	1.9	0.7	0.9

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	433	68	20	141	44	7
Future Vol, veh/h	433	68	20	141	44	7
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	555	87	26	181	56	9
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	11.4	9.1	9.4
HCM LOS	B	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	86%	0%	0%	30%	0%
Vol Thru, %	0%	100%	68%	70%	100%
Vol Right, %	14%	0%	32%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	51	289	212	67	94
LT Vol	44	0	0	20	0
Through Vol	0	289	144	47	94
RT Vol	7	0	68	0	0
Lane Flow Rate	65	370	272	86	121
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.103	0.504	0.354	0.13	0.178
Departure Headway (Hd)	5.698	4.907	4.682	5.454	5.304
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	628	736	768	656	676
Service Time	3.747	2.636	2.411	3.194	3.043
HCM Lane V/C Ratio	0.104	0.503	0.354	0.131	0.179
HCM Control Delay	9.4	12.5	10	9	9.2
HCM Lane LOS	A	B	A	A	A
HCM 95th-tile Q	0.3	2.9	1.6	0.4	0.6

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	106	45	0	53	96	210	10	11	197	3
Future Vol, veh/h	0	0	106	45	0	53	96	210	10	11	197	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	550	-	-	120	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	128	54	0	64	116	253	12	13	237	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	760	237	820	758	259	241	0	0	265	0	0
Stage 1	-	263	-	491	491	-	-	-	-	-	-	-
Stage 2	-	497	-	329	267	-	-	-	-	-	-	-
Critical Hdwy	-	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	-	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	336	802	294	336	780	1326	-	-	1299	-	-
Stage 1	0	691	-	559	548	-	-	-	-	-	-	-
Stage 2	0	545	-	684	688	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	304	802	229	304	780	1326	-	-	1299	-	-
Mov Cap-2 Maneuver	-	304	-	229	304	-	-	-	-	-	-	-
Stage 1	-	684	-	510	500	-	-	-	-	-	-	-
Stage 2	-	498	-	569	681	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	17.1	2.4	0.4
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1326	-	-	802	229	780	1299	-	-
HCM Lane V/C Ratio	0.087	-	-	0.159	0.237	0.082	0.01	-	-
HCM Control Delay (s)	8	-	-	10.3	25.5	10	7.8	-	-
HCM Lane LOS	A	-	-	B	D	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.6	0.9	0.3	0	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	28	34	302	290	43
Future Vol, veh/h	13	28	34	302	290	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	37	45	397	382	57

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	898	220	439	0	-	0
Stage 1	411	-	-	-	-	-
Stage 2	487	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	294	785	1119	-	-	-
Stage 1	638	-	-	-	-	-
Stage 2	617	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	282	785	1119	-	-	-
Mov Cap-2 Maneuver	478	-	-	-	-	-
Stage 1	612	-	-	-	-	-
Stage 2	617	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.8	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1119	-	478	785	-	-
HCM Lane V/C Ratio	0.04	-	0.036	0.047	-	-
HCM Control Delay (s)	8.4	-	12.8	9.8	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.1	-	-

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	10	8	28	23	76	16	291	6	25	97	11
Future Vol, veh/h	10	10	8	28	23	76	16	291	6	25	97	11
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	11	9	31	26	84	18	323	7	28	108	12
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	8.6	9.1	12	9
HCM LOS	A	A	B	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	36%	22%	100%	0%
Vol Thru, %	0%	98%	36%	18%	0%	90%
Vol Right, %	0%	2%	29%	60%	0%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	16	297	28	127	25	108
LT Vol	16	0	10	28	25	0
Through Vol	0	291	10	23	0	97
RT Vol	0	6	8	76	0	11
Lane Flow Rate	18	330	31	141	28	120
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.028	0.466	0.045	0.191	0.045	0.174
Departure Headway (Hd)	5.606	5.089	5.264	4.882	5.794	5.218
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	637	706	675	732	616	684
Service Time	3.356	2.839	3.333	2.933	3.552	2.976
HCM Lane V/C Ratio	0.028	0.467	0.046	0.193	0.045	0.175
HCM Control Delay	8.5	12.2	8.6	9.1	8.8	9.1
HCM Lane LOS	A	B	A	A	A	A
HCM 95th-tile Q	0.1	2.5	0.1	0.7	0.1	0.6

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	46	123	127	229	117	43
Future Vol, veh/h	46	123	127	229	117	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	58	154	159	286	146	54

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	159	0	-	0	429	159
Stage 1	-	-	-	-	159	-
Stage 2	-	-	-	-	270	-
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	1420	-	-	0	583	886
Stage 1	-	-	-	0	870	-
Stage 2	-	-	-	0	775	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1420	-	-	-	559	886
Mov Cap-2 Maneuver	-	-	-	-	559	-
Stage 1	-	-	-	-	834	-
Stage 2	-	-	-	-	775	-

Approach	EB	WB	SB
HCM Control Delay, s	2.1	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1420	-	-	559	886
HCM Lane V/C Ratio	0.04	-	-	0.262	0.061
HCM Control Delay (s)	7.6	-	-	13.7	9.3
HCM Lane LOS	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	1	0.2

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	317	138	0
Future Vol, veh/h	0	0	0	317	138	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	360	157	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	517	157	157	0	-	0
Stage 1	157	-	-	-	-	-
Stage 2	360	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	518	889	1423	-	-	-
Stage 1	871	-	-	-	-	-
Stage 2	706	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	518	889	1423	-	-	-
Mov Cap-2 Maneuver	642	-	-	-	-	-
Stage 1	871	-	-	-	-	-
Stage 2	706	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1423	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	28	0	0	53	0	0
Future Vol, veh/h	28	0	0	53	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	0	0	58	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	30	0	88	30
Stage 1	-	-	-	-	30	-
Stage 2	-	-	-	-	58	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1583	-	913	1044
Stage 1	-	-	-	-	993	-
Stage 2	-	-	-	-	965	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1583	-	913	1044
Mov Cap-2 Maneuver	-	-	-	-	913	-
Stage 1	-	-	-	-	993	-
Stage 2	-	-	-	-	965	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1583	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	176	0	0	66	0	0	0	0	0	0	0
Future Vol, veh/h	0	176	0	0	66	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	71	71	71	71	71	71	71	71	71
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	248	0	0	93	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	93	0	0	248	0	0	341	341	248	341	341	93
Stage 1	-	-	-	-	-	-	248	248	-	93	93	-
Stage 2	-	-	-	-	-	-	93	93	-	248	248	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1501	-	-	1318	-	-	613	581	791	613	581	964
Stage 1	-	-	-	-	-	-	756	701	-	914	818	-
Stage 2	-	-	-	-	-	-	914	818	-	756	701	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1501	-	-	1318	-	-	613	581	791	613	581	964
Mov Cap-2 Maneuver	-	-	-	-	-	-	613	581	-	613	581	-
Stage 1	-	-	-	-	-	-	756	701	-	914	818	-
Stage 2	-	-	-	-	-	-	914	818	-	756	701	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1501	-	-	1318	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	146	173	10	124	39	6
Future Vol, veh/h	146	173	10	124	39	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	195	231	13	165	52	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	426	0	386	195
Stage 1	-	-	-	-	195	-
Stage 2	-	-	-	-	191	-
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	-	-	1133	-	617	846
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	841	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1133	-	610	846
Mov Cap-2 Maneuver	-	-	-	-	610	-
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	832	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	634	-	-	1133	-
HCM Lane V/C Ratio	0.095	-	-	0.012	-
HCM Control Delay (s)	11.3	-	-	8.2	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	48	89	68	42	22	59
Future Vol, veh/h	48	89	68	42	22	59
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	56	105	80	49	26	69
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	8.4	7.8	7.9
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	35%	0%	100%	0%
Vol Thru, %	65%	62%	0%	0%
Vol Right, %	0%	38%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	137	110	22	59
LT Vol	48	0	22	0
Through Vol	89	68	0	0
RT Vol	0	42	0	59
Lane Flow Rate	161	129	26	69
Geometry Grp	2	2	7	7
Degree of Util (X)	0.196	0.148	0.041	0.086
Departure Headway (Hd)	4.376	4.107	5.675	4.469
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	825	876	633	804
Service Time	2.376	2.119	3.392	2.186
HCM Lane V/C Ratio	0.195	0.147	0.041	0.086
HCM Control Delay	8.4	7.8	8.6	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.5	0.1	0.3

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	12	32	12	37	6	49	32	4	1	42	46
Future Vol, veh/h	32	12	32	12	37	6	49	32	4	1	42	46
Peak Hour Factor	0.78	0.92	0.78	0.92	0.92	0.92	0.78	0.78	0.92	0.92	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	13	41	13	40	7	63	41	4	1	54	59
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	7.9	7.9	8.4	7.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	58%	42%	22%	2%	0%
Vol Thru, %	38%	16%	67%	98%	0%
Vol Right, %	5%	42%	11%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	85	76	55	43	46
LT Vol	49	32	12	1	0
Through Vol	32	12	37	42	0
RT Vol	4	32	6	0	46
Lane Flow Rate	108	95	60	55	59
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.138	0.115	0.075	0.076	0.07
Departure Headway (Hd)	4.602	4.35	4.535	4.992	4.277
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	781	826	792	720	839
Service Time	2.619	2.365	2.552	2.708	1.993
HCM Lane V/C Ratio	0.138	0.115	0.076	0.076	0.07
HCM Control Delay	8.4	7.9	7.9	8.1	7.3
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.5	0.4	0.2	0.2	0.2

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	30	87	290	130	230	124
v/c Ratio	0.09	0.13	0.45	0.21	0.43	0.09
Control Delay	21.5	2.8	15.6	4.5	17.1	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.5	2.8	15.6	4.5	17.1	2.3
Queue Length 50th (ft)	4	0	36	0	29	0
Queue Length 95th (ft)	32	18	153	32	131	24
Internal Link Dist (ft)	768		708			723
Turn Bay Length (ft)	165			405	410	
Base Capacity (vph)	775	1085	1446	1255	1035	1760
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.08	0.20	0.10	0.22	0.07

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	28	80	267	120	212	114
Future Volume (veh/h)	28	80	267	120	212	114
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	30	87	290	130	230	124
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	172	426	466	395	307	1065
Arrive On Green	0.10	0.10	0.26	0.26	0.18	0.58
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	30	87	290	130	230	124
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	0.5	1.5	4.7	2.3	4.2	1.0
Cycle Q Clear(g_c), s	0.5	1.5	4.7	2.3	4.2	1.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	172	426	466	395	307	1065
V/C Ratio(X)	0.17	0.20	0.62	0.33	0.75	0.12
Avail Cap(c_a), veh/h	728	921	1637	1388	1028	2667
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	1.00
Uniform Delay (d), s/veh	13.9	9.4	11.1	10.2	13.2	3.1
Incr Delay (d2), s/veh	0.5	0.2	1.4	0.5	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	0.4	1.4	0.5	1.4	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.4	9.6	12.5	10.7	16.8	3.2
LnGrp LOS	B	A	B	B	B	A
Approach Vol, veh/h	117		420			354
Approach Delay, s/veh	10.8		11.9			12.0
Approach LOS	B		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	11.1	14.4			25.5	8.2
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	6.2	6.7			3.0	3.5
Green Ext Time (p_c), s	0.5	1.9			0.6	0.2

Intersection Summary	
HCM 6th Ctrl Delay	11.8
HCM 6th LOS	B

1: Tinloy St /Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.0	0.1
Total Del/Veh (s)	2.5	9.5	4.1	4.8

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	1.5	0.0	0.5
Total Del/Veh (s)	4.2	5.6	8.4	6.1

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.1
Total Del/Veh (s)	5.5	7.6	0.5	3.9

8: Main St & Maltman Dr/Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.3	2.0	0.9
Total Del/Veh (s)	14.1	4.4	7.5	6.3	5.8

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.7	2.9	0.9
Total Del/Veh (s)	3.9	9.4	16.8	37.5	16.6

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.3	3.8	20.1	8.6

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.3	1.5	0.0	0.2
Total Del/Veh (s)	5.3	8.4	10.9	1.1	4.8

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.9	0.5
Total Del/Veh (s)	11.0	10.3	6.1	7.9

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	2.0	0.0	0.1	0.6
Total Del/Veh (s)	4.5	3.1	4.9	3.7

Total Zone Performance

Denied Del/Veh (s)	1.1
Total Del/Veh (s)	60.1

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	80	102	66	51
Average Queue (ft)	26	44	24	15
95th Queue (ft)	59	81	56	40
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	90	59	77	105	88
Average Queue (ft)	41	23	30	44	28
95th Queue (ft)	69	55	63	84	63
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)				0	0
Queuing Penalty (veh)				0	0
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	0		
Queuing Penalty (veh)		0	0		

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	65	51	30	51	2
Average Queue (ft)	35	26	7	31	0
95th Queue (ft)	53	49	27	44	2
Link Distance (ft)	1196	1196		262	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: Main St & Maltman Dr/Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	36	45	51	84	22	64	47	37	76	46
Average Queue (ft)	7	16	17	27	1	26	14	6	30	13
95th Queue (ft)	27	37	42	60	10	56	40	25	57	37
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	39	70	68	60	92	32	39	124	146	46	65
Average Queue (ft)	8	18	28	9	23	4	8	29	73	13	24
95th Queue (ft)	27	49	60	36	69	19	30	81	130	38	52
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)				0	0						
Queuing Penalty (veh)				0	0						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)				0							
Queuing Penalty (veh)				0							

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	<	R	T
Maximum Queue (ft)	44	27	18	29	182	115	19
Average Queue (ft)	5	4	1	2	84	56	1
95th Queue (ft)	24	17	10	14	147	93	11
Link Distance (ft)	456	456	334	334	145	145	915
Upstream Blk Time (%)					2	0	
Queuing Penalty (veh)					0	0	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	57	66	62	87	50	54	76	118	26	60	36	42
Average Queue (ft)	14	30	16	35	17	18	30	46	4	22	12	13
95th Queue (ft)	44	56	47	74	44	43	63	93	18	47	31	39
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	31
Average Queue (ft)	6
95th Queue (ft)	26
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	77	58	22	43	54	45	125	40
Average Queue (ft)	27	19	3	13	18	10	56	9
95th Queue (ft)	58	48	15	34	42	35	100	30
Link Distance (ft)	211	211		1564	1564		800	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	76	44	57	75	70	32	54
Average Queue (ft)	23	17	17	23	13	6	27
95th Queue (ft)	56	37	46	60	47	26	46
Link Distance (ft)	548		211	211	211	1120	1120
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		155					
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 1

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

0630-0730 AM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	13	3.0	0.082	4.5	LOS A	0.3	8.6	0.44	0.32	0.44	35.0
8	T1	21	3.0	0.082	4.5	LOS A	0.3	8.6	0.44	0.32	0.44	34.9
18	R2	44	3.0	0.082	4.5	LOS A	0.3	8.6	0.44	0.32	0.44	33.9
Approach		78	3.0	0.082	4.5	LOS A	0.3	8.6	0.44	0.32	0.44	34.3
East: Idaho Maryland Rd												
1	L2	105	3.0	0.090	3.9	LOS A	0.4	9.2	0.30	0.18	0.30	33.0
6	T1	55	3.0	0.149	4.4	LOS A	0.6	15.9	0.32	0.20	0.32	35.4
16	R2	118	3.0	0.149	4.4	LOS A	0.6	15.9	0.32	0.20	0.32	34.3
Approach		278	3.0	0.149	4.2	LOS A	0.6	15.9	0.31	0.19	0.31	34.0
North: Main St												
7	L2	68	3.0	0.186	4.6	LOS A	0.8	19.4	0.30	0.19	0.30	34.6
4	T1	153	3.0	0.186	4.6	LOS A	0.8	19.4	0.30	0.19	0.30	34.5
14	R2	77	3.0	0.047	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		297	3.0	0.186	3.4	LOS A	0.8	19.4	0.23	0.14	0.23	35.2
West: Main St												
5	L2	148	3.0	0.269	6.1	LOS A	1.1	29.2	0.45	0.36	0.45	33.2
2	T1	108	3.0	0.269	6.1	LOS A	1.1	29.2	0.45	0.36	0.45	33.1
12	R2	23	3.0	0.269	6.1	LOS A	1.1	29.2	0.45	0.36	0.45	32.2
Approach		279	3.0	0.269	6.1	LOS A	1.1	29.2	0.45	0.36	0.45	33.1
All Vehicles		932	3.0	0.269	4.5	LOS A	1.1	29.2	0.34	0.24	0.34	34.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection	
Intersection Delay, s/veh	14.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	47	329	3	0	0	0	0	95	147	162	296	0
Future Vol, veh/h	47	329	3	0	0	0	0	95	147	162	296	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	52	366	3	0	0	0	0	106	163	180	329	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	14.4	15.7
HCM LOS	B	B	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	22%	0%	100%	0%
Vol Thru, %	39%	78%	98%	0%	100%
Vol Right, %	61%	0%	2%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	242	212	168	162	296
LT Vol	0	47	0	162	0
Through Vol	95	165	165	0	296
RT Vol	147	0	3	0	0
Lane Flow Rate	269	235	186	180	329
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.461	0.442	0.344	0.339	0.573
Departure Headway (Hd)	6.166	6.772	6.646	6.78	6.272
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	583	531	540	529	576
Service Time	4.217	4.522	4.397	4.532	4.024
HCM Lane V/C Ratio	0.461	0.443	0.344	0.34	0.571
HCM Control Delay	14.4	14.8	12.9	13	17.2
HCM Lane LOS	B	B	B	B	C
HCM 95th-tile Q	2.4	2.2	1.5	1.5	3.6

Intersection	
Intersection Delay, s/veh	18.2
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	243	49	49	574	203	206
Future Vol, veh/h	243	49	49	574	203	206
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	259	52	52	611	216	219
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	17.3	20.9	14.8
HCM LOS	C	C	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	203	206	292	240	383
LT Vol	203	0	0	49	0
Through Vol	0	0	243	191	383
RT Vol	0	206	49	0	0
Lane Flow Rate	216	219	311	256	407
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.454	0.386	0.556	0.464	0.728
Departure Headway (Hd)	7.57	6.347	6.448	6.539	6.435
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	475	565	559	550	562
Service Time	5.333	4.109	4.508	4.3	4.196
HCM Lane V/C Ratio	0.455	0.388	0.556	0.465	0.724
HCM Control Delay	16.5	13.1	17.3	14.9	24.6
HCM Lane LOS	C	B	C	B	C
HCM 95th-tile Q	2.3	1.8	3.4	2.4	6.1

Intersection	
Intersection Delay, s/veh	15.9
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	375	88	31	519	107	49
Future Vol, veh/h	375	88	31	519	107	49
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	462	108	38	639	132	60
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	14	18.3	12.8
HCM LOS	B	C	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	69%	0%	0%	15%	0%
Vol Thru, %	0%	100%	59%	85%	100%
Vol Right, %	31%	0%	41%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	156	250	213	204	346
LT Vol	107	0	0	31	0
Through Vol	0	250	125	173	346
RT Vol	49	0	88	0	0
Lane Flow Rate	192	308	262	251	426
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.343	0.519	0.421	0.419	0.701
Departure Headway (Hd)	6.433	6.073	5.78	6.007	5.929
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	559	594	621	600	609
Service Time	4.476	3.817	3.524	3.748	3.671
HCM Lane V/C Ratio	0.343	0.519	0.422	0.418	0.7
HCM Control Delay	12.8	15.2	12.7	13	21.5
HCM Lane LOS	B	C	B	B	C
HCM 95th-tile Q	1.5	3	2.1	2.1	5.6

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	191	26	0	47	181	452	47	84	417	13
Future Vol, veh/h	0	0	191	26	0	47	181	452	47	84	417	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	550	-	-	120	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	203	28	0	50	193	481	50	89	444	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	1539	444	1623	1528	506	458	0	0	531	0	0
Stage 1	-	622	-	892	892	-	-	-	-	-	-	-
Stage 2	-	917	-	731	636	-	-	-	-	-	-	-
Critical Hdwy	-	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	-	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	116	614	82	117	566	1103	-	-	1036	-	-
Stage 1	0	479	-	337	360	-	-	-	-	-	-	-
Stage 2	0	351	-	413	472	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	87	614	44	88	566	1103	-	-	1036	-	-
Mov Cap-2 Maneuver	-	87	-	44	88	-	-	-	-	-	-	-
Stage 1	-	438	-	278	297	-	-	-	-	-	-	-
Stage 2	-	290	-	253	431	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.7	70.7	2.4	1.4
HCM LOS	B	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1103	-	-	614	44	566	1036	-	-
HCM Lane V/C Ratio	0.175	-	-	0.331	0.629	0.088	0.086	-	-
HCM Control Delay (s)	9	-	-	13.7	176.8	12	8.8	-	-
HCM Lane LOS	A	-	-	B	F	B	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	1.4	2.4	0.3	0.3	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	62	69	39	621	592	32
Future Vol, veh/h	62	69	39	621	592	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	71	40	640	610	33

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1347	322	643	0	-	0
Stage 1	627	-	-	-	-	-
Stage 2	720	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	154	674	940	-	-	-
Stage 1	496	-	-	-	-	-
Stage 2	481	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	147	674	940	-	-	-
Mov Cap-2 Maneuver	349	-	-	-	-	-
Stage 1	475	-	-	-	-	-
Stage 2	481	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.1	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	940	-	349	674	-	-
HCM Lane V/C Ratio	0.043	-	0.183	0.106	-	-
HCM Control Delay (s)	9	-	17.6	11	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	0.4	-	-

Intersection	
Intersection Delay, s/veh	17.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	29	10	17	23	73	7	326	23	118	425	24
Future Vol, veh/h	22	29	10	17	23	73	7	326	23	118	425	24
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	31	11	18	24	78	7	347	24	126	452	26
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	10.6	10.8	16.8	19.9
HCM LOS	B	B	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	36%	15%	100%	0%
Vol Thru, %	0%	93%	48%	20%	0%	95%
Vol Right, %	0%	7%	16%	65%	0%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	7	349	61	113	118	449
LT Vol	7	0	22	17	118	0
Through Vol	0	326	29	23	0	425
RT Vol	0	23	10	73	0	24
Lane Flow Rate	7	371	65	120	126	478
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.013	0.601	0.119	0.204	0.213	0.738
Departure Headway (Hd)	6.376	5.823	6.619	6.123	6.103	5.56
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	561	620	539	584	589	650
Service Time	4.119	3.565	4.684	4.182	3.839	3.295
HCM Lane V/C Ratio	0.012	0.598	0.121	0.205	0.214	0.735
HCM Control Delay	9.2	17	10.6	10.8	10.5	22.4
HCM Lane LOS	A	C	B	B	B	C
HCM 95th-tile Q	0	4	0.4	0.8	0.8	6.5

Intersection	
Int Delay, s/veh	17.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	79	205	186	272	327	103
Future Vol, veh/h	79	205	186	272	327	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	87	225	204	299	359	113

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	204	0	-	0	603	204
Stage 1	-	-	-	-	204	-
Stage 2	-	-	-	-	399	-
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	-	-	0	462	837
Stage 1	-	-	-	0	830	-
Stage 2	-	-	-	0	678	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1368	-	-	-	432	837
Mov Cap-2 Maneuver	-	-	-	-	432	-
Stage 1	-	-	-	-	777	-
Stage 2	-	-	-	-	678	-

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	35.1
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1368	-	-	432	837
HCM Lane V/C Ratio	0.063	-	-	0.832	0.135
HCM Control Delay (s)	7.8	-	-	43	10
HCM Lane LOS	A	-	-	E	B
HCM 95th %tile Q(veh)	0.2	-	-	7.9	0.5

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	356	452	0
Future Vol, veh/h	0	0	0	356	452	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	375	476	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	851	476	476	0	-	0
Stage 1	476	-	-	-	-	-
Stage 2	375	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	330	589	1086	-	-	-
Stage 1	625	-	-	-	-	-
Stage 2	695	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	330	589	1086	-	-	-
Mov Cap-2 Maneuver	519	-	-	-	-	-
Stage 1	625	-	-	-	-	-
Stage 2	695	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1086	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	61	0	0	54	0	0
Future Vol, veh/h	61	0	0	54	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	0	0	59	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	66	0	125	66
Stage 1	-	-	-	-	66	-
Stage 2	-	-	-	-	59	-
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	-	-	1536	-	870	998
Stage 1	-	-	-	-	957	-
Stage 2	-	-	-	-	964	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1536	-	870	998
Mov Cap-2 Maneuver	-	-	-	-	870	-
Stage 1	-	-	-	-	957	-
Stage 2	-	-	-	-	964	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1536	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	104	0	0	174	0	0	0	0	1	0	0
Future Vol, veh/h	5	104	0	0	174	0	0	0	0	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	137	0	0	229	0	0	0	0	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	229	0	0	137	0	0	406	406	137	406	406	229
Stage 1	-	-	-	-	-	-	177	177	-	229	229	-
Stage 2	-	-	-	-	-	-	229	229	-	177	177	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1339	-	-	1447	-	-	555	534	911	555	534	810
Stage 1	-	-	-	-	-	-	825	753	-	774	715	-
Stage 2	-	-	-	-	-	-	774	715	-	825	753	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1339	-	-	1447	-	-	548	525	911	548	525	810
Mov Cap-2 Maneuver	-	-	-	-	-	-	548	525	-	548	525	-
Stage 1	-	-	-	-	-	-	812	741	-	762	715	-
Stage 2	-	-	-	-	-	-	774	715	-	812	741	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0	0	11.6
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1339	-	-	1447	-	-	548
HCM Lane V/C Ratio	-	0.015	-	-	-	-	-	0.002
HCM Control Delay (s)	0	7.7	0	-	0	-	-	11.6
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	15.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	260	117	9	357	240	32
Future Vol, veh/h	260	117	9	357	240	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	325	146	11	446	300	40

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	471	0	793	325
Stage 1	-	-	-	-	325	-
Stage 2	-	-	-	-	468	-
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	-	-	1091	-	358	716
Stage 1	-	-	-	-	732	-
Stage 2	-	-	-	-	630	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1091	-	354	716
Mov Cap-2 Maneuver	-	-	-	-	354	-
Stage 1	-	-	-	-	732	-
Stage 2	-	-	-	-	624	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	59.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	376	-	-	1091	-
HCM Lane V/C Ratio	0.904	-	-	0.01	-
HCM Control Delay (s)	59.1	-	-	8.3	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	9.3	-	-	0	-

Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	181	102	186	67	107	190
Future Vol, veh/h	181	102	186	67	107	190
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	213	120	219	79	126	224
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	13.9	12.2	11.2
HCM LOS	B	B	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	64%	0%	100%	0%
Vol Thru, %	36%	74%	0%	0%
Vol Right, %	0%	26%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	283	253	107	190
LT Vol	181	0	107	0
Through Vol	102	186	0	0
RT Vol	0	67	0	190
Lane Flow Rate	333	298	126	224
Geometry Grp	2	2	7	7
Degree of Util (X)	0.504	0.433	0.234	0.34
Departure Headway (Hd)	5.454	5.238	6.698	5.481
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	663	688	536	657
Service Time	3.485	3.269	4.431	3.214
HCM Lane V/C Ratio	0.502	0.433	0.235	0.341
HCM Control Delay	13.9	12.2	11.5	11
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	2.8	2.2	0.9	1.5

Intersection	
Intersection Delay, s/veh	11.8
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	133	100	72	166	171	198
Future Vol, veh/h	133	100	72	166	171	198
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	160	120	87	200	206	239
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	12.7	12.7	10.7
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	30%	57%	0%	0%
Vol Thru, %	70%	0%	100%	0%
Vol Right, %	0%	43%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	238	233	171	198
LT Vol	72	133	0	0
Through Vol	166	0	171	0
RT Vol	0	100	0	198
Lane Flow Rate	287	281	206	239
Geometry Grp	5	2	7	7
Degree of Util (X)	0.436	0.43	0.328	0.333
Departure Headway (Hd)	5.479	5.511	5.73	5.021
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	657	654	628	716
Service Time	3.509	3.542	3.459	2.749
HCM Lane V/C Ratio	0.437	0.43	0.328	0.334
HCM Control Delay	12.7	12.7	11.2	10.2
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	2.2	2.2	1.4	1.5

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	192	342	395	82	178	441
v/c Ratio	0.57	0.38	0.69	0.15	0.51	0.40
Control Delay	32.0	4.1	25.2	5.0	28.5	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.0	4.1	25.2	5.0	28.5	6.9
Queue Length 50th (ft)	59	10	117	0	55	68
Queue Length 95th (ft)	#159	60	240	26	132	120
Internal Link Dist (ft)	947		662			713
Turn Bay Length (ft)	165			405	410	
Base Capacity (vph)	436	1087	984	874	616	1624
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.31	0.40	0.09	0.29	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	177	315	363	75	164	406
Future Volume (veh/h)	177	315	363	75	164	406
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	192	342	395	82	178	441
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	412	575	527	447	234	973
Arrive On Green	0.24	0.24	0.29	0.29	0.13	0.53
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	192	342	395	82	178	441
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	4.4	8.3	9.1	1.9	4.6	6.9
Cycle Q Clear(g_c), s	4.4	8.3	9.1	1.9	4.6	6.9
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	412	575	527	447	234	973
V/C Ratio(X)	0.47	0.59	0.75	0.18	0.76	0.45
Avail Cap(c_a), veh/h	527	677	1185	1005	744	1931
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	1.00
Uniform Delay (d), s/veh	15.2	11.8	15.0	12.4	19.4	6.7
Incr Delay (d2), s/veh	0.8	1.0	2.2	0.2	5.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	2.5	3.1	0.5	1.8	1.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.0	12.8	17.2	12.6	24.5	7.0
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	534		477			619
Approach Delay, s/veh	14.0		16.4			12.0
Approach LOS	B		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	11.4	19.2			30.6	15.9
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	6.6	11.1			8.9	10.3
Green Ext Time (p_c), s	0.4	2.3			2.7	0.7

Intersection Summary	
HCM 6th Ctrl Delay	13.9
HCM 6th LOS	B

1: Tinloy St /Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.0	0.1
Total Del/Veh (s)	7.7	14.4	5.2	8.3

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.4	1.0	0.0	0.5
Total Del/Veh (s)	5.6	8.1	12.9	8.7

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.4	0.2
Total Del/Veh (s)	9.5	9.1	1.6	6.1

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.5	2.1	1.1
Total Del/Veh (s)	15.3	9.3	15.9	16.1	13.3

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.5	2.8	0.7
Total Del/Veh (s)	14.0	14.6	19.5	36.4	19.8

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.5	9.3	25.8	13.2

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.6	1.5	0.0	0.5
Total Del/Veh (s)	16.3	31.3	26.8	10.5	21.3

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	1.6	0.4
Total Del/Veh (s)	14.4	14.3	11.5	13.6

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	2.3	0.0	0.2	1.2
Total Del/Veh (s)	9.2	8.0	11.2	9.1

Total Zone Performance

Denied Del/Veh (s)	1.3
Total Del/Veh (s)	592.8

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	103	145	83	104
Average Queue (ft)	62	71	42	41
95th Queue (ft)	104	125	74	77
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	2			
Queuing Penalty (veh)	6			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	125	111	141	113	109
Average Queue (ft)	69	33	67	61	52
95th Queue (ft)	109	74	117	97	96
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	0			1	1
Queuing Penalty (veh)	0			2	1
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	1		
Queuing Penalty (veh)		0	2		

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	139	125	37	74	39
Average Queue (ft)	67	54	15	35	5
95th Queue (ft)	108	95	39	58	23
Link Distance (ft)	1196	1196		262	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	48	98	106	160	23	182	136	188	228	129
Average Queue (ft)	13	46	50	77	2	85	63	64	109	55
95th Queue (ft)	39	84	90	145	13	152	117	141	183	103
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)				0						
Queuing Penalty (veh)				1						
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)						3	0			
Queuing Penalty (veh)						5	1			

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	172	193	102	190	181	106	153	191	211	96	111
Average Queue (ft)	94	132	67	73	99	34	73	93	128	25	45
95th Queue (ft)	175	202	107	166	175	80	128	173	191	68	86
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	1	5	2	5	7						
Queuing Penalty (veh)	3	17	0	18	25						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			2	5		0	4		0		
Queuing Penalty (veh)			5	6		1	1		0		

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	R	<	R	T
Maximum Queue (ft)	142	160	196	281	166	214	226	330
Average Queue (ft)	55	57	58	84	9	141	151	51
95th Queue (ft)	117	125	154	203	89	218	236	206
Link Distance (ft)	456	456	334	334	334	145	145	915
Upstream Blk Time (%)				0	0	12	16	
Queuing Penalty (veh)				0	0	0	0	
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	124	138	173	180	191	177	232	308	219	295	213	122
Average Queue (ft)	55	75	91	100	94	83	107	178	79	154	80	53
95th Queue (ft)	99	117	147	157	160	145	187	274	176	245	158	100
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)					0	3	4			0		
Queuing Penalty (veh)					0	9	6			2		

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	105
Average Queue (ft)	44
95th Queue (ft)	87
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	166	150	65	82	94	80	129	46
Average Queue (ft)	79	60	25	26	45	25	57	18
95th Queue (ft)	141	120	56	60	79	60	104	40
Link Distance (ft)	211	211		1564	1564		800	
Upstream Blk Time (%)	0	0						
Queuing Penalty (veh)	0	0						
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	267	173	130	100	97	108	75
Average Queue (ft)	96	63	55	29	32	51	35
95th Queue (ft)	187	123	101	72	77	91	61
Link Distance (ft)	548		211	211	211	1120	1120
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		155					
Storage Blk Time (%)	1	0					
Queuing Penalty (veh)	4	0					

Zone Summary

Zone wide Queuing Penalty: 115

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

1530-1630 PM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	53	3.0	0.211	6.1	LOS A	0.9	24.0	0.52	0.44	0.52	33.8
8	T1	50	3.0	0.211	6.1	LOS A	0.9	24.0	0.52	0.44	0.52	33.8
18	R2	86	3.0	0.211	6.1	LOS A	0.9	24.0	0.52	0.44	0.52	32.8
Approach		190	3.0	0.211	6.1	LOS A	0.9	24.0	0.52	0.44	0.52	33.3
East: Idaho Maryland Rd												
1	L2	319	3.0	0.305	6.5	LOS A	1.4	36.5	0.47	0.37	0.47	31.8
6	T1	207	3.0	0.395	7.6	LOS A	2.0	51.6	0.51	0.42	0.51	33.8
16	R2	207	3.0	0.395	7.6	LOS A	2.0	51.6	0.51	0.42	0.51	32.7
Approach		733	3.0	0.395	7.1	LOS A	2.0	51.6	0.49	0.40	0.49	32.6
North: Main St												
7	L2	89	3.0	0.384	8.9	LOS A	1.8	46.5	0.61	0.64	0.70	32.5
4	T1	230	3.0	0.384	8.9	LOS A	1.8	46.5	0.61	0.64	0.70	32.5
14	R2	310	3.0	0.191	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		629	3.0	0.384	4.5	LOS A	1.8	46.5	0.31	0.33	0.36	34.6
West: Main St												
5	L2	194	3.0	0.419	9.9	LOS A	2.2	55.1	0.64	0.71	0.83	31.3
2	T1	96	3.0	0.419	9.9	LOS A	2.2	55.1	0.64	0.71	0.83	31.3
12	R2	41	3.0	0.419	9.9	LOS A	2.2	55.1	0.64	0.71	0.83	30.5
Approach		330	3.0	0.419	9.9	LOS A	2.2	55.1	0.64	0.71	0.83	31.2
All Vehicles		1882	3.0	0.419	6.6	LOS A	2.2	55.1	0.46	0.43	0.51	33.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	181	3	0	0	0	0	60	57	114	193	0
Future Vol, veh/h	28	181	3	0	0	0	0	60	57	114	193	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	201	3	0	0	0	0	67	63	127	214	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	9.9	9.6	10.4
HCM LOS	A	A	B

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	24%	0%	100%	0%
Vol Thru, %	51%	76%	97%	0%	100%
Vol Right, %	49%	0%	3%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	117	119	94	114	193
LT Vol	0	28	0	114	0
Through Vol	60	91	91	0	193
RT Vol	57	0	3	0	0
Lane Flow Rate	130	132	104	127	214
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.191	0.213	0.164	0.205	0.317
Departure Headway (Hd)	5.292	5.827	5.686	5.822	5.319
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	673	612	627	614	673
Service Time	3.363	3.596	3.455	3.583	3.079
HCM Lane V/C Ratio	0.193	0.216	0.166	0.207	0.318
HCM Control Delay	9.6	10.2	9.6	10.1	10.6
HCM Lane LOS	A	B	A	B	B
HCM 95th-tile Q	0.7	0.8	0.6	0.8	1.4

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	92	27	16	245	82	85
Future Vol, veh/h	92	27	16	245	82	85
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	111	33	19	295	99	102
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	9.5	9.7	9.3
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	16%	0%
Vol Thru, %	0%	0%	77%	84%	100%
Vol Right, %	0%	100%	23%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	82	85	119	98	163
LT Vol	82	0	0	16	0
Through Vol	0	0	92	82	163
RT Vol	0	85	27	0	0
Lane Flow Rate	99	102	143	118	197
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.169	0.14	0.203	0.173	0.285
Departure Headway (Hd)	6.146	4.937	5.096	5.296	5.214
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	582	723	701	675	687
Service Time	3.903	2.693	3.149	3.044	2.961
HCM Lane V/C Ratio	0.17	0.141	0.204	0.175	0.287
HCM Control Delay	10.2	8.5	9.5	9.2	10
HCM Lane LOS	B	A	A	A	A
HCM 95th-tile Q	0.6	0.5	0.8	0.6	1.2

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	165	8	2	217	27	12
Future Vol, veh/h	165	8	2	217	27	12
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	193	9	2	254	32	14
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	8.4	8.7	8.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	69%	0%	0%	3%	0%
Vol Thru, %	0%	100%	87%	97%	100%
Vol Right, %	31%	0%	13%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	39	110	63	74	145
LT Vol	27	0	0	2	0
Through Vol	0	110	55	72	145
RT Vol	12	0	8	0	0
Lane Flow Rate	46	129	74	87	169
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.062	0.174	0.098	0.117	0.227
Departure Headway (Hd)	4.907	4.855	4.766	4.836	4.822
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	731	742	755	746	749
Service Time	2.929	2.569	2.48	2.536	2.522
HCM Lane V/C Ratio	0.063	0.174	0.098	0.117	0.226
HCM Control Delay	8.3	8.6	8	8.2	8.9
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.2	0.6	0.3	0.4	0.9

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	102	21	0	34	64	182	24	61	252	1
Future Vol, veh/h	0	0	102	21	0	34	64	182	24	61	252	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	550	-	-	120	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	113	23	0	38	71	202	27	68	280	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	787	280	831	775	216	281	0	0	229	0	0
Stage 1	-	416	-	358	358	-	-	-	-	-	-	-
Stage 2	-	371	-	473	417	-	-	-	-	-	-	-
Critical Hdwy	-	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	-	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	324	759	289	329	824	1282	-	-	1339	-	-
Stage 1	0	592	-	660	628	-	-	-	-	-	-	-
Stage 2	0	620	-	572	591	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	291	759	226	295	824	1282	-	-	1339	-	-
Mov Cap-2 Maneuver	-	291	-	226	295	-	-	-	-	-	-	-
Stage 1	-	562	-	624	593	-	-	-	-	-	-	-
Stage 2	-	586	-	462	561	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.6	14.6	1.9	1.5
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1282	-	-	759	226	824	1339	-	-
HCM Lane V/C Ratio	0.055	-	-	0.149	0.103	0.046	0.051	-	-
HCM Control Delay (s)	8	-	-	10.6	22.8	9.6	7.8	-	-
HCM Lane LOS	A	-	-	B	C	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.5	0.3	0.1	0.2	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	33	8	253	371	13
Future Vol, veh/h	15	33	8	253	371	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	38	9	294	431	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	751	223	446	0	-	0
Stage 1	439	-	-	-	-	-
Stage 2	312	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	362	781	1112	-	-	-
Stage 1	618	-	-	-	-	-
Stage 2	741	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	359	781	1112	-	-	-
Mov Cap-2 Maneuver	531	-	-	-	-	-
Stage 1	613	-	-	-	-	-
Stage 2	741	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.5	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1112	-	531	781	-	-
HCM Lane V/C Ratio	0.008	-	0.033	0.049	-	-
HCM Control Delay (s)	8.3	-	12	9.8	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.2	-	-

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	22	2	11	14	38	3	170	11	82	268	16
Future Vol, veh/h	11	22	2	11	14	38	3	170	11	82	268	16
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	25	2	13	16	44	3	195	13	94	308	18
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	9	8.8	10.1	11.2
HCM LOS	A	A	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	31%	17%	100%	0%
Vol Thru, %	0%	94%	63%	22%	0%	94%
Vol Right, %	0%	6%	6%	60%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	3	181	35	63	82	284
LT Vol	3	0	11	11	82	0
Through Vol	0	170	22	14	0	268
RT Vol	0	11	2	38	0	16
Lane Flow Rate	3	208	40	72	94	326
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.005	0.299	0.062	0.103	0.144	0.451
Departure Headway (Hd)	5.722	5.176	5.533	5.124	5.514	4.972
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	624	693	644	696	649	721
Service Time	3.472	2.926	3.597	3.182	3.258	2.715
HCM Lane V/C Ratio	0.005	0.3	0.062	0.103	0.145	0.452
HCM Control Delay	8.5	10.1	9	8.8	9.2	11.8
HCM Lane LOS	A	B	A	A	A	B
HCM 95th-tile Q	0	1.3	0.2	0.3	0.5	2.4

Intersection	
Int Delay, s/veh	7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	22	134	79	157	225	42
Future Vol, veh/h	22	134	79	157	225	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	151	89	176	253	47

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	89	0	-	0	290	89
Stage 1	-	-	-	-	89	-
Stage 2	-	-	-	-	201	-
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	1506	-	-	0	701	969
Stage 1	-	-	-	0	934	-
Stage 2	-	-	-	0	833	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	1506	-	-	-	689	969
Mov Cap-2 Maneuver	-	-	-	-	689	-
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	833	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1506	-	-	689	969
HCM Lane V/C Ratio	0.016	-	-	0.367	0.049
HCM Control Delay (s)	7.4	-	-	13.2	8.9
HCM Lane LOS	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	1.7	0.2

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	184	281	0
Future Vol, veh/h	0	0	0	184	281	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	214	327	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	541	327	327	0	-	0
Stage 1	327	-	-	-	-	-
Stage 2	214	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	502	714	1233	-	-	-
Stage 1	731	-	-	-	-	-
Stage 2	822	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	502	714	1233	-	-	-
Mov Cap-2 Maneuver	644	-	-	-	-	-
Stage 1	731	-	-	-	-	-
Stage 2	822	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1233	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	35	0	0	33	0	0
Future Vol, veh/h	35	0	0	33	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	0	0	36	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	38	0	74	38
Stage 1	-	-	-	-	38	-
Stage 2	-	-	-	-	36	-
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	-	-	1572	-	930	1034
Stage 1	-	-	-	-	984	-
Stage 2	-	-	-	-	986	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1572	-	930	1034
Mov Cap-2 Maneuver	-	-	-	-	930	-
Stage 1	-	-	-	-	984	-
Stage 2	-	-	-	-	986	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1572	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	56	0	0	55	1	0	0	0	0	0	0
Future Vol, veh/h	0	56	0	0	55	1	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	72	0	0	71	1	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	72	0	0	72	0	0	144	144	72	144	144	72
Stage 1	-	-	-	-	-	-	72	72	-	72	72	-
Stage 2	-	-	-	-	-	-	72	72	-	72	72	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1528	-	-	1528	-	-	825	747	990	825	747	990
Stage 1	-	-	-	-	-	-	938	835	-	938	835	-
Stage 2	-	-	-	-	-	-	938	835	-	938	835	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1528	-	-	1528	-	-	825	747	990	825	747	990
Mov Cap-2 Maneuver	-	-	-	-	-	-	825	747	-	825	747	-
Stage 1	-	-	-	-	-	-	938	835	-	938	835	-
Stage 2	-	-	-	-	-	-	938	835	-	938	835	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1528	-	-	1528	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	85	33	2	87	34	10
Future Vol, veh/h	85	33	2	87	34	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	71	71	71	71	71	71
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	120	46	3	123	48	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	166	0	249	120
Stage 1	-	-	-	-	120	-
Stage 2	-	-	-	-	129	-
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	-	-	1412	-	739	931
Stage 1	-	-	-	-	905	-
Stage 2	-	-	-	-	897	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1412	-	738	931
Mov Cap-2 Maneuver	-	-	-	-	738	-
Stage 1	-	-	-	-	905	-
Stage 2	-	-	-	-	895	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	774	-	-	1412	-
HCM Lane V/C Ratio	0.08	-	-	0.002	-
HCM Control Delay (s)	10.1	-	-	7.6	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	60	33	25	20	24	61
Future Vol, veh/h	60	33	25	20	24	61
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	91	50	38	30	36	92
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	8.4	7.5	7.9
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	65%	0%	100%	0%
Vol Thru, %	35%	56%	0%	0%
Vol Right, %	0%	44%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	93	45	24	61
LT Vol	60	0	24	0
Through Vol	33	25	0	0
RT Vol	0	20	0	61
Lane Flow Rate	141	68	36	92
Geometry Grp	2	2	7	7
Degree of Util (X)	0.174	0.078	0.056	0.111
Departure Headway (Hd)	4.436	4.124	5.51	4.305
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	812	871	653	836
Service Time	2.447	2.137	3.221	2.017
HCM Lane V/C Ratio	0.174	0.078	0.055	0.11
HCM Control Delay	8.4	7.5	8.5	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.3	0.2	0.4

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	82	26	25	60	47	60
Future Vol, veh/h	82	26	25	60	47	60
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	109	35	33	80	63	80
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8.5	8.4	7.8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	29%	76%	0%	0%
Vol Thru, %	71%	0%	100%	0%
Vol Right, %	0%	24%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	85	108	47	60
LT Vol	25	82	0	0
Through Vol	60	0	47	0
RT Vol	0	26	0	60
Lane Flow Rate	113	144	63	80
Geometry Grp	5	2	7	7
Degree of Util (X)	0.145	0.181	0.087	0.095
Departure Headway (Hd)	4.592	4.521	4.974	4.271
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	783	795	723	841
Service Time	2.61	2.54	2.69	1.987
HCM Lane V/C Ratio	0.144	0.181	0.087	0.095
HCM Control Delay	8.4	8.5	8.2	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.7	0.3	0.3

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	46	25	224	25	110	365
v/c Ratio	0.09	0.04	0.23	0.03	0.18	0.25
Control Delay	16.0	3.5	11.3	6.5	14.2	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.0	3.5	11.3	6.5	14.2	3.3
Queue Length 50th (ft)	6	0	23	0	13	0
Queue Length 95th (ft)	35	9	103	13	63	77
Internal Link Dist (ft)	1061		948			683
Turn Bay Length (ft)	165			405	410	
Base Capacity (vph)	1055	1249	1542	1314	1206	1810
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.02	0.15	0.02	0.09	0.20

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	42	23	206	23	101	336
Future Volume (veh/h)	42	23	206	23	101	336
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	46	25	224	25	110	365
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	131	274	503	426	177	1011
Arrive On Green	0.08	0.08	0.28	0.28	0.10	0.55
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	46	25	224	25	110	365
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	0.7	0.4	2.9	0.3	1.7	3.2
Cycle Q Clear(g_c), s	0.7	0.4	2.9	0.3	1.7	3.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	131	274	503	426	177	1011
V/C Ratio(X)	0.35	0.09	0.45	0.06	0.62	0.36
Avail Cap(c_a), veh/h	850	914	1912	1620	1200	3115
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	1.00
Uniform Delay (d), s/veh	12.7	9.9	8.6	7.7	12.4	3.6
Incr Delay (d2), s/veh	1.6	0.1	0.6	0.1	3.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	0.7	0.1	0.6	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.3	10.1	9.3	7.8	16.0	3.8
LnGrp LOS	B	B	A	A	B	A
Approach Vol, veh/h	71		249			475
Approach Delay, s/veh	12.8		9.1			6.6
Approach LOS	B		A			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	8.0	13.7			21.8	7.1
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	3.7	4.9			5.2	2.7
Green Ext Time (p_c), s	0.2	1.2			2.1	0.1

Intersection Summary	
HCM 6th Ctrl Delay	8.0
HCM 6th LOS	A

1: Tinloy St /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)	6.1	10.6	4.8	6.6

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.2	1.3	0.0	0.5
Total Del/Veh (s)	5.4	6.6	10.4	7.0

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.3	0.2
Total Del/Veh (s)	6.3	7.9	0.9	4.1

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.5	2.1	1.1
Total Del/Veh (s)	17.9	6.2	10.3	9.8	8.7

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.4	2.9	0.7
Total Del/Veh (s)	8.3	13.8	13.5	35.6	16.7

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.4	4.5	24.6	9.2

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.6	1.5	0.0	0.4
Total Del/Veh (s)	8.7	15.2	12.3	3.2	9.1

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	1.9	0.8
Total Del/Veh (s)	9.5	9.2	5.5	7.8

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.9	0.0	0.1	0.8
Total Del/Veh (s)	5.0	5.3	5.9	5.3

Total Zone Performance

Denied Del/Veh (s)	1.2
Total Del/Veh (s)	170.0

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	104	107	66	76
Average Queue (ft)	56	46	28	29
95th Queue (ft)	97	87	58	59
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	2			
Queuing Penalty (veh)	4			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	108	66	90	87	75
Average Queue (ft)	60	24	39	42	31
95th Queue (ft)	99	55	74	73	62
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	0			0	0
Queuing Penalty (veh)	0			0	0
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	0		
Queuing Penalty (veh)		0	0		

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	89	66	33	60	16
Average Queue (ft)	46	36	9	31	1
95th Queue (ft)	74	57	32	48	6
Link Distance (ft)	1196	1196		262	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	51	53	76	94	5	94	61	84	116	73
Average Queue (ft)	16	20	31	31	0	43	29	21	59	27
95th Queue (ft)	43	46	60	66	4	78	56	60	98	60
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)				0						
Queuing Penalty (veh)				0						
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)						0				
Queuing Penalty (veh)						0				

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	123	147	99	131	114	58	105	137	154	53	62
Average Queue (ft)	30	63	53	31	43	20	49	40	83	16	29
95th Queue (ft)	80	122	91	92	99	51	83	99	136	44	53
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	0	0	1	1	1						
Queuing Penalty (veh)	0	0	0	1	1						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			1	1			0				
Queuing Penalty (veh)			1	1			0				

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	<	R	T
Maximum Queue (ft)	61	70	34	51	199	109	50
Average Queue (ft)	9	18	3	5	107	51	2
95th Queue (ft)	35	50	20	29	178	87	23
Link Distance (ft)	456	456	334	334	145	145	915
Upstream Blk Time (%)					4	0	
Queuing Penalty (veh)					0	0	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	56	74	90	98	110	80	80	130	75	135	101	67
Average Queue (ft)	15	34	34	47	48	37	37	57	20	65	38	23
95th Queue (ft)	44	65	71	84	82	68	70	103	52	109	76	56
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	63
Average Queue (ft)	25
95th Queue (ft)	55
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	78	69	41	30	50	45	67	47
Average Queue (ft)	29	27	9	7	17	13	28	15
95th Queue (ft)	61	61	31	25	40	39	58	38
Link Distance (ft)	211	211		1564	1564		800	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	78	55	59	59	54	55	52
Average Queue (ft)	29	20	23	15	9	20	26
95th Queue (ft)	62	42	53	43	35	48	44
Link Distance (ft)	548		211	211	211	1120	1120
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		155					
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 8

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

1830-1930 PM
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	36	3.0	0.085	4.4	LOS A	0.4	9.0	0.42	0.29	0.42	34.3
8	T1	35	3.0	0.085	4.4	LOS A	0.4	9.0	0.42	0.29	0.42	34.3
18	R2	14	3.0	0.085	4.4	LOS A	0.4	9.0	0.42	0.29	0.42	33.3
Approach		85	3.0	0.085	4.4	LOS A	0.4	9.0	0.42	0.29	0.42	34.1
East: Idaho Maryland Rd												
1	L2	142	3.0	0.127	4.3	LOS A	0.5	13.2	0.35	0.23	0.35	32.8
6	T1	158	3.0	0.225	5.3	LOS A	1.0	25.5	0.39	0.27	0.39	35.0
16	R2	92	3.0	0.225	5.3	LOS A	1.0	25.5	0.39	0.27	0.39	33.9
Approach		392	3.0	0.225	5.0	LOS A	1.0	25.5	0.38	0.26	0.38	33.9
North: Main St												
7	L2	51	3.0	0.202	5.4	LOS A	0.8	20.5	0.43	0.34	0.43	34.4
4	T1	156	3.0	0.202	5.4	LOS A	0.8	20.5	0.43	0.34	0.43	34.3
14	R2	210	3.0	0.129	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		417	3.0	0.202	2.7	LOS A	0.8	20.5	0.21	0.17	0.21	35.7
West: Main St												
5	L2	160	3.0	0.254	6.0	LOS A	1.1	27.0	0.46	0.38	0.46	33.0
2	T1	75	3.0	0.254	6.0	LOS A	1.1	27.0	0.46	0.38	0.46	33.0
12	R2	24	3.0	0.254	6.0	LOS A	1.1	27.0	0.46	0.38	0.46	32.1
Approach		258	3.0	0.254	6.0	LOS A	1.1	27.0	0.46	0.38	0.46	32.9
All Vehicles		1151	3.0	0.254	4.3	LOS A	1.1	27.0	0.34	0.25	0.34	34.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection	
Intersection Delay, s/veh	19.7
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	249	146	241	0
Future Vol, veh/h	57	313	4	0	0	0	0	175	249	146	241	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	63	344	4	0	0	0	0	192	274	160	265	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	14.8	28.7	14.6
HCM LOS	B	D	B

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	27%	0%	100%	0%
Vol Thru, %	41%	73%	98%	0%	100%
Vol Right, %	59%	0%	2%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	424	214	161	146	241
LT Vol	0	57	0	146	0
Through Vol	175	157	157	0	241
RT Vol	249	0	4	0	0
Lane Flow Rate	466	235	176	160	265
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.792	0.464	0.341	0.317	0.485
Departure Headway (Hd)	6.122	7.118	6.964	7.105	6.595
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	592	504	515	504	543
Service Time	4.181	4.886	4.732	4.877	4.366
HCM Lane V/C Ratio	0.787	0.466	0.342	0.317	0.488
HCM Control Delay	28.7	16	13.3	13.2	15.5
HCM Lane LOS	D	C	B	B	C
HCM 95th-tile Q	7.6	2.4	1.5	1.3	2.6

Intersection	
Intersection Delay, s/veh	23.4
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	287	48	44	365	268	439
Future Vol, veh/h	287	48	44	365	268	439
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	309	52	47	392	288	472
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	24	16.6	27
HCM LOS	C	C	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	27%	0%
Vol Thru, %	0%	0%	86%	73%	100%
Vol Right, %	0%	100%	14%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	268	439	335	166	243
LT Vol	268	0	0	44	0
Through Vol	0	0	287	122	243
RT Vol	0	439	48	0	0
Lane Flow Rate	288	472	360	178	262
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.595	0.815	0.689	0.368	0.531
Departure Headway (Hd)	7.435	6.212	6.881	7.438	7.302
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	484	581	522	481	492
Service Time	5.211	3.987	4.951	5.223	5.087
HCM Lane V/C Ratio	0.595	0.812	0.69	0.37	0.533
HCM Control Delay	20.6	30.9	24	14.5	18.1
HCM Lane LOS	C	D	C	B	C
HCM 95th-tile Q	3.8	8.2	5.3	1.7	3.1

Intersection	
Intersection Delay, s/veh	13
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	589	122	22	331	82	30
Future Vol, veh/h	589	122	22	331	82	30
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	620	128	23	348	86	32
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	14.2	11.2	10.7
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	73%	0%	0%	17%	0%
Vol Thru, %	0%	100%	62%	83%	100%
Vol Right, %	27%	0%	38%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	112	393	318	132	221
LT Vol	82	0	0	22	0
Through Vol	0	393	196	110	221
RT Vol	30	0	122	0	0
Lane Flow Rate	118	413	335	139	232
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.201	0.605	0.465	0.226	0.371
Departure Headway (Hd)	6.147	5.271	5.001	5.833	5.749
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	586	678	710	620	629
Service Time	4.159	3.066	2.795	3.533	3.449
HCM Lane V/C Ratio	0.201	0.609	0.472	0.224	0.369
HCM Control Delay	10.7	15.9	12.1	10.2	11.8
HCM Lane LOS	B	C	B	B	B
HCM 95th-tile Q	0.7	4.1	2.5	0.9	1.7

Intersection	
Int Delay, s/veh	14.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	166	64	0	107	219	456	19	38	323	8
Future Vol, veh/h	0	0	166	64	0	107	219	456	19	38	323	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	550	-	-	120	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	177	68	0	114	233	485	20	40	344	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	1395	344	1478	1394	495	353	0	0	505	0	0
Stage 1	-	424	-	961	961	-	-	-	-	-	-	-
Stage 2	-	971	-	517	433	-	-	-	-	-	-	-
Critical Hdwy	-	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	-	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	141	699	104	141	575	1206	-	-	1060	-	-
Stage 1	0	587	-	308	335	-	-	-	-	-	-	-
Stage 2	0	331	-	541	582	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	109	699	~ 64	109	575	1206	-	-	1060	-	-
Mov Cap-2 Maneuver	-	109	-	~ 64	109	-	-	-	-	-	-	-
Stage 1	-	565	-	249	270	-	-	-	-	-	-	-
Stage 2	-	267	-	389	560	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.9	97.9	2.7	0.9
HCM LOS	B	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1206	-	-	699	64	575	1060	-	-
HCM Lane V/C Ratio	0.193	-	-	0.253	1.064	0.198	0.038	-	-
HCM Control Delay (s)	8.7	-	-	11.9	240.3	12.8	8.5	-	-
HCM Lane LOS	A	-	-	B	F	B	A	-	-
HCM 95th %tile Q(veh)	0.7	-	-	1	5.3	0.7	0.1	-	-

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

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	45	69	675	445	90
Future Vol, veh/h	22	45	69	675	445	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	50	77	750	494	100

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1448	297	594	0	-	0
Stage 1	544	-	-	-	-	-
Stage 2	904	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	133	700	980	-	-	-
Stage 1	547	-	-	-	-	-
Stage 2	394	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	122	700	980	-	-	-
Mov Cap-2 Maneuver	315	-	-	-	-	-
Stage 1	504	-	-	-	-	-
Stage 2	394	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.8	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	980	-	315	700	-	-
HCM Lane V/C Ratio	0.078	-	0.078	0.071	-	-
HCM Control Delay (s)	9	-	17.4	10.5	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.3	0.2	-	-

Intersection	
Intersection Delay, s/veh	29.1
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	23	12	28	57	182	20	484	13	61	200	27
Future Vol, veh/h	31	23	12	28	57	182	20	484	13	61	200	27
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	25	13	30	61	196	22	520	14	66	215	29
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	11.6	15.5	46.8	13.9
HCM LOS	B	C	E	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	47%	10%	100%	0%
Vol Thru, %	0%	97%	35%	21%	0%	88%
Vol Right, %	0%	3%	18%	68%	0%	12%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	20	497	66	267	61	227
LT Vol	20	0	31	28	61	0
Through Vol	0	484	23	57	0	200
RT Vol	0	13	12	182	0	27
Lane Flow Rate	22	534	71	287	66	244
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.041	0.937	0.144	0.5	0.131	0.448
Departure Headway (Hd)	6.841	6.312	7.324	6.265	7.207	6.61
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	527	577	488	574	497	544
Service Time	4.541	4.012	5.396	4.313	4.96	4.362
HCM Lane V/C Ratio	0.042	0.925	0.145	0.5	0.133	0.449
HCM Control Delay	9.8	48.3	11.6	15.5	11.1	14.7
HCM Lane LOS	A	E	B	C	B	B
HCM 95th-tile Q	0.1	12.1	0.5	2.8	0.4	2.3

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	112	160	263	389	149	101
Future Vol, veh/h	112	160	263	389	149	101
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	119	170	280	414	159	107

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	280	0	-	0	688	280
Stage 1	-	-	-	-	280	-
Stage 2	-	-	-	-	408	-
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	1283	-	-	0	412	759
Stage 1	-	-	-	0	767	-
Stage 2	-	-	-	0	671	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1283	-	-	-	374	759
Mov Cap-2 Maneuver	-	-	-	-	374	-
Stage 1	-	-	-	-	696	-
Stage 2	-	-	-	-	671	-

Approach	EB	WB	SB
HCM Control Delay, s	3.3	0	17.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1283	-	-	374	759
HCM Lane V/C Ratio	0.093	-	-	0.424	0.142
HCM Control Delay (s)	8.1	-	-	21.5	10.5
HCM Lane LOS	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	-	-	2.1	0.5

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	517	240	0
Future Vol, veh/h	0	0	0	517	240	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	539	250	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	789	250	250	0	-	0
Stage 1	250	-	-	-	-	-
Stage 2	539	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	359	789	1316	-	-	-
Stage 1	792	-	-	-	-	-
Stage 2	585	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	359	789	1316	-	-	-
Mov Cap-2 Maneuver	523	-	-	-	-	-
Stage 1	792	-	-	-	-	-
Stage 2	585	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1316	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	66	0	0	104	0	0
Future Vol, veh/h	66	0	0	104	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	72	0	0	113	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	72	0	185	72
Stage 1	-	-	-	-	72	-
Stage 2	-	-	-	-	113	-
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	-	-	1528	-	804	990
Stage 1	-	-	-	-	951	-
Stage 2	-	-	-	-	912	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1528	-	804	990
Mov Cap-2 Maneuver	-	-	-	-	804	-
Stage 1	-	-	-	-	951	-
Stage 2	-	-	-	-	912	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1528	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	309	0	0	106	0	0	0	0	0	0	0
Future Vol, veh/h	0	309	0	0	106	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	368	0	0	126	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	126	0	0	368	0	0	494	494	368	494	494	126
Stage 1	-	-	-	-	-	-	368	368	-	126	126	-
Stage 2	-	-	-	-	-	-	126	126	-	368	368	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1460	-	-	1191	-	-	486	476	677	486	476	924
Stage 1	-	-	-	-	-	-	652	621	-	878	792	-
Stage 2	-	-	-	-	-	-	878	792	-	652	621	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1460	-	-	1191	-	-	486	476	677	486	476	924
Mov Cap-2 Maneuver	-	-	-	-	-	-	486	476	-	486	476	-
Stage 1	-	-	-	-	-	-	652	621	-	878	792	-
Stage 2	-	-	-	-	-	-	878	792	-	652	621	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1460	-	-	1191	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	216	236	26	214	74	12
Future Vol, veh/h	216	236	26	214	74	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	223	243	27	221	76	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	466	0	498	223
Stage 1	-	-	-	-	223	-
Stage 2	-	-	-	-	275	-
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	-	-	1095	-	532	817
Stage 1	-	-	-	-	814	-
Stage 2	-	-	-	-	771	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1095	-	519	817
Mov Cap-2 Maneuver	-	-	-	-	519	-
Stage 1	-	-	-	-	814	-
Stage 2	-	-	-	-	752	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	12.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	547	-	-	1095	-
HCM Lane V/C Ratio	0.162	-	-	0.024	-
HCM Control Delay (s)	12.9	-	-	8.4	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	109	109	111	88	38	123
Future Vol, veh/h	109	109	111	88	38	123
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	128	128	131	104	45	145
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	10.3	9.3	9
HCM LOS	B	A	A

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	50%	0%	100%	0%
Vol Thru, %	50%	56%	0%	0%
Vol Right, %	0%	44%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	218	199	38	123
LT Vol	109	0	38	0
Through Vol	109	111	0	0
RT Vol	0	88	0	123
Lane Flow Rate	256	234	45	145
Geometry Grp	2	2	7	7
Degree of Util (X)	0.34	0.29	0.076	0.199
Departure Headway (Hd)	4.772	4.453	6.15	4.939
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	751	805	581	722
Service Time	2.817	2.496	3.908	2.696
HCM Lane V/C Ratio	0.341	0.291	0.077	0.201
HCM Control Delay	10.3	9.3	9.4	8.9
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.5	1.2	0.2	0.7

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	97	56	87	84	88	79
Future Vol, veh/h	97	56	87	84	88	79
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	108	62	97	93	98	88
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	9.1	9.4	8.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	51%	63%	0%	0%
Vol Thru, %	49%	0%	100%	0%
Vol Right, %	0%	37%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	171	153	88	79
LT Vol	87	97	0	0
Through Vol	84	0	88	0
RT Vol	0	56	0	79
Lane Flow Rate	190	170	98	88
Geometry Grp	5	2	7	7
Degree of Util (X)	0.251	0.222	0.139	0.108
Departure Headway (Hd)	4.758	4.704	5.118	4.413
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	754	763	700	811
Service Time	2.791	2.735	2.85	2.145
HCM Lane V/C Ratio	0.252	0.223	0.14	0.109
HCM Control Delay	9.4	9.1	8.7	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1	0.8	0.5	0.4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	59	198	611	147	299	254
v/c Ratio	0.26	0.30	0.79	0.20	0.66	0.17
Control Delay	31.9	6.4	27.2	3.9	31.1	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.9	6.4	27.2	3.9	31.1	2.9
Queue Length 50th (ft)	24	18	226	0	120	26
Queue Length 95th (ft)	59	54	#449	33	212	54
Internal Link Dist (ft)	926		735			673
Turn Bay Length (ft)	165			405	410	
Base Capacity (vph)	439	797	990	908	619	1531
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.25	0.62	0.16	0.48	0.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	54	182	562	135	275	234
Future Volume (veh/h)	54	182	562	135	275	234
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	59	198	611	147	299	254
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	236	529	714	605	359	1248
Arrive On Green	0.14	0.14	0.39	0.39	0.21	0.68
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	59	198	611	147	299	254
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	1.8	5.7	18.1	3.8	9.8	3.0
Cycle Q Clear(g_c), s	1.8	5.7	18.1	3.8	9.8	3.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	236	529	714	605	359	1248
V/C Ratio(X)	0.25	0.37	0.86	0.24	0.83	0.20
Avail Cap(c_a), veh/h	414	688	932	789	585	1518
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	1.00
Uniform Delay (d), s/veh	22.9	14.7	16.5	12.1	22.5	3.4
Incr Delay (d2), s/veh	0.5	0.4	6.3	0.2	5.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.9	7.2	1.1	4.0	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.4	15.1	22.8	12.3	28.0	3.5
LnGrp LOS	C	B	C	B	C	A
Approach Vol, veh/h	257		758			553
Approach Delay, s/veh	17.0		20.7			16.8
Approach LOS	B		C			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	17.3	29.0			46.3	12.9
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	11.8	20.1			5.0	7.7
Green Ext Time (p_c), s	0.5	3.0			1.4	0.4

Intersection Summary	
HCM 6th Ctrl Delay	18.7
HCM 6th LOS	B

1: Tinloy St /Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.3	0.0	0.1
Total Del/Veh (s)	8.8	23.9	5.8	12.6

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	1.2	0.0	0.6
Total Del/Veh (s)	5.3	8.8	15.7	9.8

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.3	0.2
Total Del/Veh (s)	8.5	9.1	1.1	6.1

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.5	1.9	1.0
Total Del/Veh (s)	14.6	8.2	11.9	12.3	10.4

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.5	2.8	0.8
Total Del/Veh (s)	9.7	12.8	13.9	34.0	17.4

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.6	7.5	24.5	12.7

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.5	1.4	0.0	0.3
Total Del/Veh (s)	11.4	19.3	17.2	5.0	12.8

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.1	0.4	1.7	0.9
Total Del/Veh (s)	18.0	18.4	11.5	15.0

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.6	0.0	0.2	0.4
Total Del/Veh (s)	13.8	7.5	13.5	10.0

Total Zone Performance

Denied Del/Veh (s)	1.1
Total Del/Veh (s)	320.8

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	106	276	107	73
Average Queue (ft)	71	119	47	31
95th Queue (ft)	113	226	88	60
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	5			
Queuing Penalty (veh)	14			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	129	120	188	119	96
Average Queue (ft)	55	42	81	68	46
95th Queue (ft)	104	91	144	110	84
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	0			2	0
Queuing Penalty (veh)	0			4	0
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	3		
Queuing Penalty (veh)		0	8		

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	126	91	33	78	15
Average Queue (ft)	63	49	9	43	1
95th Queue (ft)	103	80	32	66	8
Link Distance (ft)	1196	1196		262	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	T	R	L	L	T
Maximum Queue (ft)	58	99	104	125	129	95	99	132	120
Average Queue (ft)	19	43	51	51	54	38	29	66	49
95th Queue (ft)	46	81	90	101	98	70	70	108	97
Link Distance (ft)	777	160	160	160	1486				1622
Upstream Blk Time (%)			0	0					
Queuing Penalty (veh)			0	0					
Storage Bay Dist (ft)						115	360	360	
Storage Blk Time (%)					0	0			
Queuing Penalty (veh)					0	0			

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	152	171	102	179	170	72	100	160	180	85	108
Average Queue (ft)	48	75	62	59	75	18	46	71	109	28	44
95th Queue (ft)	111	147	105	145	148	52	80	146	170	67	79
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	0	0	2	3	3						
Queuing Penalty (veh)	0	1	0	9	8						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			2	3		0	0		0		
Queuing Penalty (veh)			4	3		0	0		0		

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	<	R	T
Maximum Queue (ft)	96	112	103	133	214	222	308
Average Queue (ft)	33	36	24	30	153	123	49
95th Queue (ft)	79	87	71	91	230	212	198
Link Distance (ft)	456	456	334	334	145	145	915
Upstream Blk Time (%)					16	8	
Queuing Penalty (veh)					0	0	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	94	111	128	144	114	108	165	212	62	130	96	80
Average Queue (ft)	35	56	63	77	58	51	72	111	17	59	34	34
95th Queue (ft)	71	92	110	121	97	90	128	182	47	109	72	66
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)						0	1					
Queuing Penalty (veh)						0	1					

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	82
Average Queue (ft)	32
95th Queue (ft)	67
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	117	194	79	113	132	143	260	141
Average Queue (ft)	52	95	25	55	58	38	122	36
95th Queue (ft)	98	164	59	98	109	91	207	93
Link Distance (ft)	211	211		1564	1564		800	
Upstream Blk Time (%)		0						
Queuing Penalty (veh)		0						
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)			0	0			1	0
Queuing Penalty (veh)			0	0			2	0

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	185	129	155	170	163	132	89
Average Queue (ft)	77	30	70	62	56	60	40
95th Queue (ft)	145	80	126	122	117	108	72
Link Distance (ft)	548		211	211	211	1120	1120
Upstream Blk Time (%)			0	0	0		
Queuing Penalty (veh)			0	0	0		
Storage Bay Dist (ft)		155					
Storage Blk Time (%)	1	0					
Queuing Penalty (veh)	1	0					

Zone Summary

Zone wide Queuing Penalty: 58

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

EPAP AM Peak
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	36	3.0	0.249	7.7	LOS A	1.1	27.5	0.61	0.60	0.61	33.3
8	T1	67	3.0	0.249	7.7	LOS A	1.1	27.5	0.61	0.60	0.61	33.3
18	R2	83	3.0	0.249	7.7	LOS A	1.1	27.5	0.61	0.60	0.61	32.3
Approach		186	3.0	0.249	7.7	LOS A	1.1	27.5	0.61	0.60	0.61	32.8
East: Idaho Maryland Rd												
1	L2	233	3.0	0.241	6.1	LOS A	1.0	26.5	0.49	0.42	0.49	32.0
6	T1	136	3.0	0.419	8.5	LOS A	2.1	53.8	0.58	0.51	0.58	33.3
16	R2	270	3.0	0.419	8.5	LOS A	2.1	53.8	0.58	0.51	0.58	32.3
Approach		639	3.0	0.419	7.6	LOS A	2.1	53.8	0.54	0.48	0.54	32.4
North: Main St												
7	L2	129	3.0	0.323	7.1	LOS A	1.4	35.7	0.51	0.46	0.51	33.1
4	T1	183	3.0	0.323	7.1	LOS A	1.4	35.7	0.51	0.46	0.51	33.0
14	R2	207	3.0	0.127	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		519	3.0	0.323	4.3	LOS A	1.4	35.7	0.31	0.28	0.31	34.5
West: Main St												
5	L2	276	3.0	0.520	11.3	LOS B	3.6	90.9	0.67	0.79	1.00	30.7
2	T1	154	3.0	0.520	11.3	LOS B	3.6	90.9	0.67	0.79	1.00	30.7
12	R2	14	3.0	0.520	11.3	LOS B	3.6	90.9	0.67	0.79	1.00	29.9
Approach		444	3.0	0.520	11.3	LOS B	3.6	90.9	0.67	0.79	1.00	30.7
All Vehicles		1788	3.0	0.520	7.6	LOS A	3.6	90.9	0.51	0.51	0.60	32.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	15.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	60	282	1	0	0	0	0	119	156	174	329	0
Future Vol, veh/h	60	282	1	0	0	0	0	119	156	174	329	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	67	313	1	0	0	0	0	132	173	193	366	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	15.9	17.2
HCM LOS	B	C	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	30%	0%	100%	0%
Vol Thru, %	43%	70%	99%	0%	100%
Vol Right, %	57%	0%	1%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	275	201	142	174	329
LT Vol	0	60	0	174	0
Through Vol	119	141	141	0	329
RT Vol	156	0	1	0	0
Lane Flow Rate	306	223	158	193	366
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.524	0.434	0.299	0.363	0.634
Departure Headway (Hd)	6.172	6.988	6.832	6.753	6.245
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	584	514	525	532	578
Service Time	4.225	4.744	4.587	4.508	3.999
HCM Lane V/C Ratio	0.524	0.434	0.301	0.363	0.633
HCM Control Delay	15.9	15	12.5	13.3	19.3
HCM Lane LOS	C	B	B	B	C
HCM 95th-tile Q	3	2.2	1.2	1.6	4.4

Intersection	
Intersection Delay, s/veh	31.2
Intersection LOS	D

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	215	53	66	732	169	227
Future Vol, veh/h	215	53	66	732	169	227
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	239	59	73	813	188	252
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	17.6	43.4	15.7
HCM LOS	C	E	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	21%	0%
Vol Thru, %	0%	0%	80%	79%	100%
Vol Right, %	0%	100%	20%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	169	227	268	310	488
LT Vol	169	0	0	66	0
Through Vol	0	0	215	244	488
RT Vol	0	227	53	0	0
Lane Flow Rate	188	252	298	344	542
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.413	0.469	0.55	0.631	0.978
Departure Headway (Hd)	7.914	6.687	6.644	6.599	6.491
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	454	537	542	544	558
Service Time	5.678	4.451	4.703	4.364	4.255
HCM Lane V/C Ratio	0.414	0.469	0.55	0.632	0.971
HCM Control Delay	16.2	15.3	17.6	20.1	58.2
HCM Lane LOS	C	C	C	C	F
HCM 95th-tile Q	2	2.5	3.3	4.4	13.5

Intersection	
Intersection Delay, s/veh	19.6
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	426	72	23	682	93	30
Future Vol, veh/h	426	72	23	682	93	30
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	490	83	26	784	107	34
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	14.4	24.6	12
HCM LOS	B	C	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	76%	0%	0%	9%	0%
Vol Thru, %	0%	100%	66%	91%	100%
Vol Right, %	24%	0%	34%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	123	284	214	250	455
LT Vol	93	0	0	23	0
Through Vol	0	284	142	227	455
RT Vol	30	0	72	0	0
Lane Flow Rate	141	326	246	288	523
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.26	0.547	0.396	0.463	0.834
Departure Headway (Hd)	6.628	6.034	5.795	5.794	5.747
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	543	597	620	622	632
Service Time	4.665	3.771	3.533	3.526	3.48
HCM Lane V/C Ratio	0.26	0.546	0.397	0.463	0.828
HCM Control Delay	12	15.9	12.3	13.4	30.8
HCM Lane LOS	B	C	B	B	D
HCM 95th-tile Q	1	3.3	1.9	2.4	8.9

Intersection	
Int Delay, s/veh	9.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	209	25	0	76	247	472	57	94	459	14
Future Vol, veh/h	0	0	209	25	0	76	247	472	57	94	459	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	50	-	0	550	-	-	120	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	215	26	0	78	255	487	59	97	473	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	473	1809	-	517	487	0	0	546	0	0
Stage 1	-	-	-	1027	-	-	-	-	-	-	-	-
Stage 2	-	-	-	782	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.22	7.12	-	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	6.12	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.12	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.318	3.518	-	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	0	591	61	0	558	1076	-	-	1023	-	-
Stage 1	0	0	-	283	0	-	-	-	-	-	-	-
Stage 2	0	0	-	387	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	591	29	-	558	1076	-	-	1023	-	-
Mov Cap-2 Maneuver	-	-	-	29	-	-	-	-	-	-	-	-
Stage 1	-	-	-	216	-	-	-	-	-	-	-	-
Stage 2	-	-	-	223	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.5	90.7	3	1.5
HCM LOS	B	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1076	-	-	591	29	558	1023	-	-
HCM Lane V/C Ratio	0.237	-	-	0.365	0.889	0.14	0.095	-	-
HCM Control Delay (s)	9.4	-	-	14.5	$ 328.3	12.5	8.9	-	-
HCM Lane LOS	A	-	-	B	F	B	A	-	-
HCM 95th %tile Q(veh)	0.9	-	-	1.7	2.9	0.5	0.3	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	90	58	25	684	645	42
Future Vol, veh/h	90	58	25	684	645	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	95	61	26	720	679	44

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1473	362	723	0	-	0
Stage 1	701	-	-	-	-	-
Stage 2	772	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	128	635	877	-	-	-
Stage 1	454	-	-	-	-	-
Stage 2	455	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	124	635	877	-	-	-
Mov Cap-2 Maneuver	322	-	-	-	-	-
Stage 1	440	-	-	-	-	-
Stage 2	455	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.1	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	877	-	322	635	-	-
HCM Lane V/C Ratio	0.03	-	0.294	0.096	-	-
HCM Control Delay (s)	9.2	-	20.8	11.3	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.2	0.3	-	-

Intersection	
Intersection Delay, s/veh	22
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	29	19	25	44	85	9	320	36	153	493	33
Future Vol, veh/h	20	29	19	25	44	85	9	320	36	153	493	33
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	29	19	25	44	86	9	323	36	155	498	33
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	11	11.9	17.8	27.6
HCM LOS	B	B	C	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	29%	16%	100%	0%
Vol Thru, %	0%	90%	43%	29%	0%	94%
Vol Right, %	0%	10%	28%	55%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	356	68	154	153	526
LT Vol	9	0	20	25	153	0
Through Vol	0	320	29	44	0	493
RT Vol	0	36	19	85	0	33
Lane Flow Rate	9	360	69	156	155	531
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.017	0.61	0.13	0.275	0.27	0.847
Departure Headway (Hd)	6.689	6.109	6.836	6.362	6.292	5.74
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	533	590	521	562	570	627
Service Time	4.453	3.872	4.927	4.437	4.044	3.493
HCM Lane V/C Ratio	0.017	0.61	0.132	0.278	0.272	0.847
HCM Control Delay	9.6	18	11	11.9	11.4	32.3
HCM Lane LOS	A	C	B	B	B	D
HCM 95th-tile Q	0.1	4.1	0.4	1.1	1.1	9.3

Intersection	
Int Delay, s/veh	38.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	74	226	239	262	393	110
Future Vol, veh/h	74	226	239	262	393	110
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	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	80	246	260	285	427	120

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	260	0	-	0	666	260
Stage 1	-	-	-	-	260	-
Stage 2	-	-	-	-	406	-
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	1304	-	-	0	~ 425	779
Stage 1	-	-	-	0	783	-
Stage 2	-	-	-	0	673	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1304	-	-	-	~ 399	779
Mov Cap-2 Maneuver	-	-	-	-	~ 399	-
Stage 1	-	-	-	-	735	-
Stage 2	-	-	-	-	673	-

Approach	EB	WB	SB
HCM Control Delay, s	2	0	78.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1304	-	-	399	779
HCM Lane V/C Ratio	0.062	-	-	1.071	0.153
HCM Control Delay (s)	7.9	-	-	97.7	10.5
HCM Lane LOS	A	-	-	F	B
HCM 95th %tile Q(veh)	0.2	-	-	14.5	0.5

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

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	365	537	0
Future Vol, veh/h	0	0	0	365	537	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	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	0	0	0	397	584	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	981	584	584	0	-	0
Stage 1	584	-	-	-	-	-
Stage 2	397	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	277	512	991	-	-	-
Stage 1	557	-	-	-	-	-
Stage 2	679	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	277	512	991	-	-	-
Mov Cap-2 Maneuver	470	-	-	-	-	-
Stage 1	557	-	-	-	-	-
Stage 2	679	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	991	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	68	0	0	86	0	0
Future Vol, veh/h	68	0	0	86	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	74	0	0	93	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	74	0	167	74
Stage 1	-	-	-	-	74	-
Stage 2	-	-	-	-	93	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1526	-	823	988
Stage 1	-	-	-	-	949	-
Stage 2	-	-	-	-	931	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1526	-	823	988
Mov Cap-2 Maneuver	-	-	-	-	823	-
Stage 1	-	-	-	-	949	-
Stage 2	-	-	-	-	931	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1526	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	114	0	0	261	0	0	0	0	0	0	0
Future Vol, veh/h	0	114	0	0	261	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	152	0	0	348	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	348	0	0	152	0	0	500	500	152	500	500	348
Stage 1	-	-	-	-	-	-	152	152	-	348	348	-
Stage 2	-	-	-	-	-	-	348	348	-	152	152	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1211	-	-	1429	-	-	481	473	894	481	473	695
Stage 1	-	-	-	-	-	-	850	772	-	668	634	-
Stage 2	-	-	-	-	-	-	668	634	-	850	772	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1211	-	-	1429	-	-	481	473	894	481	473	695
Mov Cap-2 Maneuver	-	-	-	-	-	-	481	473	-	481	473	-
Stage 1	-	-	-	-	-	-	850	772	-	668	634	-
Stage 2	-	-	-	-	-	-	668	634	-	850	772	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1211	-	-	1429	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	25.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	299	120	12	385	245	37
Future Vol, veh/h	299	120	12	385	245	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	374	150	15	481	306	46

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	524	0	885	374
Stage 1	-	-	-	-	374	-
Stage 2	-	-	-	-	511	-
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	-	-	1043	-	315	672
Stage 1	-	-	-	-	696	-
Stage 2	-	-	-	-	602	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1043	-	311	672
Mov Cap-2 Maneuver	-	-	-	-	311	-
Stage 1	-	-	-	-	696	-
Stage 2	-	-	-	-	594	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	99.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	335	-	-	1043	-
HCM Lane V/C Ratio	1.052	-	-	0.014	-
HCM Control Delay (s)	99.8	-	-	8.5	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	12.6	-	-	0	-

Intersection	
Intersection Delay, s/veh	13.8
Intersection LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	212	110	199	67	107	208
Future Vol, veh/h	212	110	199	67	107	208
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	249	129	234	79	126	245
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	16.2	13.2	11.9
HCM LOS	C	B	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	66%	0%	100%	0%
Vol Thru, %	34%	75%	0%	0%
Vol Right, %	0%	25%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	322	266	107	208
LT Vol	212	0	107	0
Through Vol	110	199	0	0
RT Vol	0	67	0	208
Lane Flow Rate	379	313	126	245
Geometry Grp	2	2	7	7
Degree of Util (X)	0.586	0.47	0.241	0.385
Departure Headway (Hd)	5.573	5.407	6.885	5.666
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	648	667	521	634
Service Time	3.612	3.449	4.627	3.407
HCM Lane V/C Ratio	0.585	0.469	0.242	0.386
HCM Control Delay	16.2	13.2	11.8	11.9
HCM Lane LOS	C	B	B	B
HCM 95th-tile Q	3.8	2.5	0.9	1.8

Intersection	
Intersection Delay, s/veh	15.6
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	144	186	125	172	179	179
Future Vol, veh/h	144	186	125	172	179	179
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	173	224	151	207	216	216
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	17.9	17.4	12.1
HCM LOS	C	C	B

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	42%	44%	0%	0%
Vol Thru, %	58%	0%	100%	0%
Vol Right, %	0%	56%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	297	330	179	179
LT Vol	125	144	0	0
Through Vol	172	0	179	0
RT Vol	0	186	0	179
Lane Flow Rate	358	398	216	216
Geometry Grp	5	2	7	7
Degree of Util (X)	0.592	0.627	0.377	0.335
Departure Headway (Hd)	5.951	5.673	6.301	5.588
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	605	632	569	641
Service Time	4.012	3.731	4.067	3.354
HCM Lane V/C Ratio	0.592	0.63	0.38	0.337
HCM Control Delay	17.4	17.9	12.9	11.2
HCM Lane LOS	C	C	B	B
HCM 95th-tile Q	3.9	4.4	1.7	1.5

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	159	358	413	49	132	579
v/c Ratio	0.46	0.45	0.65	0.09	0.39	0.46
Control Delay	27.9	5.4	21.6	5.3	26.5	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.9	5.4	21.6	5.3	26.5	7.1
Queue Length 50th (ft)	45	16	111	0	38	90
Queue Length 95th (ft)	125	75	237	19	102	174
Internal Link Dist (ft)	1009		858			663
Turn Bay Length (ft)	165			505	410	
Base Capacity (vph)	510	1080	1115	966	720	1664
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.33	0.37	0.05	0.18	0.35

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	146	329	380	45	121	533
Future Volume (veh/h)	146	329	380	45	121	533
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	159	358	413	49	132	579
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	439	546	547	463	174	935
Arrive On Green	0.25	0.25	0.30	0.30	0.10	0.51
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	159	358	413	49	132	579
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	3.4	8.8	9.3	1.0	3.4	10.3
Cycle Q Clear(g_c), s	3.4	8.8	9.3	1.0	3.4	10.3
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	439	546	547	463	174	935
V/C Ratio(X)	0.36	0.66	0.76	0.11	0.76	0.62
Avail Cap(c_a), veh/h	540	635	1214	1029	762	1978
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	1.00
Uniform Delay (d), s/veh	14.0	12.4	14.4	11.5	19.9	7.9
Incr Delay (d2), s/veh	0.5	2.0	2.2	0.1	6.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.8	3.1	0.3	1.4	2.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.5	14.3	16.6	11.6	26.5	8.6
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	517		462			711
Approach Delay, s/veh	14.4		16.0			11.9
Approach LOS	B		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	9.7	19.4			29.1	16.4
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	5.4	11.3			12.3	10.8
Green Ext Time (p_c), s	0.3	2.3			3.8	0.6

Intersection Summary	
HCM 6th Ctrl Delay	13.8
HCM 6th LOS	B

1: Tinloy St /Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.0	0.1
Total Del/Veh (s)	10.4	22.5	6.0	11.5

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	1.0	0.0	0.4
Total Del/Veh (s)	5.9	8.9	18.3	10.5

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.5	0.3
Total Del/Veh (s)	11.8	10.3	1.9	7.4

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.5	2.1	1.2
Total Del/Veh (s)	17.3	10.5	17.7	17.1	14.7

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.5	2.7	0.8
Total Del/Veh (s)	14.8	14.6	21.4	37.6	21.4

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.3	9.6	26.8	13.5

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.6	1.5	0.0	0.4
Total Del/Veh (s)	17.1	34.6	29.2	12.7	23.1

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.5	2.7	0.9
Total Del/Veh (s)	12.9	14.6	13.2	13.6

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	2.7	0.0	0.2	1.2
Total Del/Veh (s)	18.9	11.3	16.0	15.5

Total Zone Performance

Denied Del/Veh (s)	1.4
Total Del/Veh (s)	704.8

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	112	223	101	108
Average Queue (ft)	76	99	47	48
95th Queue (ft)	119	185	90	89
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	7			
Queuing Penalty (veh)	21			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	143	108	195	123	110
Average Queue (ft)	84	33	85	77	61
95th Queue (ft)	140	77	154	120	105
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	1			5	1
Queuing Penalty (veh)	4			7	2
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	3		
Queuing Penalty (veh)		0	6		

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	158	153	49	82	33
Average Queue (ft)	78	68	17	41	4
95th Queue (ft)	127	118	43	65	20
Link Distance (ft)	1196	1196		262	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	40	112	114	168	31	239	139	192	209	151
Average Queue (ft)	12	49	49	83	2	99	67	74	116	60
95th Queue (ft)	37	93	91	152	18	193	130	161	187	123
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)		0	0	0						
Queuing Penalty (veh)		0	0	1						
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)						5	1			
Queuing Penalty (veh)						8	3			

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	182	194	102	173	177	102	196	212	224	104	104
Average Queue (ft)	99	138	61	58	100	33	87	114	141	40	47
95th Queue (ft)	183	211	101	135	181	79	161	188	200	87	81
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	1	7	2	3	7						
Queuing Penalty (veh)	3	24	0	9	25						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			2	3		0	7	0	0		
Queuing Penalty (veh)			5	3		1	2	0	0		

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	R	<	R	T
Maximum Queue (ft)	159	163	191	254	93	214	232	311
Average Queue (ft)	55	59	59	79	4	140	164	68
95th Queue (ft)	123	126	150	190	60	220	249	236
Link Distance (ft)	456	456	334	334	334	145	145	915
Upstream Blk Time (%)				0	0	12	23	
Queuing Penalty (veh)				0	0	0	0	
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	126	146	199	199	185	185	246	327	252	310	204	146
Average Queue (ft)	59	81	103	113	93	88	120	191	92	170	89	63
95th Queue (ft)	107	126	171	179	159	157	208	287	202	263	165	118
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)			0	0		3	7		0	1		
Queuing Penalty (veh)			0	0		10	10		0	2		

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	116
Average Queue (ft)	52
95th Queue (ft)	94
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	188	218	140	150	155	96	131	126
Average Queue (ft)	83	102	65	54	73	41	61	54
95th Queue (ft)	153	193	120	112	134	80	109	95
Link Distance (ft)	211	211		1564	1564		800	
Upstream Blk Time (%)	0	1						
Queuing Penalty (veh)	0	3						
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)			0	0				
Queuing Penalty (veh)			1	0				

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	441	180	216	131	130	199	83
Average Queue (ft)	176	106	110	41	38	94	35
95th Queue (ft)	371	202	186	99	96	161	64
Link Distance (ft)	548		211	211	211	1120	1120
Upstream Blk Time (%)	1		0				
Queuing Penalty (veh)	0		1				
Storage Bay Dist (ft)		155					
Storage Blk Time (%)	9	1					
Queuing Penalty (veh)	34	4					

Zone Summary

Zone wide Queuing Penalty: 189

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

EPAP PM Peak
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	75	3.0	0.244	6.5	LOS A	1.1	28.4	0.54	0.46	0.54	33.5
8	T1	71	3.0	0.244	6.5	LOS A	1.1	28.4	0.54	0.46	0.54	33.4
18	R2	73	3.0	0.244	6.5	LOS A	1.1	28.4	0.54	0.46	0.54	32.5
Approach		218	3.0	0.244	6.5	LOS A	1.1	28.4	0.54	0.46	0.54	33.1
East: Idaho Maryland Rd												
1	L2	335	3.0	0.338	7.2	LOS A	1.6	40.7	0.52	0.44	0.52	31.6
6	T1	249	3.0	0.485	9.4	LOS A	3.1	79.2	0.60	0.57	0.69	32.9
16	R2	234	3.0	0.485	9.4	LOS A	3.1	79.2	0.60	0.57	0.69	31.9
Approach		818	3.0	0.485	8.5	LOS A	3.1	79.2	0.57	0.52	0.62	32.0
North: Main St												
7	L2	77	3.0	0.374	9.3	LOS A	1.7	44.0	0.63	0.67	0.74	32.4
4	T1	213	3.0	0.374	9.3	LOS A	1.7	44.0	0.63	0.67	0.74	32.4
14	R2	329	3.0	0.203	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		619	3.0	0.374	4.3	LOS A	1.7	44.0	0.29	0.31	0.35	34.7
West: Main St												
5	L2	207	3.0	0.431	10.0	LOS B	2.3	58.7	0.65	0.72	0.85	31.2
2	T1	102	3.0	0.431	10.0	LOS B	2.3	58.7	0.65	0.72	0.85	31.2
12	R2	35	3.0	0.431	10.0	LOS B	2.3	58.7	0.65	0.72	0.85	30.4
Approach		344	3.0	0.431	10.0	LOS B	2.3	58.7	0.65	0.72	0.85	31.1
All Vehicles		1999	3.0	0.485	7.3	LOS A	3.1	79.2	0.49	0.48	0.57	32.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection	
Intersection Delay, s/veh	9.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	96	2	0	0	0	0	84	100	89	97	0
Future Vol, veh/h	15	96	2	0	0	0	0	84	100	89	97	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	109	2	0	0	0	0	95	114	101	110	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	9	9.7	9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	24%	0%	100%	0%
Vol Thru, %	46%	76%	96%	0%	100%
Vol Right, %	54%	0%	4%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	184	63	50	89	97
LT Vol	0	15	0	89	0
Through Vol	84	48	48	0	97
RT Vol	100	0	2	0	0
Lane Flow Rate	209	72	57	101	110
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.279	0.113	0.087	0.157	0.155
Departure Headway (Hd)	4.812	5.673	5.525	5.572	5.07
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	746	631	648	644	708
Service Time	2.844	3.415	3.267	3.305	2.803
HCM Lane V/C Ratio	0.28	0.114	0.088	0.157	0.155
HCM Control Delay	9.7	9.1	8.8	9.3	8.7
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	1.1	0.4	0.3	0.6	0.5

Intersection	
Intersection Delay, s/veh	14.9
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	189	19	32	178	125	332
Future Vol, veh/h	189	19	32	178	125	332
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	245	25	42	231	162	431
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	14.7	11.7	16.4
HCM LOS	B	B	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	35%	0%
Vol Thru, %	0%	0%	91%	65%	100%
Vol Right, %	0%	100%	9%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	125	332	208	91	119
LT Vol	125	0	0	32	0
Through Vol	0	0	189	59	119
RT Vol	0	332	19	0	0
Lane Flow Rate	162	431	270	119	154
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.3	0.652	0.468	0.223	0.282
Departure Headway (Hd)	6.661	5.447	6.243	6.764	6.586
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	539	664	575	530	546
Service Time	4.404	3.189	4.287	4.514	4.336
HCM Lane V/C Ratio	0.301	0.649	0.47	0.225	0.282
HCM Control Delay	12.3	17.9	14.7	11.5	11.9
HCM Lane LOS	B	C	B	B	B
HCM 95th-tile Q	1.3	4.8	2.5	0.8	1.2

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	440	68	20	154	44	7
Future Vol, veh/h	440	68	20	154	44	7
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	564	87	26	197	56	9
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	11.7	9.2	9.5
HCM LOS	B	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	86%	0%	0%	28%	0%
Vol Thru, %	0%	100%	68%	72%	100%
Vol Right, %	14%	0%	32%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	51	293	215	71	103
LT Vol	44	0	0	20	0
Through Vol	0	293	147	51	103
RT Vol	7	0	68	0	0
Lane Flow Rate	65	376	275	91	132
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.104	0.515	0.36	0.139	0.194
Departure Headway (Hd)	5.743	4.926	4.703	5.458	5.316
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	622	733	765	656	674
Service Time	3.796	2.655	2.433	3.201	3.059
HCM Lane V/C Ratio	0.105	0.513	0.359	0.139	0.196
HCM Control Delay	9.5	12.8	10.1	9.1	9.3
HCM Lane LOS	A	B	B	A	A
HCM 95th-tile Q	0.3	3	1.6	0.5	0.7

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	110	46	0	55	101	214	10	11	203	3
Future Vol, veh/h	0	0	110	46	0	55	101	214	10	11	203	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	550	-	-	120	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	133	55	0	66	122	258	12	13	245	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	785	245	848	783	264	249	0	0	270	0	0
Stage 1	-	271	-	508	508	-	-	-	-	-	-	-
Stage 2	-	514	-	340	275	-	-	-	-	-	-	-
Critical Hdwy	-	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	-	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	325	794	281	325	775	1317	-	-	1293	-	-
Stage 1	0	685	-	547	539	-	-	-	-	-	-	-
Stage 2	0	535	-	675	683	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	292	794	216	292	775	1317	-	-	1293	-	-
Mov Cap-2 Maneuver	-	292	-	216	292	-	-	-	-	-	-	-
Stage 1	-	678	-	496	489	-	-	-	-	-	-	-
Stage 2	-	485	-	557	676	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.4	17.9	2.5	0.4
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1317	-	-	794	216	775	1293	-	-
HCM Lane V/C Ratio	0.092	-	-	0.167	0.257	0.086	0.01	-	-
HCM Control Delay (s)	8	-	-	10.4	27.3	10.1	7.8	-	-
HCM Lane LOS	A	-	-	B	D	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.6	1	0.3	0	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	28	36	311	299	45
Future Vol, veh/h	13	28	36	311	299	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	37	47	409	393	59

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	926	226	452	0	-	0
Stage 1	423	-	-	-	-	-
Stage 2	503	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	283	778	1107	-	-	-
Stage 1	630	-	-	-	-	-
Stage 2	606	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	271	778	1107	-	-	-
Mov Cap-2 Maneuver	469	-	-	-	-	-
Stage 1	604	-	-	-	-	-
Stage 2	606	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.9	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1107	-	469	778	-	-
HCM Lane V/C Ratio	0.043	-	0.036	0.047	-	-
HCM Control Delay (s)	8.4	-	13	9.9	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.1	-	-

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	10	8	29	26	83	16	295	6	30	101	11
Future Vol, veh/h	10	10	8	29	26	83	16	295	6	30	101	11
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	11	9	32	29	92	18	328	7	33	112	12
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	8.7	9.3	12.3	9.1
HCM LOS	A	A	B	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	36%	21%	100%	0%
Vol Thru, %	0%	98%	36%	19%	0%	90%
Vol Right, %	0%	2%	29%	60%	0%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	16	301	28	138	30	112
LT Vol	16	0	10	29	30	0
Through Vol	0	295	10	26	0	101
RT Vol	0	6	8	83	0	11
Lane Flow Rate	18	334	31	153	33	124
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.028	0.477	0.046	0.21	0.054	0.182
Departure Headway (Hd)	5.652	5.135	5.326	4.92	5.837	5.263
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	631	699	667	725	610	677
Service Time	3.411	2.894	3.404	2.975	3.606	3.032
HCM Lane V/C Ratio	0.029	0.478	0.046	0.211	0.054	0.183
HCM Control Delay	8.6	12.5	8.7	9.3	8.9	9.2
HCM Lane LOS	A	B	A	A	A	A
HCM 95th-tile Q	0.1	2.6	0.1	0.8	0.2	0.7

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	46	123	127	229	117	43
Future Vol, veh/h	46	123	127	229	117	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	58	154	159	286	146	54

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	159	0	-	0	429	159
Stage 1	-	-	-	-	159	-
Stage 2	-	-	-	-	270	-
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	1420	-	-	0	583	886
Stage 1	-	-	-	0	870	-
Stage 2	-	-	-	0	775	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1420	-	-	-	559	886
Mov Cap-2 Maneuver	-	-	-	-	559	-
Stage 1	-	-	-	-	834	-
Stage 2	-	-	-	-	775	-

Approach	EB	WB	SB
HCM Control Delay, s	2.1	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1420	-	-	559	886
HCM Lane V/C Ratio	0.04	-	-	0.262	0.061
HCM Control Delay (s)	7.6	-	-	13.7	9.3
HCM Lane LOS	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	1	0.2

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	317	138	0
Future Vol, veh/h	0	0	0	317	138	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	360	157	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	517	157	157	0	-	0
Stage 1	157	-	-	-	-	-
Stage 2	360	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	518	889	1423	-	-	-
Stage 1	871	-	-	-	-	-
Stage 2	706	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	518	889	1423	-	-	-
Mov Cap-2 Maneuver	642	-	-	-	-	-
Stage 1	871	-	-	-	-	-
Stage 2	706	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1423	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	28	0	0	53	0	0
Future Vol, veh/h	28	0	0	53	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	0	0	58	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	30	0	88	30
Stage 1	-	-	-	-	30	-
Stage 2	-	-	-	-	58	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1583	-	913	1044
Stage 1	-	-	-	-	993	-
Stage 2	-	-	-	-	965	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1583	-	913	1044
Mov Cap-2 Maneuver	-	-	-	-	913	-
Stage 1	-	-	-	-	993	-
Stage 2	-	-	-	-	965	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1583	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	176	0	0	66	0	0	0	0	0	0	0
Future Vol, veh/h	0	176	0	0	66	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	71	71	71	71	71	71	71	71	71
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	248	0	0	93	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	93	0	0	248	0	0	341	341	248	341	341	93
Stage 1	-	-	-	-	-	-	248	248	-	93	93	-
Stage 2	-	-	-	-	-	-	93	93	-	248	248	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1501	-	-	1318	-	-	613	581	791	613	581	964
Stage 1	-	-	-	-	-	-	756	701	-	914	818	-
Stage 2	-	-	-	-	-	-	914	818	-	756	701	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1501	-	-	1318	-	-	613	581	791	613	581	964
Mov Cap-2 Maneuver	-	-	-	-	-	-	613	581	-	613	581	-
Stage 1	-	-	-	-	-	-	756	701	-	914	818	-
Stage 2	-	-	-	-	-	-	914	818	-	756	701	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1501	-	-	1318	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	146	173	10	124	39	6
Future Vol, veh/h	146	173	10	124	39	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	195	231	13	165	52	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	426	0	386	195
Stage 1	-	-	-	-	195	-
Stage 2	-	-	-	-	191	-
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	-	-	1133	-	617	846
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	841	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1133	-	610	846
Mov Cap-2 Maneuver	-	-	-	-	610	-
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	832	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	634	-	-	1133	-
HCM Lane V/C Ratio	0.095	-	-	0.012	-
HCM Control Delay (s)	11.3	-	-	8.2	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	48	89	68	42	22	59
Future Vol, veh/h	48	89	68	42	22	59
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	56	105	80	49	26	69
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	8.4	7.8	7.9
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	35%	0%	100%	0%
Vol Thru, %	65%	62%	0%	0%
Vol Right, %	0%	38%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	137	110	22	59
LT Vol	48	0	22	0
Through Vol	89	68	0	0
RT Vol	0	42	0	59
Lane Flow Rate	161	129	26	69
Geometry Grp	2	2	7	7
Degree of Util (X)	0.196	0.148	0.041	0.086
Departure Headway (Hd)	4.376	4.107	5.675	4.469
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	825	876	633	804
Service Time	2.376	2.119	3.392	2.186
HCM Lane V/C Ratio	0.195	0.147	0.041	0.086
HCM Control Delay	8.4	7.8	8.6	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.5	0.1	0.3

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	32	44	86	38	43	46
Future Vol, veh/h	32	44	86	38	43	46
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	56	110	49	55	59
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.9	8.6	7.6
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	69%	42%	0%	0%
Vol Thru, %	31%	0%	100%	0%
Vol Right, %	0%	58%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	124	76	43	46
LT Vol	86	32	0	0
Through Vol	38	0	43	0
RT Vol	0	44	0	46
Lane Flow Rate	159	97	55	59
Geometry Grp	5	2	7	7
Degree of Util (X)	0.196	0.116	0.073	0.067
Departure Headway (Hd)	4.431	4.292	4.791	4.089
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	798	840	738	862
Service Time	2.522	2.292	2.586	1.883
HCM Lane V/C Ratio	0.199	0.115	0.075	0.068
HCM Control Delay	8.6	7.9	8	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.4	0.2	0.2

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	30	87	302	130	230	134
v/c Ratio	0.09	0.13	0.46	0.20	0.42	0.10
Control Delay	21.8	2.9	15.7	4.5	17.3	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.8	2.9	15.7	4.5	17.3	2.3
Queue Length 50th (ft)	4	0	37	0	30	0
Queue Length 95th (ft)	32	19	161	31	133	26
Internal Link Dist (ft)	1029		820			723
Turn Bay Length (ft)	165			410	405	
Base Capacity (vph)	778	1078	1436	1247	1027	1755
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.08	0.21	0.10	0.22	0.08

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	28	80	278	120	212	123
Future Volume (veh/h)	28	80	278	120	212	123
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	30	87	302	130	230	134
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	171	425	478	405	307	1074
Arrive On Green	0.10	0.10	0.26	0.26	0.18	0.59
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	30	87	302	130	230	134
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	0.5	1.5	5.0	2.3	4.3	1.1
Cycle Q Clear(g_c), s	0.5	1.5	5.0	2.3	4.3	1.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	171	425	478	405	307	1074
V/C Ratio(X)	0.18	0.20	0.63	0.32	0.75	0.12
Avail Cap(c_a), veh/h	719	913	1617	1370	1015	2634
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	1.00
Uniform Delay (d), s/veh	14.1	9.5	11.1	10.1	13.3	3.1
Incr Delay (d2), s/veh	0.5	0.2	1.4	0.5	3.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.4	1.4	0.5	1.4	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.6	9.7	12.5	10.6	17.0	3.2
LnGrp LOS	B	A	B	B	B	A
Approach Vol, veh/h	117		432			364
Approach Delay, s/veh	11.0		11.9			11.9
Approach LOS	B		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	11.1	14.7			25.9	8.2
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	6.3	7.0			3.1	3.5
Green Ext Time (p_c), s	0.5	2.0			0.7	0.2

Intersection Summary	
HCM 6th Ctrl Delay	11.8
HCM 6th LOS	B

1: Tinloy St /Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.0	0.1
Total Del/Veh (s)	2.6	9.0	4.5	4.8

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	1.6	0.0	0.6
Total Del/Veh (s)	4.4	6.0	8.7	6.3

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.1
Total Del/Veh (s)	5.4	7.7	0.5	3.8

8: Main St & Maltman Dr/Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.3	2.1	1.0
Total Del/Veh (s)	14.2	4.6	7.8	6.8	6.1

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.7	2.9	0.9
Total Del/Veh (s)	3.8	8.8	20.5	36.6	15.9

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.5	4.0	20.7	9.1

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.3	1.4	0.0	0.2
Total Del/Veh (s)	5.5	9.1	11.2	1.2	5.2

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.2	1.6	0.9
Total Del/Veh (s)	11.6	11.0	7.4	9.3

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.8	0.0	0.1	0.5
Total Del/Veh (s)	6.7	5.7	7.6	6.2

Total Zone Performance

Denied Del/Veh (s)	1.1
Total Del/Veh (s)	70.1

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	86	114	67	57
Average Queue (ft)	29	44	25	16
95th Queue (ft)	67	86	59	43
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	97	67	107	100	87
Average Queue (ft)	43	25	35	45	29
95th Queue (ft)	78	55	78	84	64
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)				0	0
Queuing Penalty (veh)				0	0
Storage Bay Dist (ft)		100			
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	66	56	31	56	4
Average Queue (ft)	35	26	7	30	0
95th Queue (ft)	57	50	27	46	3
Link Distance (ft)	1196	1196		262	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: Main St & Maltman Dr/Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	36	47	63	74	25	68	50	45	79	50
Average Queue (ft)	7	17	19	25	2	26	16	6	32	13
95th Queue (ft)	27	39	45	54	11	58	43	28	60	39
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)						0				
Queuing Penalty (veh)						0				

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	50	66	67	57	95	36	34	106	128	53	52
Average Queue (ft)	8	17	27	11	25	5	10	29	69	12	22
95th Queue (ft)	31	47	62	40	71	22	32	76	117	38	47
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)					0						
Queuing Penalty (veh)					0						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	<	R	T
Maximum Queue (ft)	61	26	24	38	190	116	19
Average Queue (ft)	6	4	1	2	95	57	1
95th Queue (ft)	29	18	11	17	165	93	11
Link Distance (ft)	456	456	334	334	145	145	915
Upstream Blk Time (%)					3	0	
Queuing Penalty (veh)					0	0	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	46	69	74	86	54	58	76	98	32	70	36	48
Average Queue (ft)	13	31	19	37	19	17	31	45	4	28	13	16
95th Queue (ft)	39	59	53	74	45	44	66	86	21	56	32	43
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	36
Average Queue (ft)	6
95th Queue (ft)	26
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	74	106	50	64	71	66	140	51
Average Queue (ft)	28	38	14	24	28	22	62	20
95th Queue (ft)	60	79	39	49	56	55	112	41
Link Distance (ft)	211	211		1564	1564		800	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	109	42	109	89	99	64	61
Average Queue (ft)	33	16	42	32	23	24	27
95th Queue (ft)	75	36	81	71	70	53	50
Link Distance (ft)	548		211	211	211	1120	1120
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		155					
Storage Blk Time (%)	0						
Queuing Penalty (veh)	0						

Zone Summary

Zone wide Queuing Penalty: 1

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

EPAP 0630-0730 AM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	16	3.0	0.088	4.6	LOS A	0.4	9.2	0.45	0.33	0.45	34.9
8	T1	22	3.0	0.088	4.6	LOS A	0.4	9.2	0.45	0.33	0.45	34.8
18	R2	45	3.0	0.088	4.6	LOS A	0.4	9.2	0.45	0.33	0.45	33.8
Approach		83	3.0	0.088	4.6	LOS A	0.4	9.2	0.45	0.33	0.45	34.3
East: Idaho Maryland Rd												
1	L2	121	3.0	0.104	4.0	LOS A	0.4	10.7	0.31	0.19	0.31	33.0
6	T1	56	3.0	0.150	4.4	LOS A	0.6	16.1	0.33	0.20	0.33	35.4
16	R2	118	3.0	0.150	4.4	LOS A	0.6	16.1	0.33	0.20	0.33	34.3
Approach		295	3.0	0.150	4.2	LOS A	0.6	16.1	0.32	0.20	0.32	33.9
North: Main St												
7	L2	70	3.0	0.191	4.8	LOS A	0.8	20.0	0.32	0.21	0.32	34.5
4	T1	153	3.0	0.191	4.8	LOS A	0.8	20.0	0.32	0.21	0.32	34.4
14	R2	77	3.0	0.047	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		300	3.0	0.191	3.6	LOS A	0.8	20.0	0.24	0.16	0.24	35.1
West: Main St												
5	L2	148	3.0	0.278	6.3	LOS A	1.2	30.1	0.46	0.38	0.46	33.1
2	T1	112	3.0	0.278	6.3	LOS A	1.2	30.1	0.46	0.38	0.46	33.1
12	R2	23	3.0	0.278	6.3	LOS A	1.2	30.1	0.46	0.38	0.46	32.2
Approach		283	3.0	0.278	6.3	LOS A	1.2	30.1	0.46	0.38	0.46	33.0
All Vehicles		961	3.0	0.278	4.7	LOS A	1.2	30.1	0.35	0.25	0.35	34.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection	
Intersection Delay, s/veh	15.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	47	329	3	0	0	0	0	95	155	164	304	0
Future Vol, veh/h	47	329	3	0	0	0	0	95	155	164	304	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	52	366	3	0	0	0	0	106	172	182	338	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	14.8	16.2
HCM LOS	B	B	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	22%	0%	100%	0%
Vol Thru, %	38%	78%	98%	0%	100%
Vol Right, %	62%	0%	2%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	250	212	168	164	304
LT Vol	0	47	0	164	0
Through Vol	95	165	165	0	304
RT Vol	155	0	3	0	0
Lane Flow Rate	278	235	186	182	338
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.477	0.445	0.346	0.344	0.591
Departure Headway (Hd)	6.181	6.817	6.692	6.804	6.295
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	581	526	536	528	571
Service Time	4.232	4.572	4.446	4.555	4.047
HCM Lane V/C Ratio	0.478	0.447	0.347	0.345	0.592
HCM Control Delay	14.8	15	13	13.1	17.8
HCM Lane LOS	B	B	B	B	C
HCM 95th-tile Q	2.6	2.3	1.5	1.5	3.8

Intersection	
Intersection Delay, s/veh	22.6
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	288	61	57	626	203	224
Future Vol, veh/h	288	61	57	626	203	224
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	306	65	61	666	216	238
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	22.6	26.8	15.9
HCM LOS	C	D	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	21%	0%
Vol Thru, %	0%	0%	83%	79%	100%
Vol Right, %	0%	100%	17%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	203	224	349	266	417
LT Vol	203	0	0	57	0
Through Vol	0	0	288	209	417
RT Vol	0	224	61	0	0
Lane Flow Rate	216	238	371	283	444
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.47	0.438	0.68	0.53	0.819
Departure Headway (Hd)	7.843	6.616	6.597	6.755	6.645
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	458	541	546	531	542
Service Time	5.613	4.385	4.662	4.527	4.417
HCM Lane V/C Ratio	0.472	0.44	0.679	0.533	0.819
HCM Control Delay	17.4	14.5	22.6	17	33
HCM Lane LOS	C	B	C	C	D
HCM 95th-tile Q	2.5	2.2	5.1	3.1	8.1

Intersection	
Intersection Delay, s/veh	16.5
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	390	88	31	530	107	49
Future Vol, veh/h	390	88	31	530	107	49
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	480	108	38	652	132	60
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	14.6	19.2	12.9
HCM LOS	B	C	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	69%	0%	0%	15%	0%
Vol Thru, %	0%	100%	60%	85%	100%
Vol Right, %	31%	0%	40%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	156	260	218	208	353
LT Vol	107	0	0	31	0
Through Vol	0	260	130	177	353
RT Vol	49	0	88	0	0
Lane Flow Rate	192	320	268	256	435
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.346	0.542	0.433	0.429	0.72
Departure Headway (Hd)	6.48	6.101	5.814	6.038	5.963
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	555	589	617	596	604
Service Time	4.523	3.848	3.561	3.782	3.706
HCM Lane V/C Ratio	0.346	0.543	0.434	0.43	0.72
HCM Control Delay	12.9	15.9	13	13.3	22.6
HCM Lane LOS	B	C	B	B	C
HCM 95th-tile Q	1.5	3.2	2.2	2.1	6

Intersection	
Int Delay, s/veh	7.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	200	27	0	49	190	458	50	86	424	13
Future Vol, veh/h	0	0	200	27	0	49	190	458	50	86	424	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	550	-	-	120	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	213	29	0	52	202	487	53	91	451	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	1577	451	1665	1565	514	465	0	0	540	0	0
Stage 1	-	633	-	918	918	-	-	-	-	-	-	-
Stage 2	-	944	-	747	647	-	-	-	-	-	-	-
Critical Hdwy	-	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	-	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	110	608	77	111	560	1096	-	-	1028	-	-
Stage 1	0	473	-	326	350	-	-	-	-	-	-	-
Stage 2	0	341	-	405	467	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	82	608	40	82	560	1096	-	-	1028	-	-
Mov Cap-2 Maneuver	-	82	-	40	82	-	-	-	-	-	-	-
Stage 1	-	431	-	266	286	-	-	-	-	-	-	-
Stage 2	-	278	-	240	425	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.1	83.7	2.5	1.5
HCM LOS	B	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1096	-	-	608	40	560	1028	-	-
HCM Lane V/C Ratio	0.184	-	-	0.35	0.718	0.093	0.089	-	-
HCM Control Delay (s)	9	-	-	14.1	213.5	12.1	8.8	-	-
HCM Lane LOS	A	-	-	B	F	B	A	-	-
HCM 95th %tile Q(veh)	0.7	-	-	1.6	2.7	0.3	0.3	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	64	71	41	637	608	34
Future Vol, veh/h	64	71	41	637	608	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	73	42	657	627	35

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1386	331	662	0	-	0
Stage 1	645	-	-	-	-	-
Stage 2	741	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	145	666	925	-	-	-
Stage 1	485	-	-	-	-	-
Stage 2	470	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	138	666	925	-	-	-
Mov Cap-2 Maneuver	339	-	-	-	-	-
Stage 1	463	-	-	-	-	-
Stage 2	470	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.5	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	925	-	339	666	-	-
HCM Lane V/C Ratio	0.046	-	0.195	0.11	-	-
HCM Control Delay (s)	9.1	-	18.2	11.1	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	0.4	-	-

Intersection	
Intersection Delay, s/veh	18.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	33	10	17	25	85	7	331	24	127	430	26
Future Vol, veh/h	23	33	10	17	25	85	7	331	24	127	430	26
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	35	11	18	27	90	7	352	26	135	457	28
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	10.9	11.2	17.9	21.4
HCM LOS	B	B	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	35%	13%	100%	0%
Vol Thru, %	0%	93%	50%	20%	0%	94%
Vol Right, %	0%	7%	15%	67%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	7	355	66	127	127	456
LT Vol	7	0	23	17	127	0
Through Vol	0	331	33	25	0	430
RT Vol	0	24	10	85	0	26
Lane Flow Rate	7	378	70	135	135	485
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.013	0.624	0.132	0.233	0.233	0.763
Departure Headway (Hd)	6.503	5.948	6.749	6.197	6.211	5.664
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	549	604	528	577	577	635
Service Time	4.256	3.701	4.828	4.265	3.957	3.41
HCM Lane V/C Ratio	0.013	0.626	0.133	0.234	0.234	0.764
HCM Control Delay	9.3	18.1	10.9	11.2	10.8	24.4
HCM Lane LOS	A	C	B	B	B	C
HCM 95th-tile Q	0	4.3	0.5	0.9	0.9	7

Intersection	
Int Delay, s/veh	18.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	80	205	186	276	331	105
Future Vol, veh/h	80	205	186	276	331	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	88	225	204	303	364	115

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	204	0	-	0	605	204
Stage 1	-	-	-	-	204	-
Stage 2	-	-	-	-	401	-
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	-	-	0	461	837
Stage 1	-	-	-	0	830	-
Stage 2	-	-	-	0	676	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1368	-	-	-	431	837
Mov Cap-2 Maneuver	-	-	-	-	431	-
Stage 1	-	-	-	-	777	-
Stage 2	-	-	-	-	676	-

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	36.3
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1368	-	-	431	837
HCM Lane V/C Ratio	0.064	-	-	0.844	0.138
HCM Control Delay (s)	7.8	-	-	44.6	10
HCM Lane LOS	A	-	-	E	B
HCM 95th %tile Q(veh)	0.2	-	-	8.2	0.5

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	362	457	0
Future Vol, veh/h	0	0	0	362	457	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	381	481	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	862	481	481	0	-	0
Stage 1	481	-	-	-	-	-
Stage 2	381	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	325	585	1082	-	-	-
Stage 1	622	-	-	-	-	-
Stage 2	691	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	325	585	1082	-	-	-
Mov Cap-2 Maneuver	515	-	-	-	-	-
Stage 1	622	-	-	-	-	-
Stage 2	691	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1082	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	66	0	0	58	0	0
Future Vol, veh/h	66	0	0	58	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	72	0	0	63	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	72	0	135	72
Stage 1	-	-	-	-	72	-
Stage 2	-	-	-	-	63	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1528	-	859	990
Stage 1	-	-	-	-	951	-
Stage 2	-	-	-	-	960	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1528	-	859	990
Mov Cap-2 Maneuver	-	-	-	-	859	-
Stage 1	-	-	-	-	951	-
Stage 2	-	-	-	-	960	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1528	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	104	0	0	174	0	0	0	0	0	0	0
Future Vol, veh/h	5	104	0	0	174	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	137	0	0	229	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	229	0	0	137	0	0	406	406	137	406	406	229
Stage 1	-	-	-	-	-	-	177	177	-	229	229	-
Stage 2	-	-	-	-	-	-	229	229	-	177	177	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1339	-	-	1447	-	-	555	534	911	555	534	810
Stage 1	-	-	-	-	-	-	825	753	-	774	715	-
Stage 2	-	-	-	-	-	-	774	715	-	825	753	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1339	-	-	1447	-	-	548	525	911	548	525	810
Mov Cap-2 Maneuver	-	-	-	-	-	-	548	525	-	548	525	-
Stage 1	-	-	-	-	-	-	812	741	-	762	715	-
Stage 2	-	-	-	-	-	-	774	715	-	812	741	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0	0	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1339	-	-	1447	-	-	-
HCM Lane V/C Ratio	-	0.015	-	-	-	-	-	-
HCM Control Delay (s)	0	7.7	0	-	0	-	-	0
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	25.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	299	120	12	385	245	37
Future Vol, veh/h	299	120	12	385	245	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	374	150	15	481	306	46

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	524	0	885	374
Stage 1	-	-	-	-	374	-
Stage 2	-	-	-	-	511	-
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	-	-	1043	-	315	672
Stage 1	-	-	-	-	696	-
Stage 2	-	-	-	-	602	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1043	-	311	672
Mov Cap-2 Maneuver	-	-	-	-	311	-
Stage 1	-	-	-	-	696	-
Stage 2	-	-	-	-	594	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	99.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	335	-	-	1043	-
HCM Lane V/C Ratio	1.052	-	-	0.014	-
HCM Control Delay (s)	99.8	-	-	8.5	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	12.6	-	-	0	-

Intersection	
Intersection Delay, s/veh	13.9
Intersection LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	212	115	199	67	107	208
Future Vol, veh/h	212	115	199	67	107	208
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	249	135	234	79	126	245
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	16.5	13.2	11.9
HCM LOS	C	B	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	65%	0%	100%	0%
Vol Thru, %	35%	75%	0%	0%
Vol Right, %	0%	25%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	327	266	107	208
LT Vol	212	0	107	0
Through Vol	115	199	0	0
RT Vol	0	67	0	208
Lane Flow Rate	385	313	126	245
Geometry Grp	2	2	7	7
Degree of Util (X)	0.595	0.471	0.241	0.386
Departure Headway (Hd)	5.572	5.418	6.898	5.679
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	646	663	520	634
Service Time	3.612	3.46	4.643	3.423
HCM Lane V/C Ratio	0.596	0.472	0.242	0.386
HCM Control Delay	16.5	13.2	11.8	12
HCM Lane LOS	C	B	B	B
HCM 95th-tile Q	3.9	2.5	0.9	1.8

Intersection	
Intersection Delay, s/veh	15.6
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	144	186	125	172	179	179
Future Vol, veh/h	144	186	125	172	179	179
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	173	224	151	207	216	216
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	17.9	17.4	12.1
HCM LOS	C	C	B

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	42%	44%	0%	0%
Vol Thru, %	58%	0%	100%	0%
Vol Right, %	0%	56%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	297	330	179	179
LT Vol	125	144	0	0
Through Vol	172	0	179	0
RT Vol	0	186	0	179
Lane Flow Rate	358	398	216	216
Geometry Grp	5	2	7	7
Degree of Util (X)	0.592	0.627	0.377	0.335
Departure Headway (Hd)	5.951	5.673	6.301	5.588
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	605	632	569	641
Service Time	4.012	3.731	4.067	3.354
HCM Lane V/C Ratio	0.592	0.63	0.38	0.337
HCM Control Delay	17.4	17.9	12.9	11.2
HCM Lane LOS	C	C	B	B
HCM 95th-tile Q	3.9	4.4	1.7	1.5

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	192	342	414	82	180	459
v/c Ratio	0.58	0.39	0.71	0.15	0.52	0.41
Control Delay	32.8	4.5	25.8	5.0	29.0	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.8	4.5	25.8	5.0	29.0	6.9
Queue Length 50th (ft)	61	14	125	0	57	72
Queue Length 95th (ft)	#160	67	253	26	135	125
Internal Link Dist (ft)	1010		910			683
Turn Bay Length (ft)	165			410	405	
Base Capacity (vph)	430	1070	971	863	607	1610
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.32	0.43	0.10	0.30	0.29

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	177	315	381	75	166	422
Future Volume (veh/h)	177	315	381	75	166	422
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	192	342	414	82	180	459
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	409	574	544	461	236	987
Arrive On Green	0.24	0.24	0.30	0.30	0.14	0.54
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	192	342	414	82	180	459
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	4.5	8.5	9.8	1.9	4.8	7.4
Cycle Q Clear(g_c), s	4.5	8.5	9.8	1.9	4.8	7.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	409	574	544	461	236	987
V/C Ratio(X)	0.47	0.60	0.76	0.18	0.76	0.47
Avail Cap(c_a), veh/h	514	667	1156	980	725	1883
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	1.00
Uniform Delay (d), s/veh	15.7	12.1	15.2	12.4	19.9	6.7
Incr Delay (d2), s/veh	0.8	1.1	2.2	0.2	5.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.6	3.4	0.5	1.9	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.5	13.2	17.4	12.6	25.0	7.1
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	534		496			639
Approach Delay, s/veh	14.4		16.6			12.1
Approach LOS	B		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	11.6	20.0			31.6	16.1
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	6.8	11.8			9.4	10.5
Green Ext Time (p_c), s	0.4	2.4			2.8	0.7

Intersection Summary	
HCM 6th Ctrl Delay	14.2
HCM 6th LOS	B

1: Tinloy St /Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.0	0.1
Total Del/Veh (s)	8.0	14.9	5.1	8.4

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.3	1.0	0.0	0.5
Total Del/Veh (s)	5.6	8.3	12.5	8.7

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.4	0.2
Total Del/Veh (s)	10.0	9.2	1.6	6.4

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.5	2.1	1.1
Total Del/Veh (s)	19.2	9.7	16.7	16.0	13.7

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.5	2.8	0.7
Total Del/Veh (s)	14.0	14.5	19.0	36.3	19.8

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.6	9.4	26.4	13.5

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.5	1.5	0.0	0.4
Total Del/Veh (s)	16.5	31.8	26.7	11.1	21.5

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.5	2.7	0.9
Total Del/Veh (s)	13.5	14.2	13.4	13.7

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	2.3	0.0	0.2	1.1
Total Del/Veh (s)	17.6	11.5	15.4	14.9

Total Zone Performance

Denied Del/Veh (s)	1.3
Total Del/Veh (s)	674.2

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	105	176	97	99
Average Queue (ft)	62	79	44	40
95th Queue (ft)	105	139	78	77
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	3			
Queuing Penalty (veh)	8			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	127	115	150	115	104
Average Queue (ft)	68	34	65	61	51
95th Queue (ft)	109	76	115	99	89
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	0			1	0
Queuing Penalty (veh)	0			2	1
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	1		
Queuing Penalty (veh)		0	2		

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	139	122	39	62	31
Average Queue (ft)	74	56	15	35	3
95th Queue (ft)	119	98	41	54	18
Link Distance (ft)	1196	1196		262	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	47	115	106	165	15	199	139	191	209	146
Average Queue (ft)	13	48	50	82	1	89	63	65	109	59
95th Queue (ft)	39	90	90	153	10	157	119	143	179	118
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)		0		1						
Queuing Penalty (veh)		0		1						
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)						4	0			
Queuing Penalty (veh)						7	1			

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	171	194	102	180	178	97	165	181	210	82	120
Average Queue (ft)	95	131	68	72	96	30	77	99	132	26	46
95th Queue (ft)	177	210	107	157	174	75	135	175	191	61	86
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	1	6	2	4	7						
Queuing Penalty (veh)	3	21	0	17	24						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			2	4		0	4		0		
Queuing Penalty (veh)			6	6		0	1		0		

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	R	<	R	T
Maximum Queue (ft)	172	173	198	239	89	216	228	384
Average Queue (ft)	57	61	54	76	3	145	159	79
95th Queue (ft)	123	133	144	185	54	225	245	296
Link Distance (ft)	456	456	334	334	334	145	145	915
Upstream Blk Time (%)				0	0	13	19	
Queuing Penalty (veh)				0	0	0	0	
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	133	140	184	184	188	178	244	312	211	279	224	124
Average Queue (ft)	61	78	96	106	88	80	108	182	84	161	82	56
95th Queue (ft)	112	124	157	167	150	144	188	274	182	241	164	102
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)			0	0	0	2	5		0	0	0	
Queuing Penalty (veh)			0	0	0	6	6		0	1	0	

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	112
Average Queue (ft)	46
95th Queue (ft)	88
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	190	209	129	112	161	100	129	118
Average Queue (ft)	86	98	58	50	72	43	57	54
95th Queue (ft)	155	187	110	97	134	82	104	98
Link Distance (ft)	211	211		1564	1564		800	
Upstream Blk Time (%)	0	0						
Queuing Penalty (veh)	0	1						
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)			0	0				
Queuing Penalty (veh)			0	0				

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	440	180	216	124	122	181	69
Average Queue (ft)	171	103	109	40	37	92	34
95th Queue (ft)	336	199	184	95	92	154	58
Link Distance (ft)	548		211	211	211	1120	1120
Upstream Blk Time (%)	0		1				
Queuing Penalty (veh)	0		1				
Storage Bay Dist (ft)		155					
Storage Blk Time (%)	8	1					
Queuing Penalty (veh)	30	5					

Zone Summary

Zone wide Queuing Penalty: 149

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

EPAP 1530-1630 PM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	59	3.0	0.224	6.3	LOS A	1.0	25.7	0.53	0.45	0.53	33.7
8	T1	54	3.0	0.224	6.3	LOS A	1.0	25.7	0.53	0.45	0.53	33.6
18	R2	86	3.0	0.224	6.3	LOS A	1.0	25.7	0.53	0.45	0.53	32.7
Approach		200	3.0	0.224	6.3	LOS A	1.0	25.7	0.53	0.45	0.53	33.2
East: Idaho Maryland Rd												
1	L2	327	3.0	0.316	6.7	LOS A	1.5	38.0	0.48	0.39	0.48	31.8
6	T1	209	3.0	0.402	7.8	LOS A	2.1	52.6	0.52	0.43	0.52	33.7
16	R2	208	3.0	0.402	7.8	LOS A	2.1	52.6	0.52	0.43	0.52	32.6
Approach		745	3.0	0.402	7.3	LOS A	2.1	52.6	0.51	0.41	0.51	32.5
North: Main St												
7	L2	92	3.0	0.393	9.2	LOS A	1.9	48.9	0.62	0.66	0.74	32.4
4	T1	230	3.0	0.393	9.2	LOS A	1.9	48.9	0.62	0.66	0.74	32.4
14	R2	310	3.0	0.191	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		632	3.0	0.393	4.7	LOS A	1.9	48.9	0.32	0.34	0.38	34.5
West: Main St												
5	L2	194	3.0	0.431	10.2	LOS B	2.3	58.2	0.65	0.72	0.86	31.2
2	T1	102	3.0	0.431	10.2	LOS B	2.3	58.2	0.65	0.72	0.86	31.2
12	R2	41	3.0	0.431	10.2	LOS B	2.3	58.2	0.65	0.72	0.86	30.4
Approach		336	3.0	0.431	10.2	LOS B	2.3	58.2	0.65	0.72	0.86	31.1
All Vehicles		1914	3.0	0.431	6.8	LOS A	2.3	58.2	0.47	0.45	0.53	33.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	181	3	0	0	0	0	60	62	115	198	0
Future Vol, veh/h	28	181	3	0	0	0	0	60	62	115	198	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	201	3	0	0	0	0	67	69	128	220	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	9.9	9.7	10.5
HCM LOS	A	A	B

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	24%	0%	100%	0%
Vol Thru, %	49%	76%	97%	0%	100%
Vol Right, %	51%	0%	3%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	122	119	94	115	198
LT Vol	0	28	0	115	0
Through Vol	60	91	91	0	198
RT Vol	62	0	3	0	0
Lane Flow Rate	136	132	104	128	220
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.199	0.214	0.165	0.207	0.326
Departure Headway (Hd)	5.291	5.854	5.713	5.831	5.328
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	674	610	624	613	671
Service Time	3.362	3.626	3.485	3.593	3.089
HCM Lane V/C Ratio	0.202	0.216	0.167	0.209	0.328
HCM Control Delay	9.7	10.2	9.6	10.1	10.7
HCM Lane LOS	A	B	A	B	B
HCM 95th-tile Q	0.7	0.8	0.6	0.8	1.4

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	106	35	21	266	82	101
Future Vol, veh/h	106	35	21	266	82	101
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	128	42	25	320	99	122
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	9.9	10.1	9.6
HCM LOS	A	B	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	19%	0%
Vol Thru, %	0%	0%	75%	81%	100%
Vol Right, %	0%	100%	25%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	82	101	141	110	177
LT Vol	82	0	0	21	0
Through Vol	0	0	106	89	177
RT Vol	0	101	35	0	0
Lane Flow Rate	99	122	170	132	214
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.172	0.171	0.244	0.198	0.314
Departure Headway (Hd)	6.282	5.072	5.173	5.394	5.298
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	568	702	690	662	675
Service Time	4.053	2.842	3.237	3.152	3.056
HCM Lane V/C Ratio	0.174	0.174	0.246	0.199	0.317
HCM Control Delay	10.4	8.9	9.9	9.5	10.5
HCM Lane LOS	B	A	A	A	B
HCM 95th-tile Q	0.6	0.6	1	0.7	1.3

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	195	8	2	243	27	12
Future Vol, veh/h	195	8	2	243	27	12
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	228	9	2	284	32	14
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	8.6	8.9	8.4
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	69%	0%	0%	2%	0%
Vol Thru, %	0%	100%	89%	98%	100%
Vol Right, %	31%	0%	11%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	39	130	73	83	162
LT Vol	27	0	0	2	0
Through Vol	0	130	65	81	162
RT Vol	12	0	8	0	0
Lane Flow Rate	46	152	85	97	190
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.064	0.207	0.114	0.131	0.255
Departure Headway (Hd)	5.039	4.887	4.81	4.856	4.844
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	712	737	748	740	743
Service Time	3.063	2.601	2.524	2.571	2.558
HCM Lane V/C Ratio	0.065	0.206	0.114	0.131	0.256
HCM Control Delay	8.4	8.9	8.1	8.3	9.2
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.2	0.8	0.4	0.4	1

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	108	22	0	36	70	188	26	63	259	1
Future Vol, veh/h	0	0	108	22	0	36	70	188	26	63	259	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	550	-	-	120	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	120	24	0	40	78	209	29	70	288	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	822	288	869	809	224	289	0	0	238	0	0
Stage 1	-	428	-	380	380	-	-	-	-	-	-	-
Stage 2	-	394	-	489	429	-	-	-	-	-	-	-
Critical Hdwy	-	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	-	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	309	751	272	314	815	1273	-	-	1329	-	-
Stage 1	0	585	-	642	614	-	-	-	-	-	-	-
Stage 2	0	605	-	561	584	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	275	751	209	279	815	1273	-	-	1329	-	-
Mov Cap-2 Maneuver	-	275	-	209	279	-	-	-	-	-	-	-
Stage 1	-	554	-	603	577	-	-	-	-	-	-	-
Stage 2	-	568	-	447	553	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.7	15.3	2	1.5
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1273	-	-	751	209	815	1329	-	-
HCM Lane V/C Ratio	0.061	-	-	0.16	0.117	0.049	0.053	-	-
HCM Control Delay (s)	8	-	-	10.7	24.5	9.6	7.9	-	-
HCM Lane LOS	A	-	-	B	C	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.6	0.4	0.2	0.2	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	33	8	265	384	13
Future Vol, veh/h	15	33	8	265	384	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	38	9	308	447	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	781	231	462	0	-	0
Stage 1	455	-	-	-	-	-
Stage 2	326	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	347	772	1097	-	-	-
Stage 1	607	-	-	-	-	-
Stage 2	731	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	344	772	1097	-	-	-
Mov Cap-2 Maneuver	520	-	-	-	-	-
Stage 1	602	-	-	-	-	-
Stage 2	731	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.6	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1097	-	520	772	-	-
HCM Lane V/C Ratio	0.008	-	0.034	0.05	-	-
HCM Control Delay (s)	8.3	-	12.2	9.9	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.2	-	-

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	26	2	11	17	43	3	174	12	89	272	17
Future Vol, veh/h	12	26	2	11	17	43	3	174	12	89	272	17
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	30	2	13	20	49	3	200	14	102	313	20
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	9.1	8.9	10.4	11.5
HCM LOS	A	A	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	30%	15%	100%	0%
Vol Thru, %	0%	94%	65%	24%	0%	94%
Vol Right, %	0%	6%	5%	61%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	3	186	40	71	89	289
LT Vol	3	0	12	11	89	0
Through Vol	0	174	26	17	0	272
RT Vol	0	12	2	43	0	17
Lane Flow Rate	3	214	46	82	102	332
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.006	0.311	0.071	0.117	0.158	0.464
Departure Headway (Hd)	5.79	5.241	5.597	5.175	5.568	5.024
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	616	682	635	688	642	714
Service Time	3.546	2.996	3.673	3.242	3.317	2.772
HCM Lane V/C Ratio	0.005	0.314	0.072	0.119	0.159	0.465
HCM Control Delay	8.6	10.4	9.1	8.9	9.4	12.1
HCM Lane LOS	A	B	A	A	A	B
HCM 95th-tile Q	0	1.3	0.2	0.4	0.6	2.5

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	23	134	79	160	228	43
Future Vol, veh/h	23	134	79	160	228	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	151	89	180	256	48

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	89	0	-	0	292	89
Stage 1	-	-	-	-	89	-
Stage 2	-	-	-	-	203	-
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	1506	-	-	0	699	969
Stage 1	-	-	-	0	934	-
Stage 2	-	-	-	0	831	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	1506	-	-	-	687	969
Mov Cap-2 Maneuver	-	-	-	-	687	-
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	831	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	12.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1506	-	-	687	969
HCM Lane V/C Ratio	0.017	-	-	0.373	0.05
HCM Control Delay (s)	7.4	-	-	13.3	8.9
HCM Lane LOS	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	1.7	0.2

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	189	285	0
Future Vol, veh/h	0	0	0	189	285	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	220	331	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	551	331	331	0	-	0
Stage 1	331	-	-	-	-	-
Stage 2	220	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	495	711	1228	-	-	-
Stage 1	728	-	-	-	-	-
Stage 2	817	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	495	711	1228	-	-	-
Mov Cap-2 Maneuver	639	-	-	-	-	-
Stage 1	728	-	-	-	-	-
Stage 2	817	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1228	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	40	0	0	37	0	0
Future Vol, veh/h	40	0	0	37	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	0	0	40	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	43	0	83	43
Stage 1	-	-	-	-	43	-
Stage 2	-	-	-	-	40	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1566	-	919	1027
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	982	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1566	-	919	1027
Mov Cap-2 Maneuver	-	-	-	-	919	-
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	982	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1566	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	56	0	0	55	0	0	0	0	0	0	0
Future Vol, veh/h	0	56	0	0	55	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	72	0	0	71	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	71	0	0	72	0	0	143	143	72	143	143	71
Stage 1	-	-	-	-	-	-	72	72	-	71	71	-
Stage 2	-	-	-	-	-	-	71	71	-	72	72	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1529	-	-	1528	-	-	826	748	990	826	748	991
Stage 1	-	-	-	-	-	-	938	835	-	939	836	-
Stage 2	-	-	-	-	-	-	939	836	-	938	835	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1529	-	-	1528	-	-	826	748	990	826	748	991
Mov Cap-2 Maneuver	-	-	-	-	-	-	826	748	-	826	748	-
Stage 1	-	-	-	-	-	-	938	835	-	939	836	-
Stage 2	-	-	-	-	-	-	939	836	-	938	835	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1529	-	-	1528	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	95	34	3	94	35	11
Future Vol, veh/h	95	34	3	94	35	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	71	71	71	71	71	71
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	134	48	4	132	49	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	182	0	274	134
Stage 1	-	-	-	-	134	-
Stage 2	-	-	-	-	140	-
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	-	-	1393	-	716	915
Stage 1	-	-	-	-	892	-
Stage 2	-	-	-	-	887	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1393	-	714	915
Mov Cap-2 Maneuver	-	-	-	-	714	-
Stage 1	-	-	-	-	892	-
Stage 2	-	-	-	-	884	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	754	-	-	1393	-
HCM Lane V/C Ratio	0.086	-	-	0.003	-
HCM Control Delay (s)	10.2	-	-	7.6	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	68	37	29	20	24	66
Future Vol, veh/h	68	37	29	20	24	66
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	103	56	44	30	36	100
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	8.6	7.6	7.9
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	65%	0%	100%	0%
Vol Thru, %	35%	59%	0%	0%
Vol Right, %	0%	41%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	105	49	24	66
LT Vol	68	0	24	0
Through Vol	37	29	0	0
RT Vol	0	20	0	66
Lane Flow Rate	159	74	36	100
Geometry Grp	2	2	7	7
Degree of Util (X)	0.197	0.086	0.056	0.121
Departure Headway (Hd)	4.464	4.187	5.565	4.36
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	807	858	646	824
Service Time	2.474	2.199	3.28	2.075
HCM Lane V/C Ratio	0.197	0.086	0.056	0.121
HCM Control Delay	8.6	7.6	8.6	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.3	0.2	0.4

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	86	132	44	62	50	64
Future Vol, veh/h	86	132	44	62	50	64
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	115	176	59	83	67	85
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	9.7	9.2	8.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	42%	39%	0%	0%
Vol Thru, %	58%	0%	100%	0%
Vol Right, %	0%	61%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	106	218	50	64
LT Vol	44	86	0	0
Through Vol	62	0	50	0
RT Vol	0	132	0	64
Lane Flow Rate	141	291	67	85
Geometry Grp	5	2	7	7
Degree of Util (X)	0.195	0.351	0.099	0.11
Departure Headway (Hd)	4.966	4.353	5.343	4.637
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	721	825	669	771
Service Time	3.009	2.382	3.085	2.379
HCM Lane V/C Ratio	0.196	0.353	0.1	0.11
HCM Control Delay	9.2	9.7	8.7	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	1.6	0.3	0.4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	46	54	235	25	111	378
v/c Ratio	0.09	0.07	0.24	0.03	0.19	0.26
Control Delay	16.3	2.9	11.3	6.4	14.4	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.3	2.9	11.3	6.4	14.4	3.4
Queue Length 50th (ft)	6	0	24	0	13	0
Queue Length 95th (ft)	35	13	108	13	64	79
Internal Link Dist (ft)	944		951			673
Turn Bay Length (ft)	165			405	410	
Base Capacity (vph)	1050	1247	1536	1309	1200	1810
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.04	0.15	0.02	0.09	0.21

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	42	50	216	23	102	348
Future Volume (veh/h)	42	50	216	23	102	348
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	46	54	235	25	111	378
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	165	303	492	417	176	992
Arrive On Green	0.09	0.09	0.27	0.27	0.10	0.54
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	46	54	235	25	111	378
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	0.7	0.9	3.2	0.4	1.8	3.5
Cycle Q Clear(g_c), s	0.7	0.9	3.2	0.4	1.8	3.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	165	303	492	417	176	992
V/C Ratio(X)	0.28	0.18	0.48	0.06	0.63	0.38
Avail Cap(c_a), veh/h	830	895	1866	1582	1171	3040
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	1.00
Uniform Delay (d), s/veh	12.4	9.9	9.1	8.0	12.7	3.9
Incr Delay (d2), s/veh	0.9	0.3	0.7	0.1	3.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.2	0.8	0.1	0.6	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.3	10.2	9.8	8.1	16.4	4.1
LnGrp LOS	B	B	A	A	B	A
Approach Vol, veh/h	100		260			489
Approach Delay, s/veh	11.6		9.6			6.9
Approach LOS	B		A			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	8.1	13.8			21.8	7.7
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	3.8	5.2			5.5	2.9
Green Ext Time (p_c), s	0.2	1.3			2.2	0.2

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

1: Tinloy St /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)	6.8	11.4	4.6	7.0

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.3	1.3	0.0	0.5
Total Del/Veh (s)	5.1	6.7	10.3	6.9

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.3	0.2
Total Del/Veh (s)	6.5	8.0	0.9	4.2

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.4	2.0	1.1
Total Del/Veh (s)	16.8	6.5	10.6	10.0	9.0

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.5	2.8	0.7
Total Del/Veh (s)	8.0	13.1	13.7	35.9	16.5

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.4	4.6	23.1	9.0

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.6	1.6	0.0	0.4
Total Del/Veh (s)	9.0	15.4	12.9	3.6	9.5

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.5	2.6	1.0
Total Del/Veh (s)	9.6	9.4	5.7	8.2

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.7	0.0	0.1	0.7
Total Del/Veh (s)	6.6	7.6	8.3	7.4

Total Zone Performance

Denied Del/Veh (s)	1.2
Total Del/Veh (s)	186.6

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	98	130	71	60
Average Queue (ft)	59	48	30	27
95th Queue (ft)	99	95	61	53
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	2			
Queuing Penalty (veh)	5			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	114	65	91	92	76
Average Queue (ft)	60	24	40	44	31
95th Queue (ft)	101	53	78	79	64
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	0			0	0
Queuing Penalty (veh)	0			0	0
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	0		
Queuing Penalty (veh)		0	0		

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	94	81	35	55	4
Average Queue (ft)	46	36	8	30	0
95th Queue (ft)	76	62	31	47	4
Link Distance (ft)	1196	1196		262	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	52	63	72	97	7	103	79	74	130	86
Average Queue (ft)	17	23	32	34	0	47	30	23	59	30
95th Queue (ft)	45	50	61	71	3	83	60	57	99	65
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)						0	0			
Queuing Penalty (veh)						0	0			

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	123	152	95	127	134	77	109	134	154	60	59
Average Queue (ft)	33	62	49	31	46	22	48	43	83	17	29
95th Queue (ft)	81	123	89	93	106	57	85	100	136	46	52
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	0	0	1	1	1						
Queuing Penalty (veh)	0	0	0	2	2						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			1	1		0	0				
Queuing Penalty (veh)			1	1		1	0				

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	<	R	T
Maximum Queue (ft)	58	84	42	60	204	116	50
Average Queue (ft)	11	21	4	7	104	54	3
95th Queue (ft)	37	59	21	33	177	91	34
Link Distance (ft)	456	456	334	334	145	145	915
Upstream Blk Time (%)					4	0	
Queuing Penalty (veh)					0	0	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	50	77	86	127	105	85	78	118	83	134	98	57
Average Queue (ft)	16	36	35	51	48	38	39	57	21	65	37	26
95th Queue (ft)	44	67	72	100	87	69	68	102	55	110	74	55
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	71
Average Queue (ft)	27
95th Queue (ft)	61
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	67	108	61	61	71	53	72	54
Average Queue (ft)	29	43	23	22	25	16	27	26
95th Queue (ft)	56	87	52	47	55	44	56	48
Link Distance (ft)	211	211		1564	1564		800	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	96	50	107	69	63	85	55
Average Queue (ft)	37	21	42	21	11	37	26
95th Queue (ft)	73	41	84	54	41	67	48
Link Distance (ft)	548		211	211	211	1120	1120
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		155					
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 12

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

EPAP 830-1930 PM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	40	3.0	0.093	4.5	LOS A	0.4	9.9	0.42	0.30	0.42	34.2
8	T1	37	3.0	0.093	4.5	LOS A	0.4	9.9	0.42	0.30	0.42	34.2
18	R2	14	3.0	0.093	4.5	LOS A	0.4	9.9	0.42	0.30	0.42	33.2
Approach		92	3.0	0.093	4.5	LOS A	0.4	9.9	0.42	0.30	0.42	34.0
East: Idaho Maryland Rd												
1	L2	151	3.0	0.137	4.5	LOS A	0.6	14.3	0.36	0.25	0.36	32.8
6	T1	161	3.0	0.230	5.4	LOS A	1.0	26.1	0.40	0.28	0.40	35.0
16	R2	93	3.0	0.230	5.4	LOS A	1.0	26.1	0.40	0.28	0.40	33.9
Approach		405	3.0	0.230	5.0	LOS A	1.0	26.1	0.38	0.27	0.38	33.8
North: Main St												
7	L2	54	3.0	0.207	5.5	LOS A	0.8	21.1	0.44	0.36	0.44	34.3
4	T1	156	3.0	0.207	5.5	LOS A	0.8	21.1	0.44	0.36	0.44	34.2
14	R2	210	3.0	0.129	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		419	3.0	0.207	2.8	LOS A	0.8	21.1	0.22	0.18	0.22	35.6
West: Main St												
5	L2	160	3.0	0.261	6.1	LOS A	1.1	27.7	0.47	0.39	0.47	33.0
2	T1	79	3.0	0.261	6.1	LOS A	1.1	27.7	0.47	0.39	0.47	32.9
12	R2	24	3.0	0.261	6.1	LOS A	1.1	27.7	0.47	0.39	0.47	32.0
Approach		262	3.0	0.261	6.1	LOS A	1.1	27.7	0.47	0.39	0.47	32.9
All Vehicles		1177	3.0	0.261	4.4	LOS A	1.1	27.7	0.35	0.27	0.35	34.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	20
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	57	313	8	0	0	0	0	177	249	146	244	0
Future Vol, veh/h	57	313	8	0	0	0	0	177	249	146	244	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	63	344	9	0	0	0	0	195	274	160	268	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	14.9	29.4	14.8
HCM LOS	B	D	B

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	27%	0%	100%	0%
Vol Thru, %	42%	73%	95%	0%	100%
Vol Right, %	58%	0%	5%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	426	214	165	146	244
LT Vol	0	57	0	146	0
Through Vol	177	157	157	0	244
RT Vol	249	0	8	0	0
Lane Flow Rate	468	235	181	160	268
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.799	0.465	0.35	0.318	0.493
Departure Headway (Hd)	6.141	7.135	6.964	7.125	6.615
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	585	502	515	502	542
Service Time	4.202	4.906	4.735	4.899	4.388
HCM Lane V/C Ratio	0.8	0.468	0.351	0.319	0.494
HCM Control Delay	29.4	16	13.5	13.2	15.7
HCM Lane LOS	D	C	B	B	C
HCM 95th-tile Q	7.8	2.4	1.6	1.4	2.7

Intersection	
Intersection Delay, s/veh	27.8
Intersection LOS	D

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	295	48	44	391	268	474
Future Vol, veh/h	295	48	44	391	268	474
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	317	52	47	420	288	510
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	26.1	18.1	34.2
HCM LOS	D	C	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	25%	0%
Vol Thru, %	0%	0%	86%	75%	100%
Vol Right, %	0%	100%	14%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	268	474	343	174	261
LT Vol	268	0	0	44	0
Through Vol	0	0	295	130	261
RT Vol	0	474	48	0	0
Lane Flow Rate	288	510	369	187	280
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.604	0.895	0.718	0.394	0.579
Departure Headway (Hd)	7.546	6.321	7.01	7.561	7.431
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	475	571	513	474	482
Service Time	5.325	4.099	5.082	5.348	5.218
HCM Lane V/C Ratio	0.606	0.893	0.719	0.395	0.581
HCM Control Delay	21.3	41.5	26.1	15.2	20
HCM Lane LOS	C	E	D	C	C
HCM 95th-tile Q	3.9	10.5	5.8	1.9	3.6

Intersection	
Intersection Delay, s/veh	14
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	624	122	22	352	82	30
Future Vol, veh/h	624	122	22	352	82	30
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	657	128	23	371	86	32
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	15.6	11.6	10.9
HCM LOS	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	73%	0%	0%	16%	0%
Vol Thru, %	0%	100%	63%	84%	100%
Vol Right, %	27%	0%	37%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	112	416	330	139	235
LT Vol	82	0	0	22	0
Through Vol	0	416	208	117	235
RT Vol	30	0	122	0	0
Lane Flow Rate	118	438	347	147	247
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.204	0.657	0.496	0.24	0.398
Departure Headway (Hd)	6.235	5.404	5.143	5.88	5.8
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	577	674	705	612	622
Service Time	4.262	3.104	2.843	3.606	3.526
HCM Lane V/C Ratio	0.205	0.65	0.492	0.24	0.397
HCM Control Delay	10.9	17.8	12.8	10.5	12.3
HCM Lane LOS	B	C	B	B	B
HCM 95th-tile Q	0.8	4.9	2.8	0.9	1.9

Intersection	
Int Delay, s/veh	24.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	218	64	0	107	250	473	19	38	350	8
Future Vol, veh/h	0	0	218	64	0	107	250	473	19	38	350	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	550	-	-	120	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	232	68	0	114	266	503	20	40	372	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	1507	372	1618	1506	513	381	0	0	523	0	0
Stage 1	-	452	-	1045	1045	-	-	-	-	-	-	-
Stage 2	-	1055	-	573	461	-	-	-	-	-	-	-
Critical Hdwy	-	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	-	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	121	674	83	121	561	1177	-	-	1043	-	-
Stage 1	0	570	-	276	306	-	-	-	-	-	-	-
Stage 2	0	302	-	505	565	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	90	674	~ 44	90	561	1177	-	-	1043	-	-
Mov Cap-2 Maneuver	-	90	-	~ 44	90	-	-	-	-	-	-	-
Stage 1	-	548	-	214	237	-	-	-	-	-	-	-
Stage 2	-	234	-	319	544	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.1	187.3	3	0.8
HCM LOS	B	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1177	-	-	674	44	561	1043	-	-
HCM Lane V/C Ratio	0.226	-	-	0.344	1.547	0.203	0.039	-	-
HCM Control Delay (s)	8.9	-	-	13.1	$ 478.6	13	8.6	-	-
HCM Lane LOS	A	-	-	B	F	B	A	-	-
HCM 95th %tile Q(veh)	0.9	-	-	1.5	6.8	0.8	0.1	-	-

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

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	53	77	724	520	94
Future Vol, veh/h	22	53	77	724	520	94
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	59	86	804	578	104

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1606	341	682	0	-	0
Stage 1	630	-	-	-	-	-
Stage 2	976	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	105	656	909	-	-	-
Stage 1	494	-	-	-	-	-
Stage 2	364	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	95	656	909	-	-	-
Mov Cap-2 Maneuver	282	-	-	-	-	-
Stage 1	447	-	-	-	-	-
Stage 2	364	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.3	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	909	-	282	656	-	-
HCM Lane V/C Ratio	0.094	-	0.087	0.09	-	-
HCM Control Delay (s)	9.4	-	19	11	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.3	0.3	-	-

Intersection	
Intersection Delay, s/veh	47.3
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	23	24	28	57	182	28	531	13	61	283	27
Future Vol, veh/h	41	23	24	28	57	182	28	531	13	61	283	27
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	44	25	26	30	61	196	30	571	14	66	304	29
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	13	17.4	84.6	19.4
HCM LOS	B	C	F	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	47%	10%	100%	0%
Vol Thru, %	0%	98%	26%	21%	0%	91%
Vol Right, %	0%	2%	27%	68%	0%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	28	544	88	267	61	310
LT Vol	28	0	41	28	61	0
Through Vol	0	531	23	57	0	283
RT Vol	0	13	24	182	0	27
Lane Flow Rate	30	585	95	287	66	333
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.06	1.084	0.202	0.527	0.134	0.627
Departure Headway (Hd)	7.201	6.673	8.001	6.917	7.637	7.06
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	500	550	451	525	472	513
Service Time	4.905	4.377	6.001	4.917	5.337	4.76
HCM Lane V/C Ratio	0.06	1.064	0.211	0.547	0.14	0.649
HCM Control Delay	10.4	88.4	13	17.4	11.5	20.9
HCM Lane LOS	B	F	B	C	B	C
HCM 95th-tile Q	0.2	17.9	0.7	3	0.5	4.3

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	118	160	263	405	160	105
Future Vol, veh/h	118	160	263	405	160	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	126	170	280	431	170	112

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	280	0	-	0	702	280
Stage 1	-	-	-	-	280	-
Stage 2	-	-	-	-	422	-
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	1283	-	-	0	404	759
Stage 1	-	-	-	0	767	-
Stage 2	-	-	-	0	662	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1283	-	-	-	364	759
Mov Cap-2 Maneuver	-	-	-	-	364	-
Stage 1	-	-	-	-	692	-
Stage 2	-	-	-	-	662	-

Approach	EB	WB	SB
HCM Control Delay, s	3.4	0	18.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1283	-	-	364	759
HCM Lane V/C Ratio	0.098	-	-	0.468	0.147
HCM Control Delay (s)	8.1	-	-	23.3	10.6
HCM Lane LOS	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	-	-	2.4	0.5

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	15	22	517	240	95
Future Vol, veh/h	54	15	22	517	240	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	56	16	23	539	250	99

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	885	300	349	0	-	0
Stage 1	300	-	-	-	-	-
Stage 2	585	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	315	740	1210	-	-	-
Stage 1	752	-	-	-	-	-
Stage 2	557	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	309	740	1210	-	-	-
Mov Cap-2 Maneuver	488	-	-	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	557	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.9	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1210	-	527	-	-
HCM Lane V/C Ratio	0.019	-	0.136	-	-
HCM Control Delay (s)	8	-	12.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	78	0	0	112	0	10
Future Vol, veh/h	78	0	0	112	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	85	0	0	122	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	85	0	207	85
Stage 1	-	-	-	-	85	-
Stage 2	-	-	-	-	122	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1512	-	781	974
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	903	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1512	-	781	974
Mov Cap-2 Maneuver	-	-	-	-	781	-
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	903	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	974	-	-	1512	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	8.7	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	309	0	12	106	0	0	0	8	0	0	0
Future Vol, veh/h	0	309	0	12	106	0	0	0	8	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	368	0	14	126	0	0	0	10	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	126	0	0	368	0	0	522	522	368	527	522	126
Stage 1	-	-	-	-	-	-	368	368	-	154	154	-
Stage 2	-	-	-	-	-	-	154	154	-	373	368	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1460	-	-	1191	-	-	465	459	677	462	459	924
Stage 1	-	-	-	-	-	-	652	621	-	848	770	-
Stage 2	-	-	-	-	-	-	848	770	-	648	621	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1460	-	-	1191	-	-	460	453	677	451	453	924
Mov Cap-2 Maneuver	-	-	-	-	-	-	460	453	-	451	453	-
Stage 1	-	-	-	-	-	-	652	621	-	848	760	-
Stage 2	-	-	-	-	-	-	837	760	-	639	621	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.8	10.4	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	677	1460	-	-	1191	-	-	-
HCM Lane V/C Ratio	0.014	-	-	-	0.012	-	-	-
HCM Control Delay (s)	10.4	0	-	-	8.1	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	256	236	26	244	74	12
Future Vol, veh/h	256	236	26	244	74	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	264	243	27	252	76	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	507	0	570	264
Stage 1	-	-	-	-	264	-
Stage 2	-	-	-	-	306	-
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	-	-	1058	-	483	775
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	747	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1058	-	470	775
Mov Cap-2 Maneuver	-	-	-	-	470	-
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	728	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	13.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	497	-	-	1058	-
HCM Lane V/C Ratio	0.178	-	-	0.025	-
HCM Control Delay (s)	13.8	-	-	8.5	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	109	144	132	93	46	123
Future Vol, veh/h	109	144	132	93	46	123
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	128	169	155	109	54	145
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	11.1	9.9	9.4
HCM LOS	B	A	A

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	43%	0%	100%	0%
Vol Thru, %	57%	59%	0%	0%
Vol Right, %	0%	41%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	253	225	46	123
LT Vol	109	0	46	0
Through Vol	144	132	0	0
RT Vol	0	93	0	123
Lane Flow Rate	298	265	54	145
Geometry Grp	2	2	7	7
Degree of Util (X)	0.4	0.335	0.095	0.205
Departure Headway (Hd)	4.835	4.56	6.315	5.102
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	741	784	564	697
Service Time	2.889	2.614	4.091	2.877
HCM Lane V/C Ratio	0.402	0.338	0.096	0.208
HCM Control Delay	11.1	9.9	9.8	9.2
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.9	1.5	0.3	0.8

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	97	85	167	90	88	79
Future Vol, veh/h	97	85	167	90	88	79
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	108	94	186	100	98	88
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	9.7	11	8.5
HCM LOS	A	B	A

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	65%	53%	0%	0%
Vol Thru, %	35%	0%	100%	0%
Vol Right, %	0%	47%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	257	182	88	79
LT Vol	167	97	0	0
Through Vol	90	0	88	0
RT Vol	0	85	0	79
Lane Flow Rate	286	202	98	88
Geometry Grp	5	2	7	7
Degree of Util (X)	0.387	0.273	0.144	0.112
Departure Headway (Hd)	4.883	4.86	5.306	4.6
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	734	736	673	775
Service Time	2.934	2.909	3.061	2.355
HCM Lane V/C Ratio	0.39	0.274	0.146	0.114
HCM Control Delay	11	9.7	9	7.9
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.8	1.1	0.5	0.4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	59	198	673	147	299	345
v/c Ratio	0.28	0.32	0.80	0.19	0.71	0.23
Control Delay	32.7	8.2	28.1	3.7	34.0	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.7	8.2	28.1	3.7	34.0	3.1
Queue Length 50th (ft)	24	25	262	0	120	37
Queue Length 95th (ft)	59	62	#518	33	212	74
Internal Link Dist (ft)	911		875			623
Turn Bay Length (ft)	165			405	405	
Base Capacity (vph)	394	730	888	830	556	1531
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.27	0.76	0.18	0.54	0.23

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	54	182	619	135	275	317
Future Volume (veh/h)	54	182	619	135	275	317
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	59	198	673	147	299	345
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	233	522	755	640	355	1274
Arrive On Green	0.13	0.13	0.41	0.41	0.20	0.70
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	59	198	673	147	299	345
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	1.9	6.2	21.7	3.9	10.5	4.5
Cycle Q Clear(g_c), s	1.9	6.2	21.7	3.9	10.5	4.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	233	522	755	640	355	1274
V/C Ratio(X)	0.25	0.38	0.89	0.23	0.84	0.27
Avail Cap(c_a), veh/h	386	659	869	736	545	1415
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	1.00
Uniform Delay (d), s/veh	24.7	16.0	17.3	12.1	24.3	3.6
Incr Delay (d2), s/veh	0.6	0.5	10.4	0.2	7.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.1	9.4	1.1	4.5	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.2	16.4	27.7	12.2	31.5	3.7
LnGrp LOS	C	B	C	B	C	A
Approach Vol, veh/h	257		820			644
Approach Delay, s/veh	18.4		25.0			16.6
Approach LOS	B		C			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	18.0	32.0			50.1	13.4
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	12.5	23.7			6.5	8.2
Green Ext Time (p_c), s	0.5	2.5			2.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	20.9
HCM 6th LOS	C

1: Tinloy St /Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.3	0.0	0.1
Total Del/Veh (s)	9.5	32.0	6.2	15.7

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.1	1.3	0.0	0.6
Total Del/Veh (s)	5.4	8.9	16.3	10.1

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.3	0.2
Total Del/Veh (s)	8.3	9.2	1.0	6.1

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.5	1.9	0.9
Total Del/Veh (s)	14.1	8.2	11.5	12.3	10.4

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.5	2.7	0.8
Total Del/Veh (s)	9.9	13.0	13.4	34.8	18.0

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.1	7.2	25.1	12.6

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.5	1.5	0.0	0.3
Total Del/Veh (s)	11.2	19.3	17.7	5.1	12.8

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.1	0.2	1.7	0.9
Total Del/Veh (s)	18.1	18.1	11.9	15.2

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.6	0.0	0.2	0.4
Total Del/Veh (s)	13.7	7.3	13.8	10.0

Total Zone Performance

Denied Del/Veh (s)	1.1
Total Del/Veh (s)	328.5

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	113	361	116	78
Average Queue (ft)	75	138	51	28
95th Queue (ft)	116	293	94	62
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	6			
Queuing Penalty (veh)	17			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	120	117	179	120	98
Average Queue (ft)	56	41	81	70	47
95th Queue (ft)	102	88	145	113	87
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	0			3	0
Queuing Penalty (veh)	0			5	0
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	3		
Queuing Penalty (veh)		0	7		

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	133	109	33	87	25
Average Queue (ft)	62	51	10	43	2
95th Queue (ft)	99	84	32	68	13
Link Distance (ft)	1196	1196		262	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	T	R	L	L	T
Maximum Queue (ft)	51	104	113	139	124	91	85	122	119
Average Queue (ft)	19	44	50	52	56	37	30	66	51
95th Queue (ft)	46	82	91	105	96	66	66	105	97
Link Distance (ft)	777	160	160	160	1486				1622
Upstream Blk Time (%)			0	0					
Queuing Penalty (veh)			0	0					
Storage Bay Dist (ft)						115	360	360	
Storage Blk Time (%)					0				
Queuing Penalty (veh)					0				

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	144	162	102	170	165	66	95	184	201	83	94
Average Queue (ft)	50	72	60	58	77	19	44	81	117	28	42
95th Queue (ft)	112	139	99	138	152	51	76	160	181	66	76
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	0	0	1	3	3						
Queuing Penalty (veh)	0	1	0	8	10						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			1	3		0	0		0		
Queuing Penalty (veh)			2	3		0	0		0		

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	<	R	T
Maximum Queue (ft)	100	101	105	119	219	226	345
Average Queue (ft)	31	31	21	28	158	128	59
95th Queue (ft)	74	76	71	85	230	212	232
Link Distance (ft)	456	456	334	334	145	145	915
Upstream Blk Time (%)					17	8	
Queuing Penalty (veh)					0	0	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	92	102	138	138	134	102	156	212	64	132	103	76
Average Queue (ft)	36	55	66	80	57	49	70	113	16	60	37	35
95th Queue (ft)	71	85	116	121	98	88	126	184	46	106	77	67
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)						0	1					
Queuing Penalty (veh)						0	1					

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	87
Average Queue (ft)	32
95th Queue (ft)	67
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	133	192	84	118	127	180	252	118
Average Queue (ft)	55	92	29	51	60	39	125	30
95th Queue (ft)	106	166	64	96	112	104	217	75
Link Distance (ft)	211	211		1564	1564		800	
Upstream Blk Time (%)		0						
Queuing Penalty (veh)		0						
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)				0		0	1	
Queuing Penalty (veh)				0		0	3	

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	186	116	153	132	144	128	81
Average Queue (ft)	83	29	71	57	56	56	39
95th Queue (ft)	155	78	130	111	120	101	68
Link Distance (ft)	548		211	211	211	1120	1120
Upstream Blk Time (%)			0				
Queuing Penalty (veh)			0				
Storage Bay Dist (ft)		155					
Storage Blk Time (%)	1	0					
Queuing Penalty (veh)	1	0					

Zone Summary

Zone wide Queuing Penalty: 61

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

EPAP plus Project AM Peak
To Centennial
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	36	3.0	0.251	7.8	LOS A	1.1	27.7	0.62	0.61	0.62	33.3
8	T1	67	3.0	0.251	7.8	LOS A	1.1	27.7	0.62	0.61	0.62	33.2
18	R2	83	3.0	0.251	7.8	LOS A	1.1	27.7	0.62	0.61	0.62	32.3
Approach		186	3.0	0.251	7.8	LOS A	1.1	27.7	0.62	0.61	0.62	32.8
East: Idaho Maryland Rd												
1	L2	257	3.0	0.265	6.4	LOS A	1.2	29.7	0.50	0.43	0.50	31.9
6	T1	141	3.0	0.425	8.6	LOS A	2.2	55.2	0.58	0.52	0.58	33.2
16	R2	270	3.0	0.425	8.6	LOS A	2.2	55.2	0.58	0.52	0.58	32.2
Approach		668	3.0	0.425	7.7	LOS A	2.2	55.2	0.55	0.48	0.55	32.3
North: Main St												
7	L2	129	3.0	0.331	7.3	LOS A	1.4	36.6	0.53	0.49	0.53	32.9
4	T1	183	3.0	0.331	7.3	LOS A	1.4	36.6	0.53	0.49	0.53	32.9
14	R2	207	3.0	0.127	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		519	3.0	0.331	4.4	LOS A	1.4	36.6	0.32	0.29	0.32	34.4
West: Main St												
5	L2	276	3.0	0.541	12.0	LOS B	3.8	98.6	0.69	0.83	1.07	30.5
2	T1	163	3.0	0.541	12.0	LOS B	3.8	98.6	0.69	0.83	1.07	30.4
12	R2	14	3.0	0.541	12.0	LOS B	3.8	98.6	0.69	0.83	1.07	29.6
Approach		453	3.0	0.541	12.0	LOS B	3.8	98.6	0.69	0.83	1.07	30.4
All Vehicles		1826	3.0	0.541	7.8	LOS A	3.8	98.6	0.53	0.53	0.62	32.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	16.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	60	282	3	0	0	0	0	122	156	174	331	0
Future Vol, veh/h	60	282	3	0	0	0	0	122	156	174	331	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	67	313	3	0	0	0	0	136	173	193	368	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	16.1	17.4
HCM LOS	B	C	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	30%	0%	100%	0%
Vol Thru, %	44%	70%	98%	0%	100%
Vol Right, %	56%	0%	2%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	278	201	144	174	331
LT Vol	0	60	0	174	0
Through Vol	122	141	141	0	331
RT Vol	156	0	3	0	0
Lane Flow Rate	309	223	160	193	368
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.531	0.435	0.304	0.363	0.639
Departure Headway (Hd)	6.187	7.004	6.837	6.767	6.259
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	581	514	525	530	577
Service Time	4.241	4.759	4.592	4.524	4.015
HCM Lane V/C Ratio	0.532	0.434	0.305	0.364	0.638
HCM Control Delay	16.1	15.1	12.6	13.4	19.5
HCM Lane LOS	C	C	B	B	C
HCM 95th-tile Q	3.1	2.2	1.3	1.6	4.5

Intersection	
Intersection Delay, s/veh	38.9
Intersection LOS	E

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	220	53	66	776	169	248
Future Vol, veh/h	220	53	66	776	169	248
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	244	59	73	862	188	276
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	18.1	56.8	16.4
HCM LOS	C	F	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	20%	0%
Vol Thru, %	0%	0%	81%	80%	100%
Vol Right, %	0%	100%	19%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	169	248	273	325	517
LT Vol	169	0	0	66	0
Through Vol	0	0	220	259	517
RT Vol	0	248	53	0	0
Lane Flow Rate	188	276	303	361	575
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.411	0.512	0.559	0.671	1.053
Departure Headway (Hd)	8.069	6.841	6.793	6.698	6.595
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	449	529	534	541	552
Service Time	5.769	4.541	4.793	4.433	4.329
HCM Lane V/C Ratio	0.419	0.522	0.567	0.667	1.042
HCM Control Delay	16.3	16.5	18.1	22.1	78.6
HCM Lane LOS	C	C	C	C	F
HCM 95th-tile Q	2	2.9	3.4	5	16.6

Intersection	
Intersection Delay, s/veh	22.3
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	447	72	23	717	93	30
Future Vol, veh/h	447	72	23	717	93	30
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	514	83	26	824	107	34
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	15.2	29	12.1
HCM LOS	C	D	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	76%	0%	0%	9%	0%
Vol Thru, %	0%	100%	67%	91%	100%
Vol Right, %	24%	0%	33%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	123	298	221	262	478
LT Vol	93	0	0	23	0
Through Vol	0	298	149	239	478
RT Vol	30	0	72	0	0
Lane Flow Rate	141	343	254	301	549
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.263	0.58	0.414	0.488	0.884
Departure Headway (Hd)	6.708	6.101	5.87	5.839	5.794
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	536	593	612	617	626
Service Time	4.746	3.842	3.611	3.573	3.528
HCM Lane V/C Ratio	0.263	0.578	0.415	0.488	0.877
HCM Control Delay	12.1	17	12.7	14	37.2
HCM Lane LOS	B	C	B	B	E
HCM 95th-tile Q	1	3.7	2	2.7	10.5

Intersection	
Int Delay, s/veh	13.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	240	25	0	76	299	499	57	94	476	14
Future Vol, veh/h	0	0	240	25	0	76	299	499	57	94	476	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	50	-	0	550	-	-	120	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	247	26	0	78	308	514	59	97	491	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	491	1976	-	544	505	0	0	573	0	0
Stage 1	-	-	-	1160	-	-	-	-	-	-	-	-
Stage 2	-	-	-	816	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.22	7.12	-	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	6.12	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.12	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.318	3.518	-	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	0	578	46	0	539	1060	-	-	1000	-	-
Stage 1	0	0	-	238	0	-	-	-	-	-	-	-
Stage 2	0	0	-	371	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	578	~ 19	-	539	1060	-	-	1000	-	-
Mov Cap-2 Maneuver	-	-	-	~ 19	-	-	-	-	-	-	-	-
Stage 1	-	-	-	169	-	-	-	-	-	-	-	-
Stage 2	-	-	-	192	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.8	164.1	3.4	1.4
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1060	-	-	578	19	539	1000	-	-
HCM Lane V/C Ratio	0.291	-	-	0.428	1.356	0.145	0.097	-	-
HCM Control Delay (s)	9.8	-	-	15.8	$ 624.1	12.8	9	-	-
HCM Lane LOS	A	-	-	C	F	B	A	-	-
HCM 95th %tile Q(veh)	1.2	-	-	2.1	3.6	0.5	0.3	-	-

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

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	94	66	33	759	694	42
Future Vol, veh/h	94	66	33	759	694	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	99	69	35	799	731	44

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1622	388	775	0	-	0
Stage 1	753	-	-	-	-	-
Stage 2	869	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	103	611	839	-	-	-
Stage 1	427	-	-	-	-	-
Stage 2	409	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	99	611	839	-	-	-
Mov Cap-2 Maneuver	290	-	-	-	-	-
Stage 1	409	-	-	-	-	-
Stage 2	409	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.7	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	839	-	290	611	-	-
HCM Lane V/C Ratio	0.041	-	0.341	0.114	-	-
HCM Control Delay (s)	9.5	-	23.7	11.6	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.5	0.4	-	-

Intersection	
Intersection Delay, s/veh	37.5
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	29	27	25	44	85	21	393	36	153	550	33
Future Vol, veh/h	30	29	27	25	44	85	21	393	36	153	550	33
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	29	27	25	44	86	21	397	36	155	556	33
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	12.1	13	27.7	51.5
HCM LOS	B	B	D	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	35%	16%	100%	0%
Vol Thru, %	0%	92%	34%	29%	0%	94%
Vol Right, %	0%	8%	31%	55%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	21	429	86	154	153	583
LT Vol	21	0	30	25	153	0
Through Vol	0	393	29	44	0	550
RT Vol	0	36	27	85	0	33
Lane Flow Rate	21	433	87	156	155	589
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.042	0.781	0.179	0.3	0.287	1.002
Departure Headway (Hd)	7.055	6.485	7.418	6.951	6.675	6.126
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	509	559	483	516	541	595
Service Time	4.774	4.204	5.475	4.999	4.389	3.84
HCM Lane V/C Ratio	0.041	0.775	0.18	0.302	0.287	0.99
HCM Control Delay	10.1	28.6	12.1	13	12.1	61.9
HCM Lane LOS	B	D	B	B	B	F
HCM 95th-tile Q	0.1	7.2	0.6	1.3	1.2	14.9

Intersection	
Int Delay, s/veh	47.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	78	226	239	273	409	116
Future Vol, veh/h	78	226	239	273	409	116
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	85	246	260	297	445	126

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	260	0	-	0	676	260
Stage 1	-	-	-	-	260	-
Stage 2	-	-	-	-	416	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1304	-	-	0	~ 419	779
Stage 1	-	-	-	0	783	-
Stage 2	-	-	-	0	666	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	1304	-	-	-	~ 392	779
Mov Cap-2 Maneuver	-	-	-	-	~ 392	-
Stage 1	-	-	-	-	732	-
Stage 2	-	-	-	-	666	-

Approach	EB	WB	SB
HCM Control Delay, s	2	0	95.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1304	-	-	392	779
HCM Lane V/C Ratio	0.065	-	-	1.134	0.162
HCM Control Delay (s)	8	-	-	119.2	10.5
HCM Lane LOS	A	-	-	F	B
HCM 95th %tile Q(veh)	0.2	-	-	16.6	0.6

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

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	85	22	15	365	537	64
Future Vol, veh/h	85	22	15	365	537	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	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	92	24	16	397	584	70

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1048	619	654	0	-	0
Stage 1	619	-	-	-	-	-
Stage 2	429	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	252	489	933	-	-	-
Stage 1	537	-	-	-	-	-
Stage 2	657	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	248	489	933	-	-	-
Mov Cap-2 Maneuver	443	-	-	-	-	-
Stage 1	528	-	-	-	-	-
Stage 2	657	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.7	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	933	-	452	-	-
HCM Lane V/C Ratio	0.017	-	0.257	-	-
HCM Control Delay (s)	8.9	-	15.7	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	76	0	0	98	0	10
Future Vol, veh/h	76	0	0	98	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	83	0	0	107	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	83	0	190	83
Stage 1	-	-	-	-	83	-
Stage 2	-	-	-	-	107	-
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	-	-	1514	-	799	976
Stage 1	-	-	-	-	940	-
Stage 2	-	-	-	-	917	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1514	-	799	976
Mov Cap-2 Maneuver	-	-	-	-	799	-
Stage 1	-	-	-	-	940	-
Stage 2	-	-	-	-	917	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	976	-	-	1514	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	8.7	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	114	0	8	261	0	0	0	12	0	0	0
Future Vol, veh/h	0	114	0	8	261	0	0	0	12	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	152	0	11	348	0	0	0	16	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	348	0	0	152	0	0	522	522	152	530	522	348
Stage 1	-	-	-	-	-	-	152	152	-	370	370	-
Stage 2	-	-	-	-	-	-	370	370	-	160	152	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1211	-	-	1429	-	-	465	459	894	460	459	695
Stage 1	-	-	-	-	-	-	850	772	-	650	620	-
Stage 2	-	-	-	-	-	-	650	620	-	842	772	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1211	-	-	1429	-	-	461	454	894	449	454	695
Mov Cap-2 Maneuver	-	-	-	-	-	-	461	454	-	449	454	-
Stage 1	-	-	-	-	-	-	850	772	-	650	614	-
Stage 2	-	-	-	-	-	-	644	614	-	827	772	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	9.1	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	894	1211	-	-	1429	-	-	-
HCM Lane V/C Ratio	0.018	-	-	-	0.007	-	-	-
HCM Control Delay (s)	9.1	0	-	-	7.5	0	-	0
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	35.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	329	120	12	425	245	37
Future Vol, veh/h	329	120	12	425	245	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	411	150	15	531	306	46

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	561	0	972	411
Stage 1	-	-	-	-	411	-
Stage 2	-	-	-	-	561	-
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	-	-	1010	-	~ 280	641
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	571	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1010	-	~ 276	641
Mov Cap-2 Maneuver	-	-	-	-	~ 276	-
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	562	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	148.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	298	-	-	1010	-
HCM Lane V/C Ratio	1.183	-	-	0.015	-
HCM Control Delay (s)	148.4	-	-	8.6	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	15.4	-	-	0	-

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

Intersection	
Intersection Delay, s/veh	15.4
Intersection LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	212	131	234	75	112	208
Future Vol, veh/h	212	131	234	75	112	208
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	249	154	275	88	132	245
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	18.3	15.3	12.4
HCM LOS	C	C	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	62%	0%	100%	0%
Vol Thru, %	38%	76%	0%	0%
Vol Right, %	0%	24%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	343	309	112	208
LT Vol	212	0	112	0
Through Vol	131	234	0	0
RT Vol	0	75	0	208
Lane Flow Rate	404	364	132	245
Geometry Grp	2	2	7	7
Degree of Util (X)	0.638	0.556	0.26	0.399
Departure Headway (Hd)	5.695	5.508	7.091	5.869
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	634	654	506	612
Service Time	3.745	3.56	4.845	3.622
HCM Lane V/C Ratio	0.637	0.557	0.261	0.4
HCM Control Delay	18.3	15.3	12.3	12.5
HCM Lane LOS	C	C	B	B
HCM 95th-tile Q	4.6	3.4	1	1.9

Intersection	
Intersection Delay, s/veh	15.9
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	144	189	130	172	179	179
Future Vol, veh/h	144	189	130	172	179	179
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	173	228	157	207	216	216
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	18.2	17.8	12.1
HCM LOS	C	C	B

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	43%	43%	0%	0%
Vol Thru, %	57%	0%	100%	0%
Vol Right, %	0%	57%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	302	333	179	179
LT Vol	130	144	0	0
Through Vol	172	0	179	0
RT Vol	0	189	0	179
Lane Flow Rate	364	401	216	216
Geometry Grp	5	2	7	7
Degree of Util (X)	0.603	0.634	0.379	0.336
Departure Headway (Hd)	5.971	5.689	6.329	5.615
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	604	634	567	636
Service Time	4.032	3.748	4.095	3.382
HCM Lane V/C Ratio	0.603	0.632	0.381	0.34
HCM Control Delay	17.8	18.2	12.9	11.2
HCM Lane LOS	C	C	B	B
HCM 95th-tile Q	4	4.5	1.8	1.5

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	159	358	503	49	132	641
v/c Ratio	0.48	0.49	0.72	0.08	0.41	0.50
Control Delay	30.0	8.5	23.5	5.1	28.6	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.0	8.5	23.5	5.1	28.6	7.4
Queue Length 50th (ft)	52	36	150	0	43	109
Queue Length 95th (ft)	126	107	303	19	103	202
Internal Link Dist (ft)	901		887			643
Turn Bay Length (ft)	165			405	405	
Base Capacity (vph)	474	1001	1062	923	670	1607
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.36	0.47	0.05	0.20	0.40

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	146	329	463	45	121	590
Future Volume (veh/h)	146	329	463	45	121	590
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	159	358	503	49	132	641
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	427	534	626	530	174	992
Arrive On Green	0.25	0.25	0.34	0.34	0.10	0.54
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	159	358	503	49	132	641
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	3.8	10.0	12.7	1.1	3.7	12.5
Cycle Q Clear(g_c), s	3.8	10.0	12.7	1.1	3.7	12.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	427	534	626	530	174	992
V/C Ratio(X)	0.37	0.67	0.80	0.09	0.76	0.65
Avail Cap(c_a), veh/h	484	585	1089	923	683	1774
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	1.00
Uniform Delay (d), s/veh	15.9	14.1	15.1	11.3	22.2	8.1
Incr Delay (d2), s/veh	0.5	2.6	2.5	0.1	6.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.3	4.4	0.3	1.6	3.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.4	16.8	17.6	11.4	28.9	8.8
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	517		552			773
Approach Delay, s/veh	16.6		17.0			12.3
Approach LOS	B		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	10.2	23.2			33.3	17.3
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	5.7	14.7			14.5	12.0
Green Ext Time (p_c), s	0.3	2.7			4.3	0.4

Intersection Summary	
HCM 6th Ctrl Delay	14.9
HCM 6th LOS	B

1: Tinloy St /Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.0	0.1
Total Del/Veh (s)	11.0	24.8	6.5	12.4

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	1.0	0.0	0.4
Total Del/Veh (s)	6.2	9.2	19.9	11.1

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.5	0.3
Total Del/Veh (s)	11.6	9.9	1.8	7.3

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.5	2.1	1.2
Total Del/Veh (s)	18.4	10.4	17.5	17.2	14.6

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.5	2.7	0.8
Total Del/Veh (s)	15.2	15.4	20.6	37.3	21.5

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.5	9.8	28.1	13.9

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.5	1.5	0.0	0.5
Total Del/Veh (s)	17.6	35.9	31.5	13.6	24.4

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.5	2.7	0.9
Total Del/Veh (s)	13.4	13.9	13.7	13.7

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	2.4	0.1	0.2	1.1
Total Del/Veh (s)	19.3	11.6	15.7	15.7

Total Zone Performance

Denied Del/Veh (s)	1.4
Total Del/Veh (s)	770.4

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	112	242	102	106
Average Queue (ft)	75	102	48	48
95th Queue (ft)	116	208	88	89
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	8			
Queuing Penalty (veh)	23			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	142	115	191	122	110
Average Queue (ft)	85	34	83	80	64
95th Queue (ft)	141	81	149	124	107
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	1			7	2
Queuing Penalty (veh)	5			10	3
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	3		
Queuing Penalty (veh)		0	7		

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	166	169	38	78	47
Average Queue (ft)	78	68	14	42	5
95th Queue (ft)	134	123	39	66	26
Link Distance (ft)	1196	1196		262	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	40	111	100	165	29	236	133	210	244	194
Average Queue (ft)	13	49	50	85	2	94	65	74	119	64
95th Queue (ft)	38	91	87	154	17	172	123	166	199	132
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)		0		0						
Queuing Penalty (veh)		0		1						
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)						4	2			0
Queuing Penalty (veh)						6	4			0

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	173	190	102	171	181	109	177	226	229	113	104
Average Queue (ft)	101	134	63	62	99	37	86	121	146	36	47
95th Queue (ft)	186	208	102	144	184	85	148	201	206	85	81
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	1	7	2	3	8						
Queuing Penalty (veh)	4	25	0	12	26						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			2	3		0	6	0	0		
Queuing Penalty (veh)			6	4		0	2	0	0		

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	R	<	R	T
Maximum Queue (ft)	145	153	184	337	224	217	234	389
Average Queue (ft)	56	60	64	92	9	140	173	97
95th Queue (ft)	119	124	158	235	93	226	257	308
Link Distance (ft)	456	456	334	334	334	145	145	915
Upstream Blk Time (%)				0	0	13	26	
Queuing Penalty (veh)				1	0	0	0	
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	123	147	178	192	222	175	260	375	264	309	265	149
Average Queue (ft)	62	82	102	109	98	88	132	216	100	174	92	66
95th Queue (ft)	111	129	165	170	174	153	229	327	212	265	181	120
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)			0	0	0	3	8		0	1	0	
Queuing Penalty (veh)			0	0	1	10	11		0	3	0	

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	117
Average Queue (ft)	55
95th Queue (ft)	103
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	190	222	142	136	164	102	134	128
Average Queue (ft)	85	97	58	52	69	42	59	56
95th Queue (ft)	156	193	112	99	129	81	108	102
Link Distance (ft)	211	211		1564	1564		800	
Upstream Blk Time (%)	0	1						
Queuing Penalty (veh)	0	3						
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)			0	0				
Queuing Penalty (veh)			1	0				

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	461	180	211	113	118	180	75
Average Queue (ft)	180	108	106	39	36	91	34
95th Queue (ft)	371	203	184	95	95	156	62
Link Distance (ft)	548		211	211	211	1120	1120
Upstream Blk Time (%)	1		0				
Queuing Penalty (veh)	0		1				
Storage Bay Dist (ft)		155					
Storage Blk Time (%)	10	1					
Queuing Penalty (veh)	40	4					

Zone Summary

Zone wide Queuing Penalty: 216

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

EPAP plus Project PM Peak
To Centennial
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	75	3.0	0.245	6.6	LOS A	1.1	28.6	0.54	0.47	0.54	33.4
8	T1	71	3.0	0.245	6.6	LOS A	1.1	28.6	0.54	0.47	0.54	33.4
18	R2	73	3.0	0.245	6.6	LOS A	1.1	28.6	0.54	0.47	0.54	32.4
Approach		218	3.0	0.245	6.6	LOS A	1.1	28.6	0.54	0.47	0.54	33.1
East: Idaho Maryland Rd												
1	L2	372	3.0	0.375	7.7	LOS A	1.8	46.7	0.54	0.46	0.54	31.3
6	T1	258	3.0	0.493	9.5	LOS A	3.3	83.3	0.61	0.58	0.72	32.8
16	R2	234	3.0	0.493	9.5	LOS A	3.3	83.3	0.61	0.58	0.72	31.8
Approach		863	3.0	0.493	8.7	LOS A	3.3	83.3	0.58	0.53	0.64	31.9
North: Main St												
7	L2	77	3.0	0.389	9.8	LOS A	1.8	47.2	0.65	0.70	0.80	32.2
4	T1	213	3.0	0.389	9.8	LOS A	1.8	47.2	0.65	0.70	0.80	32.1
14	R2	329	3.0	0.203	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		619	3.0	0.389	4.6	LOS A	1.8	47.2	0.30	0.33	0.38	34.6
West: Main St												
5	L2	207	3.0	0.452	10.7	LOS B	2.5	63.9	0.66	0.75	0.92	31.0
2	T1	107	3.0	0.452	10.7	LOS B	2.5	63.9	0.66	0.75	0.92	30.9
12	R2	35	3.0	0.452	10.7	LOS B	2.5	63.9	0.66	0.75	0.92	30.1
Approach		349	3.0	0.452	10.7	LOS B	2.5	63.9	0.66	0.75	0.92	30.9
All Vehicles		2049	3.0	0.493	7.6	LOS A	3.3	83.3	0.50	0.50	0.60	32.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	9.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	96	6	0	0	0	0	86	100	89	100	0
Future Vol, veh/h	15	96	6	0	0	0	0	86	100	89	100	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	109	7	0	0	0	0	98	114	101	114	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	9	9.8	9.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	24%	0%	100%	0%
Vol Thru, %	46%	76%	89%	0%	100%
Vol Right, %	54%	0%	11%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	186	63	54	89	100
LT Vol	0	15	0	89	0
Through Vol	86	48	48	0	100
RT Vol	100	0	6	0	0
Lane Flow Rate	211	72	61	101	114
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.284	0.113	0.094	0.157	0.16
Departure Headway (Hd)	4.83	5.688	5.49	5.587	5.084
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	744	629	652	642	705
Service Time	2.864	3.432	3.234	3.323	2.82
HCM Lane V/C Ratio	0.284	0.114	0.094	0.157	0.162
HCM Control Delay	9.8	9.2	8.8	9.4	8.8
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	1.2	0.4	0.3	0.6	0.6

Intersection	
Intersection Delay, s/veh	17.2
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	197	19	32	204	125	367
Future Vol, veh/h	197	19	32	204	125	367
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	256	25	42	265	162	477
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	15.9	12.5	20.1
HCM LOS	C	B	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	32%	0%
Vol Thru, %	0%	0%	91%	68%	100%
Vol Right, %	0%	100%	9%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	125	367	216	100	136
LT Vol	125	0	0	32	0
Through Vol	0	0	197	68	136
RT Vol	0	367	19	0	0
Lane Flow Rate	162	477	281	130	177
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.307	0.74	0.502	0.25	0.332
Departure Headway (Hd)	6.807	5.592	6.439	6.933	6.769
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	528	643	558	517	530
Service Time	4.562	3.346	4.496	4.697	4.534
HCM Lane V/C Ratio	0.307	0.742	0.504	0.251	0.334
HCM Control Delay	12.6	22.7	15.9	12	12.9
HCM Lane LOS	B	C	C	B	B
HCM 95th-tile Q	1.3	6.5	2.8	1	1.4

Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	475	68	20	175	44	7
Future Vol, veh/h	475	68	20	175	44	7
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	609	87	26	224	56	9
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	12.4	9.5	9.6
HCM LOS	B	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	86%	0%	0%	26%	0%
Vol Thru, %	0%	100%	70%	74%	100%
Vol Right, %	14%	0%	30%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	51	317	226	78	117
LT Vol	44	0	0	20	0
Through Vol	0	317	158	58	117
RT Vol	7	0	68	0	0
Lane Flow Rate	65	406	290	100	150
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.106	0.559	0.382	0.153	0.223
Departure Headway (Hd)	5.857	4.955	4.744	5.498	5.37
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	609	727	757	651	667
Service Time	3.914	2.689	2.478	3.246	3.118
HCM Lane V/C Ratio	0.107	0.558	0.383	0.154	0.225
HCM Control Delay	9.6	13.8	10.4	9.2	9.7
HCM Lane LOS	A	B	B	A	A
HCM 95th-tile Q	0.4	3.5	1.8	0.5	0.8

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	162	46	0	55	132	231	10	11	230	3
Future Vol, veh/h	0	0	162	46	0	55	132	231	10	11	230	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	550	-	-	120	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	195	55	0	66	159	278	12	13	277	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	911	277	1005	909	284	281	0	0	290	0	0
Stage 1	-	303	-	602	602	-	-	-	-	-	-	-
Stage 2	-	608	-	403	307	-	-	-	-	-	-	-
Critical Hdwy	-	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	-	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	274	762	220	275	755	1282	-	-	1272	-	-
Stage 1	0	664	-	486	489	-	-	-	-	-	-	-
Stage 2	0	486	-	624	661	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	238	762	147	238	755	1282	-	-	1272	-	-
Mov Cap-2 Maneuver	-	238	-	147	238	-	-	-	-	-	-	-
Stage 1	-	657	-	426	428	-	-	-	-	-	-	-
Stage 2	-	426	-	459	654	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.3	25.4	2.9	0.4
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1282	-	-	762	147	755	1272	-	-
HCM Lane V/C Ratio	0.124	-	-	0.256	0.377	0.088	0.01	-	-
HCM Control Delay (s)	8.2	-	-	11.3	43.6	10.2	7.9	-	-
HCM Lane LOS	A	-	-	B	E	B	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	1	1.6	0.3	0	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	36	44	360	374	49
Future Vol, veh/h	13	36	44	360	374	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	47	58	474	492	64

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1114	278	556	0	-	0
Stage 1	524	-	-	-	-	-
Stage 2	590	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	216	720	1013	-	-	-
Stage 1	560	-	-	-	-	-
Stage 2	553	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	204	720	1013	-	-	-
Mov Cap-2 Maneuver	406	-	-	-	-	-
Stage 1	528	-	-	-	-	-
Stage 2	553	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.4	1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1013	-	406	720	-	-
HCM Lane V/C Ratio	0.057	-	0.042	0.066	-	-
HCM Control Delay (s)	8.8	-	14.3	10.4	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	0.2	-	-

Intersection	
Intersection Delay, s/veh	12.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	10	20	29	26	83	24	342	6	30	184	11
Future Vol, veh/h	20	10	20	29	26	83	24	342	6	30	184	11
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	11	22	32	29	92	27	380	7	33	204	12
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	9.4	10.1	15.2	10.8
HCM LOS	A	B	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	40%	21%	100%	0%
Vol Thru, %	0%	98%	20%	19%	0%	94%
Vol Right, %	0%	2%	40%	60%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	24	348	50	138	30	195
LT Vol	24	0	20	29	30	0
Through Vol	0	342	10	26	0	184
RT Vol	0	6	20	83	0	11
Lane Flow Rate	27	387	56	153	33	217
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.044	0.586	0.09	0.232	0.057	0.336
Departure Headway (Hd)	5.969	5.452	5.807	5.439	6.124	5.578
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	603	665	616	659	586	646
Service Time	3.669	3.152	3.851	3.477	3.853	3.308
HCM Lane V/C Ratio	0.045	0.582	0.091	0.232	0.056	0.336
HCM Control Delay	8.9	15.6	9.4	10.1	9.2	11.1
HCM Lane LOS	A	C	A	B	A	B
HCM 95th-tile Q	0.1	3.8	0.3	0.9	0.2	1.5

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	52	123	127	245	128	47
Future Vol, veh/h	52	123	127	245	128	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	154	159	306	160	59

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	159	0	-	0	443	159
Stage 1	-	-	-	-	159	-
Stage 2	-	-	-	-	284	-
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	1420	-	-	0	572	886
Stage 1	-	-	-	0	870	-
Stage 2	-	-	-	0	764	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1420	-	-	-	546	886
Mov Cap-2 Maneuver	-	-	-	-	546	-
Stage 1	-	-	-	-	830	-
Stage 2	-	-	-	-	764	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	13
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1420	-	-	546	886
HCM Lane V/C Ratio	0.046	-	-	0.293	0.066
HCM Control Delay (s)	7.7	-	-	14.3	9.4
HCM Lane LOS	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	1.2	0.2

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	15	22	317	138	95
Future Vol, veh/h	54	15	22	317	138	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	61	17	25	360	157	108

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	621	211	265	0	-	0
Stage 1	211	-	-	-	-	-
Stage 2	410	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	451	829	1299	-	-	-
Stage 1	824	-	-	-	-	-
Stage 2	670	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	442	829	1299	-	-	-
Mov Cap-2 Maneuver	594	-	-	-	-	-
Stage 1	808	-	-	-	-	-
Stage 2	670	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.5	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1299	-	633	-	-
HCM Lane V/C Ratio	0.019	-	0.124	-	-
HCM Control Delay (s)	7.8	-	11.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	40	0	0	61	0	10
Future Vol, veh/h	40	0	0	61	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	0	0	66	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	43	0	109	43
Stage 1	-	-	-	-	43	-
Stage 2	-	-	-	-	66	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1566	-	888	1027
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	957	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1566	-	888	1027
Mov Cap-2 Maneuver	-	-	-	-	888	-
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	957	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1027	-	-	1566	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	8.5	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	176	0	12	66	0	0	0	8	0	0	0
Future Vol, veh/h	0	176	0	12	66	0	0	0	8	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	71	71	71	71	71	71	71	71	71
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	248	0	17	93	0	0	0	11	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	93	0	0	248	0	0	375	375	248	381	375	93
Stage 1	-	-	-	-	-	-	248	248	-	127	127	-
Stage 2	-	-	-	-	-	-	127	127	-	254	248	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1501	-	-	1318	-	-	582	556	791	577	556	964
Stage 1	-	-	-	-	-	-	756	701	-	877	791	-
Stage 2	-	-	-	-	-	-	877	791	-	750	701	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1501	-	-	1318	-	-	576	548	791	563	548	964
Mov Cap-2 Maneuver	-	-	-	-	-	-	576	548	-	563	548	-
Stage 1	-	-	-	-	-	-	756	701	-	877	780	-
Stage 2	-	-	-	-	-	-	865	780	-	739	701	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.2	9.6	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	791	1501	-	-	1318	-	-	-
HCM Lane V/C Ratio	0.014	-	-	-	0.013	-	-	-
HCM Control Delay (s)	9.6	0	-	-	7.8	0	-	0
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	186	173	10	154	39	6
Future Vol, veh/h	186	173	10	154	39	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	248	231	13	205	52	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	479	0	479	248
Stage 1	-	-	-	-	248	-
Stage 2	-	-	-	-	231	-
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	-	-	1083	-	545	791
Stage 1	-	-	-	-	793	-
Stage 2	-	-	-	-	807	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1083	-	538	791
Mov Cap-2 Maneuver	-	-	-	-	538	-
Stage 1	-	-	-	-	793	-
Stage 2	-	-	-	-	797	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	562	-	-	1083	-
HCM Lane V/C Ratio	0.107	-	-	0.012	-
HCM Control Delay (s)	12.2	-	-	8.4	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	48	124	89	47	30	59
Future Vol, veh/h	48	124	89	47	30	59
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	56	146	105	55	35	69
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	8.9	8.2	8.2
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	28%	0%	100%	0%
Vol Thru, %	72%	65%	0%	0%
Vol Right, %	0%	35%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	172	136	30	59
LT Vol	48	0	30	0
Through Vol	124	89	0	0
RT Vol	0	47	0	59
Lane Flow Rate	202	160	35	69
Geometry Grp	2	2	7	7
Degree of Util (X)	0.248	0.187	0.057	0.089
Departure Headway (Hd)	4.416	4.207	5.834	4.626
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	815	854	615	775
Service Time	2.432	2.223	3.56	2.351
HCM Lane V/C Ratio	0.248	0.187	0.057	0.089
HCM Control Delay	8.9	8.2	8.9	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1	0.7	0.2	0.3

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	32	49	89	38	43	46
Future Vol, veh/h	32	49	89	38	43	46
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	63	114	49	55	59
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.9	8.7	7.6
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	70%	40%	0%	0%
Vol Thru, %	30%	0%	100%	0%
Vol Right, %	0%	60%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	127	81	43	46
LT Vol	89	32	0	0
Through Vol	38	0	43	0
RT Vol	0	49	0	46
Lane Flow Rate	163	104	55	59
Geometry Grp	5	2	7	7
Degree of Util (X)	0.201	0.124	0.075	0.069
Departure Headway (Hd)	4.543	4.282	4.906	4.203
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	795	841	735	857
Service Time	2.543	2.287	2.606	1.903
HCM Lane V/C Ratio	0.205	0.124	0.075	0.069
HCM Control Delay	8.7	7.9	8	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.4	0.2	0.2

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	30	87	364	130	230	224
v/c Ratio	0.11	0.14	0.57	0.21	0.48	0.14
Control Delay	24.2	3.4	17.3	4.3	19.9	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.2	3.4	17.3	4.3	19.9	2.2
Queue Length 50th (ft)	5	0	48	0	32	0
Queue Length 95th (ft)	35	21	198	31	146	42
Internal Link Dist (ft)	1030		917			643
Turn Bay Length (ft)	165			405	405	
Base Capacity (vph)	639	964	1387	1209	902	1711
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.09	0.26	0.11	0.25	0.13

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	28	80	335	120	212	206
Future Volume (veh/h)	28	80	335	120	212	206
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	30	87	364	130	230	224
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	166	419	538	456	305	1115
Arrive On Green	0.10	0.10	0.29	0.29	0.18	0.61
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	30	87	364	130	230	224
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	0.6	1.6	6.4	2.4	4.6	2.0
Cycle Q Clear(g_c), s	0.6	1.6	6.4	2.4	4.6	2.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	166	419	538	456	305	1115
V/C Ratio(X)	0.18	0.21	0.68	0.28	0.75	0.20
Avail Cap(c_a), veh/h	674	871	1516	1285	951	2470
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	1.00
Uniform Delay (d), s/veh	15.1	10.2	11.3	9.9	14.2	3.1
Incr Delay (d2), s/veh	0.5	0.2	1.5	0.3	3.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.4	1.8	0.5	1.6	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.7	10.5	12.8	10.2	18.0	3.2
LnGrp LOS	B	B	B	B	B	A
Approach Vol, veh/h	117		494			454
Approach Delay, s/veh	11.8		12.1			10.7
Approach LOS	B		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	11.5	16.5			28.0	8.4
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	6.6	8.4			4.0	3.6
Green Ext Time (p_c), s	0.5	2.3			1.2	0.2

Intersection Summary	
HCM 6th Ctrl Delay	11.5
HCM 6th LOS	B

1: Tinloy St /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)	2.8	9.6	4.3	5.1

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	1.5	0.0	0.5
Total Del/Veh (s)	4.4	5.8	8.2	6.1

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.1
Total Del/Veh (s)	5.5	7.5	0.5	3.8

8: Main St & Maltman Dr/Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.3	2.1	1.0
Total Del/Veh (s)	14.1	4.4	7.5	6.6	5.9

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.7	2.9	0.9
Total Del/Veh (s)	4.6	9.8	14.2	38.4	16.8

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.4	3.9	20.8	8.7

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.3	1.4	0.0	0.2
Total Del/Veh (s)	5.6	8.9	11.1	1.1	5.2

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.2	1.6	0.8
Total Del/Veh (s)	11.2	11.2	7.4	9.3

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.7	0.0	0.1	0.5
Total Del/Veh (s)	7.1	5.6	7.3	6.2

Total Zone Performance

Denied Del/Veh (s)	1.1
Total Del/Veh (s)	71.9

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	90	105	60	52
Average Queue (ft)	31	48	22	16
95th Queue (ft)	69	86	52	42
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	1			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	97	63	92	100	87
Average Queue (ft)	42	23	35	43	28
95th Queue (ft)	76	53	73	85	67
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	0			0	0
Queuing Penalty (veh)	0			0	0
Storage Bay Dist (ft)		100			
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	61	61	31	52	2
Average Queue (ft)	35	26	7	30	0
95th Queue (ft)	52	52	28	45	2
Link Distance (ft)	1196	1196		262	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: Main St & Maltman Dr/Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	32	46	50	77	15	69	53	32	85	55
Average Queue (ft)	7	16	17	26	1	27	17	7	35	15
95th Queue (ft)	28	38	41	57	10	59	42	27	66	40
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	59	86	77	64	105	31	29	116	138	59	55
Average Queue (ft)	10	23	30	12	26	4	8	33	74	14	24
95th Queue (ft)	38	63	62	44	75	20	28	83	125	43	50
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)			0	0	0						
Queuing Penalty (veh)			0	0	0						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			0	0							
Queuing Penalty (veh)			0	0							

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	<	R	T
Maximum Queue (ft)	46	35	28	37	187	130	29
Average Queue (ft)	6	5	2	3	94	57	1
95th Queue (ft)	26	22	14	19	159	98	12
Link Distance (ft)	456	456	334	334	145	145	915
Upstream Blk Time (%)					2	0	
Queuing Penalty (veh)					0	0	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	50	57	66	97	57	51	79	115	30	72	45	46
Average Queue (ft)	16	29	21	39	19	19	31	51	4	26	14	14
95th Queue (ft)	43	55	56	77	47	44	67	97	18	53	35	41
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)							0					
Queuing Penalty (veh)							0					

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	33
Average Queue (ft)	6
95th Queue (ft)	26
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	75	115	44	68	79	78	144	51
Average Queue (ft)	27	43	14	26	28	23	62	20
95th Queue (ft)	60	84	37	53	58	57	113	43
Link Distance (ft)	211	211		1564	1564		800	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	103	50	100	85	91	58	63
Average Queue (ft)	34	18	42	29	23	23	27
95th Queue (ft)	73	40	80	67	66	52	50
Link Distance (ft)	548		211	211	211	1120	1120
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		155					
Storage Blk Time (%)	0						
Queuing Penalty (veh)	0						

Zone Summary

Zone wide Queuing Penalty: 1

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

EPAP plus Project 0630-0730 AM
To Centennial
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	16	3.0	0.089	4.7	LOS A	0.4	9.3	0.45	0.34	0.45	34.9
8	T1	22	3.0	0.089	4.7	LOS A	0.4	9.3	0.45	0.34	0.45	34.8
18	R2	45	3.0	0.089	4.7	LOS A	0.4	9.3	0.45	0.34	0.45	33.8
Approach		83	3.0	0.089	4.7	LOS A	0.4	9.3	0.45	0.34	0.45	34.2
East: Idaho Maryland Rd												
1	L2	148	3.0	0.128	4.2	LOS A	0.5	13.4	0.32	0.19	0.32	32.9
6	T1	62	3.0	0.156	4.5	LOS A	0.7	16.8	0.33	0.20	0.33	35.4
16	R2	118	3.0	0.156	4.5	LOS A	0.7	16.8	0.33	0.20	0.33	34.3
Approach		329	3.0	0.156	4.3	LOS A	0.7	16.8	0.32	0.20	0.32	33.8
North: Main St												
7	L2	70	3.0	0.197	5.0	LOS A	0.8	20.6	0.35	0.24	0.35	34.4
4	T1	153	3.0	0.197	5.0	LOS A	0.8	20.6	0.35	0.24	0.35	34.3
14	R2	77	3.0	0.047	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		300	3.0	0.197	3.7	LOS A	0.8	20.6	0.26	0.18	0.26	35.0
West: Main St												
5	L2	148	3.0	0.295	6.6	LOS A	1.3	32.2	0.49	0.42	0.49	33.0
2	T1	122	3.0	0.295	6.6	LOS A	1.3	32.2	0.49	0.42	0.49	33.0
12	R2	23	3.0	0.295	6.6	LOS A	1.3	32.2	0.49	0.42	0.49	32.1
Approach		294	3.0	0.295	6.6	LOS A	1.3	32.2	0.49	0.42	0.49	32.9
All Vehicles		1005	3.0	0.295	4.8	LOS A	1.3	32.2	0.36	0.27	0.36	33.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	15.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	47	329	3	0	0	0	0	96	155	164	304	0
Future Vol, veh/h	47	329	3	0	0	0	0	96	155	164	304	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	52	366	3	0	0	0	0	107	172	182	338	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	14.8	16.2
HCM LOS	B	B	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	22%	0%	100%	0%
Vol Thru, %	38%	78%	98%	0%	100%
Vol Right, %	62%	0%	2%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	251	212	168	164	304
LT Vol	0	47	0	164	0
Through Vol	96	165	165	0	304
RT Vol	155	0	3	0	0
Lane Flow Rate	279	235	186	182	338
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.479	0.445	0.346	0.344	0.591
Departure Headway (Hd)	6.184	6.822	6.697	6.805	6.297
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	583	526	536	528	571
Service Time	4.234	4.574	4.449	4.557	4.049
HCM Lane V/C Ratio	0.479	0.447	0.347	0.345	0.592
HCM Control Delay	14.8	15	13	13.1	17.8
HCM Lane LOS	B	B	B	B	C
HCM 95th-tile Q	2.6	2.3	1.5	1.5	3.8

Intersection	
Intersection Delay, s/veh	23.7
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	288	61	57	644	203	224
Future Vol, veh/h	288	61	57	644	203	224
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	306	65	61	685	216	238
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	22.9	28.7	16
HCM LOS	C	D	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	21%	0%
Vol Thru, %	0%	0%	83%	79%	100%
Vol Right, %	0%	100%	17%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	203	224	349	272	429
LT Vol	203	0	0	57	0
Through Vol	0	0	288	215	429
RT Vol	0	224	61	0	0
Lane Flow Rate	216	238	371	289	457
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.472	0.44	0.683	0.543	0.844
Departure Headway (Hd)	7.875	6.647	6.618	6.76	6.653
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	456	539	546	532	544
Service Time	5.647	4.418	4.683	4.533	4.426
HCM Lane V/C Ratio	0.474	0.442	0.679	0.543	0.84
HCM Control Delay	17.6	14.6	22.9	17.4	35.9
HCM Lane LOS	C	B	C	C	E
HCM 95th-tile Q	2.5	2.2	5.2	3.2	8.8

Intersection	
Intersection Delay, s/veh	17
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	390	88	31	545	107	49
Future Vol, veh/h	390	88	31	545	107	49
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	480	108	38	671	132	60
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	14.6	20.1	13
HCM LOS	B	C	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	69%	0%	0%	15%	0%
Vol Thru, %	0%	100%	60%	85%	100%
Vol Right, %	31%	0%	40%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	156	260	218	213	363
LT Vol	107	0	0	31	0
Through Vol	0	260	130	182	363
RT Vol	49	0	88	0	0
Lane Flow Rate	192	320	268	262	447
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.347	0.545	0.435	0.439	0.741
Departure Headway (Hd)	6.505	6.128	5.841	6.042	5.968
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	553	589	614	594	604
Service Time	4.548	3.876	3.589	3.787	3.713
HCM Lane V/C Ratio	0.347	0.543	0.436	0.441	0.74
HCM Control Delay	13	16	13	13.5	23.9
HCM Lane LOS	B	C	B	B	C
HCM 95th-tile Q	1.5	3.3	2.2	2.2	6.4

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	200	27	0	49	211	470	50	86	426	13
Future Vol, veh/h	0	0	200	27	0	49	211	470	50	86	426	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	550	-	-	120	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	213	29	0	52	224	500	53	91	453	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	1636	453	1724	1624	527	467	0	0	553	0	0
Stage 1	-	635	-	975	975	-	-	-	-	-	-	-
Stage 2	-	1001	-	749	649	-	-	-	-	-	-	-
Critical Hdwy	-	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	-	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	101	607	70	102	551	1094	-	-	1017	-	-
Stage 1	0	472	-	303	330	-	-	-	-	-	-	-
Stage 2	0	321	-	404	466	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	73	607	36	74	551	1094	-	-	1017	-	-
Mov Cap-2 Maneuver	-	73	-	36	74	-	-	-	-	-	-	-
Stage 1	-	430	-	241	262	-	-	-	-	-	-	-
Stage 2	-	255	-	239	425	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.1	98.2	2.6	1.5
HCM LOS	B	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1094	-	-	607	36	551	1017	-	-
HCM Lane V/C Ratio	0.205	-	-	0.351	0.798	0.095	0.09	-	-
HCM Control Delay (s)	9.1	-	-	14.1	254.4	12.2	8.9	-	-
HCM Lane LOS	A	-	-	B	F	B	A	-	-
HCM 95th %tile Q(veh)	0.8	-	-	1.6	2.9	0.3	0.3	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	68	79	49	666	610	34
Future Vol, veh/h	68	79	49	666	610	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	70	81	51	687	629	35

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1436	332	664	0	-	0
Stage 1	647	-	-	-	-	-
Stage 2	789	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	135	665	923	-	-	-
Stage 1	484	-	-	-	-	-
Stage 2	446	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	128	665	923	-	-	-
Mov Cap-2 Maneuver	326	-	-	-	-	-
Stage 1	457	-	-	-	-	-
Stage 2	446	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.8	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	923	-	326	665	-	-
HCM Lane V/C Ratio	0.055	-	0.215	0.122	-	-
HCM Control Delay (s)	9.1	-	19	11.2	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.8	0.4	-	-

Intersection	
Intersection Delay, s/veh	20.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	33	10	17	25	85	12	358	24	127	440	26
Future Vol, veh/h	33	33	10	17	25	85	12	358	24	127	440	26
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	35	11	18	27	90	13	381	26	135	468	28
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	11.3	11.5	20.6	23.9
HCM LOS	B	B	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	43%	13%	100%	0%
Vol Thru, %	0%	94%	43%	20%	0%	94%
Vol Right, %	0%	6%	13%	67%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	12	382	76	127	127	466
LT Vol	12	0	33	17	127	0
Through Vol	0	358	33	25	0	440
RT Vol	0	24	10	85	0	26
Lane Flow Rate	13	406	81	135	135	496
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.023	0.682	0.156	0.239	0.237	0.796
Departure Headway (Hd)	6.592	6.04	6.924	6.367	6.327	5.78
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	541	597	514	559	566	625
Service Time	4.357	3.805	5.018	4.453	4.084	3.537
HCM Lane V/C Ratio	0.024	0.68	0.158	0.242	0.239	0.794
HCM Control Delay	9.5	20.9	11.3	11.5	11.1	27.4
HCM Lane LOS	A	C	B	B	B	D
HCM 95th-tile Q	0.1	5.3	0.5	0.9	0.9	7.8

Intersection	
Int Delay, s/veh	19.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	81	205	186	276	337	108
Future Vol, veh/h	81	205	186	276	337	108
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	89	225	204	303	370	119

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	204	0	-	0	607	204
Stage 1	-	-	-	-	204	-
Stage 2	-	-	-	-	403	-
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	-	-	0	460	837
Stage 1	-	-	-	0	830	-
Stage 2	-	-	-	0	675	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1368	-	-	-	430	837
Mov Cap-2 Maneuver	-	-	-	-	430	-
Stage 1	-	-	-	-	776	-
Stage 2	-	-	-	-	675	-

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	38.1
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1368	-	-	430	837
HCM Lane V/C Ratio	0.065	-	-	0.861	0.142
HCM Control Delay (s)	7.8	-	-	47.1	10
HCM Lane LOS	A	-	-	E	B
HCM 95th %tile Q(veh)	0.2	-	-	8.6	0.5

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	32	9	1	362	457	10
Future Vol, veh/h	32	9	1	362	457	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	9	1	381	481	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	870	487	492	0	-	0
Stage 1	487	-	-	-	-	-
Stage 2	383	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	322	581	1071	-	-	-
Stage 1	618	-	-	-	-	-
Stage 2	689	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	322	581	1071	-	-	-
Mov Cap-2 Maneuver	512	-	-	-	-	-
Stage 1	617	-	-	-	-	-
Stage 2	689	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1071	-	526	-	-
HCM Lane V/C Ratio	0.001	-	0.082	-	-
HCM Control Delay (s)	8.4	-	12.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	66	0	0	63	0	10
Future Vol, veh/h	66	0	0	63	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	72	0	0	68	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	72	0	140	72
Stage 1	-	-	-	-	72	-
Stage 2	-	-	-	-	68	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1528	-	853	990
Stage 1	-	-	-	-	951	-
Stage 2	-	-	-	-	955	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1528	-	853	990
Mov Cap-2 Maneuver	-	-	-	-	853	-
Stage 1	-	-	-	-	951	-
Stage 2	-	-	-	-	955	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	990	-	-	1528	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	8.7	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	104	0	8	174	0	0	0	12	0	0	0
Future Vol, veh/h	5	104	0	8	174	0	0	0	12	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	137	0	11	229	0	0	0	16	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	229	0	0	137	0	0	428	428	137	436	428	229
Stage 1	-	-	-	-	-	-	177	177	-	251	251	-
Stage 2	-	-	-	-	-	-	251	251	-	185	177	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1339	-	-	1447	-	-	537	519	911	531	519	810
Stage 1	-	-	-	-	-	-	825	753	-	753	699	-
Stage 2	-	-	-	-	-	-	753	699	-	817	753	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1339	-	-	1447	-	-	527	506	911	512	506	810
Mov Cap-2 Maneuver	-	-	-	-	-	-	527	506	-	512	506	-
Stage 1	-	-	-	-	-	-	812	741	-	741	693	-
Stage 2	-	-	-	-	-	-	746	693	-	790	741	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.3	9	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	911	1339	-	-	1447	-	-	-
HCM Lane V/C Ratio	0.017	0.015	-	-	0.007	-	-	-
HCM Control Delay (s)	9	7.7	0	-	7.5	0	-	0
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	28.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	303	120	12	400	245	37
Future Vol, veh/h	303	120	12	400	245	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	379	150	15	500	306	46

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	529	0	909	379
Stage 1	-	-	-	-	379	-
Stage 2	-	-	-	-	530	-
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	-	-	1038	-	~ 305	668
Stage 1	-	-	-	-	692	-
Stage 2	-	-	-	-	590	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1038	-	~ 301	668
Mov Cap-2 Maneuver	-	-	-	-	~ 301	-
Stage 1	-	-	-	-	692	-
Stage 2	-	-	-	-	582	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	112.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	324	-	-	1038	-
HCM Lane V/C Ratio	1.088	-	-	0.014	-
HCM Control Delay (s)	112.3	-	-	8.5	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	13.4	-	-	0	-

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

Intersection	
Intersection Delay, s/veh	14.3
Intersection LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	212	115	214	70	107	208
Future Vol, veh/h	212	115	214	70	107	208
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	249	135	252	82	126	245
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	16.8	13.9	12
HCM LOS	C	B	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	65%	0%	100%	0%
Vol Thru, %	35%	75%	0%	0%
Vol Right, %	0%	25%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	327	284	107	208
LT Vol	212	0	107	0
Through Vol	115	214	0	0
RT Vol	0	70	0	208
Lane Flow Rate	385	334	126	245
Geometry Grp	2	2	7	7
Degree of Util (X)	0.6	0.504	0.243	0.39
Departure Headway (Hd)	5.615	5.434	6.958	5.738
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	642	662	516	626
Service Time	3.657	3.479	4.703	3.482
HCM Lane V/C Ratio	0.6	0.505	0.244	0.391
HCM Control Delay	16.8	13.9	11.9	12.1
HCM Lane LOS	C	B	B	B
HCM 95th-tile Q	4	2.8	0.9	1.8

Intersection	
Intersection Delay, s/veh	15.7
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	144	186	127	172	179	179
Future Vol, veh/h	144	186	127	172	179	179
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	173	224	153	207	216	216
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	17.9	17.5	12.1
HCM LOS	C	C	B

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	42%	44%	0%	0%
Vol Thru, %	58%	0%	100%	0%
Vol Right, %	0%	56%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	299	330	179	179
LT Vol	127	144	0	0
Through Vol	172	0	179	0
RT Vol	0	186	0	179
Lane Flow Rate	360	398	216	216
Geometry Grp	5	2	7	7
Degree of Util (X)	0.596	0.627	0.378	0.335
Departure Headway (Hd)	5.954	5.68	6.307	5.594
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	605	632	569	641
Service Time	4.014	3.739	4.071	3.358
HCM Lane V/C Ratio	0.595	0.63	0.38	0.337
HCM Control Delay	17.5	17.9	12.9	11.2
HCM Lane LOS	C	C	B	B
HCM 95th-tile Q	3.9	4.4	1.8	1.5

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	192	342	454	82	180	470
v/c Ratio	0.59	0.40	0.75	0.14	0.52	0.42
Control Delay	33.8	5.7	27.2	4.9	29.7	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.8	5.7	27.2	4.9	29.7	6.9
Queue Length 50th (ft)	64	22	144	0	60	76
Queue Length 95th (ft)	#160	81	284	26	135	129
Internal Link Dist (ft)	1033		859			663
Turn Bay Length (ft)	165			405	405	
Base Capacity (vph)	419	1038	945	842	591	1588
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.33	0.48	0.10	0.30	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	177	315	418	75	166	432
Future Volume (veh/h)	177	315	418	75	166	432
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	192	342	454	82	180	470
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	404	568	579	491	235	1012
Arrive On Green	0.23	0.23	0.32	0.32	0.13	0.55
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	192	342	454	82	180	470
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	4.8	9.0	11.3	1.9	5.0	7.7
Cycle Q Clear(g_c), s	4.8	9.0	11.3	1.9	5.0	7.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	404	568	579	491	235	1012
V/C Ratio(X)	0.48	0.60	0.78	0.17	0.77	0.46
Avail Cap(c_a), veh/h	490	645	1101	933	691	1794
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	1.00
Uniform Delay (d), s/veh	16.6	12.9	15.5	12.3	20.9	6.7
Incr Delay (d2), s/veh	0.9	1.3	2.4	0.2	5.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	2.8	4.0	0.5	2.0	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.5	14.1	17.9	12.5	26.1	7.0
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	534		536			650
Approach Delay, s/veh	15.3		17.1			12.3
Approach LOS	B		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	11.9	21.7			33.5	16.5
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	7.0	13.3			9.7	11.0
Green Ext Time (p_c), s	0.4	2.6			2.9	0.6

Intersection Summary	
HCM 6th Ctrl Delay	14.7
HCM 6th LOS	B

1: Tinloy St /Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.0	0.1
Total Del/Veh (s)	7.9	14.3	5.1	8.2

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.4	1.1	0.0	0.5
Total Del/Veh (s)	5.7	8.1	12.6	8.7

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.4	0.2
Total Del/Veh (s)	9.6	9.1	1.6	6.3

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.5	2.1	1.1
Total Del/Veh (s)	17.6	9.3	16.7	15.9	13.4

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.5	2.8	0.7
Total Del/Veh (s)	14.3	13.7	20.1	36.1	19.8

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.6	9.2	26.7	13.6

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.5	1.5	0.0	0.4
Total Del/Veh (s)	16.4	32.5	27.9	11.6	22.0

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.5	2.6	0.9
Total Del/Veh (s)	13.9	14.7	13.4	14.0

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	2.6	0.0	0.2	1.2
Total Del/Veh (s)	19.4	11.6	16.1	15.9

Total Zone Performance

Denied Del/Veh (s)	1.4
Total Del/Veh (s)	675.1

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	104	148	94	86
Average Queue (ft)	62	72	43	39
95th Queue (ft)	103	126	77	73
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	3			
Queuing Penalty (veh)	8			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	125	117	159	116	108
Average Queue (ft)	68	33	65	62	50
95th Queue (ft)	109	78	117	103	90
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	0			1	1
Queuing Penalty (veh)	0			2	1
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	1		
Queuing Penalty (veh)		0	2		

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	143	136	39	72	34
Average Queue (ft)	70	56	17	35	4
95th Queue (ft)	115	98	42	56	20
Link Distance (ft)	1196	1196		262	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	45	105	109	162	22	207	137	186	201	125
Average Queue (ft)	13	46	47	80	1	90	61	61	107	57
95th Queue (ft)	39	87	88	148	11	157	114	136	173	107
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)				0						
Queuing Penalty (veh)				1						
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)						3	1			
Queuing Penalty (veh)						6	1			

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	181	191	102	173	180	96	156	199	214	85	100
Average Queue (ft)	94	130	65	64	97	34	75	102	135	27	46
95th Queue (ft)	181	207	103	145	177	77	131	180	197	65	79
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	1	6	1	3	6						
Queuing Penalty (veh)	3	19	0	12	24						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			1	3		1	4	0	0		
Queuing Penalty (veh)			4	4		1	1	0	0		

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	R	<	R	T
Maximum Queue (ft)	154	157	208	254	101	217	233	341
Average Queue (ft)	55	58	56	72	4	145	167	77
95th Queue (ft)	122	123	146	177	60	221	250	264
Link Distance (ft)	456	456	334	334	334	145	145	915
Upstream Blk Time (%)			0	0		13	22	
Queuing Penalty (veh)			0	0		0	0	
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	126	140	189	196	195	164	249	351	233	286	200	134
Average Queue (ft)	61	80	97	108	90	77	116	195	86	158	83	60
95th Queue (ft)	108	122	161	169	155	137	202	299	189	247	160	110
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)			0	0	0	2	5		0	0		
Queuing Penalty (veh)			0	0	0	7	7		0	1		

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	112	16
Average Queue (ft)	50	0
95th Queue (ft)	94	14
Link Distance (ft)	229	229
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	175	221	140	153	173	96	133	127
Average Queue (ft)	84	102	59	53	72	40	59	53
95th Queue (ft)	150	195	116	110	136	79	108	96
Link Distance (ft)	211	211		1564	1564		800	
Upstream Blk Time (%)	0	1						
Queuing Penalty (veh)	0	3						
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)			0	0				0
Queuing Penalty (veh)			0	0				0

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	446	179	209	125	116	207	77
Average Queue (ft)	180	107	109	40	38	96	34
95th Queue (ft)	377	205	183	94	89	165	60
Link Distance (ft)	548		211	211	211	1120	1120
Upstream Blk Time (%)	1		0	0			
Queuing Penalty (veh)	0		1	0			
Storage Bay Dist (ft)		155					
Storage Blk Time (%)	10	1					
Queuing Penalty (veh)	37	5					

Zone Summary

Zone wide Queuing Penalty: 153

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

EPAP plus Project 1530-1630 PM
To Centennial
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	59	3.0	0.224	6.3	LOS A	1.0	25.7	0.53	0.45	0.53	33.7
8	T1	54	3.0	0.224	6.3	LOS A	1.0	25.7	0.53	0.45	0.53	33.6
18	R2	86	3.0	0.224	6.3	LOS A	1.0	25.7	0.53	0.45	0.53	32.7
Approach		200	3.0	0.224	6.3	LOS A	1.0	25.7	0.53	0.45	0.53	33.2
East: Idaho Maryland Rd												
1	L2	343	3.0	0.331	6.9	LOS A	1.6	40.4	0.49	0.40	0.49	31.7
6	T1	214	3.0	0.406	7.8	LOS A	2.1	53.3	0.53	0.43	0.53	33.6
16	R2	208	3.0	0.406	7.8	LOS A	2.1	53.3	0.53	0.43	0.53	32.6
Approach		765	3.0	0.406	7.4	LOS A	2.1	53.3	0.51	0.42	0.51	32.5
North: Main St												
7	L2	92	3.0	0.400	9.4	LOS A	2.0	50.6	0.63	0.68	0.77	32.3
4	T1	230	3.0	0.400	9.4	LOS A	2.0	50.6	0.63	0.68	0.77	32.2
14	R2	310	3.0	0.191	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		632	3.0	0.400	4.8	LOS A	2.0	50.6	0.32	0.35	0.39	34.5
West: Main St												
5	L2	194	3.0	0.437	10.4	LOS B	2.3	59.5	0.66	0.74	0.89	31.1
2	T1	102	3.0	0.437	10.4	LOS B	2.3	59.5	0.66	0.74	0.89	31.1
12	R2	41	3.0	0.437	10.4	LOS B	2.3	59.5	0.66	0.74	0.89	30.3
Approach		336	3.0	0.437	10.4	LOS B	2.3	59.5	0.66	0.74	0.89	31.0
All Vehicles		1933	3.0	0.437	7.0	LOS A	2.3	59.5	0.48	0.45	0.54	32.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	181	5	0	0	0	0	62	62	115	200	0
Future Vol, veh/h	28	181	5	0	0	0	0	62	62	115	200	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	201	6	0	0	0	0	69	69	128	222	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	10	9.7	10.5
HCM LOS	A	A	B

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	24%	0%	100%	0%
Vol Thru, %	50%	76%	95%	0%	100%
Vol Right, %	50%	0%	5%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	124	119	96	115	200
LT Vol	0	28	0	115	0
Through Vol	62	91	91	0	200
RT Vol	62	0	5	0	0
Lane Flow Rate	138	132	106	128	222
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.203	0.215	0.168	0.207	0.329
Departure Headway (Hd)	5.304	5.866	5.71	5.839	5.335
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	672	608	624	612	671
Service Time	3.376	3.638	3.482	3.603	3.1
HCM Lane V/C Ratio	0.205	0.217	0.17	0.209	0.331
HCM Control Delay	9.7	10.3	9.6	10.1	10.7
HCM Lane LOS	A	B	A	B	B
HCM 95th-tile Q	0.8	0.8	0.6	0.8	1.4

Intersection	
Intersection Delay, s/veh	10.3
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	111	35	21	295	82	122
Future Vol, veh/h	111	35	21	295	82	122
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	134	42	25	355	99	147
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	10.2	10.6	9.8
HCM LOS	B	B	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	18%	0%
Vol Thru, %	0%	0%	76%	82%	100%
Vol Right, %	0%	100%	24%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	82	122	146	119	197
LT Vol	82	0	0	21	0
Through Vol	0	0	111	98	197
RT Vol	0	122	35	0	0
Lane Flow Rate	99	147	176	144	237
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.175	0.211	0.258	0.218	0.354
Departure Headway (Hd)	6.384	5.173	5.285	5.465	5.377
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	558	688	674	653	663
Service Time	4.165	2.953	3.363	3.236	3.148
HCM Lane V/C Ratio	0.177	0.214	0.261	0.221	0.357
HCM Control Delay	10.5	9.4	10.2	9.8	11.1
HCM Lane LOS	B	A	B	A	B
HCM 95th-tile Q	0.6	0.8	1	0.8	1.6

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	216	8	2	266	27	12
Future Vol, veh/h	216	8	2	266	27	12
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	253	9	2	311	32	14
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	8.8	9.1	8.5
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	69%	0%	0%	2%	0%
Vol Thru, %	0%	100%	90%	98%	100%
Vol Right, %	31%	0%	10%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	39	144	80	91	177
LT Vol	27	0	0	2	0
Through Vol	0	144	72	89	177
RT Vol	12	0	8	0	0
Lane Flow Rate	46	169	94	106	208
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.065	0.23	0.126	0.144	0.281
Departure Headway (Hd)	5.14	4.913	4.843	4.88	4.869
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	697	733	743	737	741
Service Time	3.168	2.63	2.559	2.595	2.584
HCM Lane V/C Ratio	0.066	0.231	0.127	0.144	0.281
HCM Control Delay	8.5	9.1	8.3	8.4	9.5
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.2	0.9	0.4	0.5	1.2

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	139	22	0	36	104	206	26	63	276	1
Future Vol, veh/h	0	0	139	22	0	36	104	206	26	63	276	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	550	-	-	120	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	154	24	0	40	116	229	29	70	307	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	937	307	1001	924	244	308	0	0	258	0	0
Stage 1	-	447	-	476	476	-	-	-	-	-	-	-
Stage 2	-	490	-	525	448	-	-	-	-	-	-	-
Critical Hdwy	-	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	-	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	265	733	222	269	795	1253	-	-	1307	-	-
Stage 1	0	573	-	570	557	-	-	-	-	-	-	-
Stage 2	0	549	-	536	573	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	227	733	156	231	795	1253	-	-	1307	-	-
Mov Cap-2 Maneuver	-	227	-	156	231	-	-	-	-	-	-	-
Stage 1	-	542	-	517	505	-	-	-	-	-	-	-
Stage 2	-	498	-	400	542	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.2	18.3	2.5	1.5
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1253	-	-	733	156	795	1307	-	-
HCM Lane V/C Ratio	0.092	-	-	0.211	0.157	0.05	0.054	-	-
HCM Control Delay (s)	8.2	-	-	11.2	32.3	9.8	7.9	-	-
HCM Lane LOS	A	-	-	B	D	A	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.8	0.5	0.2	0.2	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	41	16	313	432	13
Future Vol, veh/h	19	41	16	313	432	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	48	19	364	502	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	912	259	517	0	-	0
Stage 1	510	-	-	-	-	-
Stage 2	402	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	288	741	1047	-	-	-
Stage 1	569	-	-	-	-	-
Stage 2	675	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	283	741	1047	-	-	-
Mov Cap-2 Maneuver	472	-	-	-	-	-
Stage 1	559	-	-	-	-	-
Stage 2	675	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.1	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1047	-	472	741	-	-
HCM Lane V/C Ratio	0.018	-	0.047	0.064	-	-
HCM Control Delay (s)	8.5	-	13	10.2	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.2	-	-

Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	26	10	11	17	43	11	220	12	89	328	17
Future Vol, veh/h	22	26	10	11	17	43	11	220	12	89	328	17
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	30	11	13	20	49	13	253	14	102	377	20
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	9.7	9.4	11.7	13.7
HCM LOS	A	A	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	38%	15%	100%	0%
Vol Thru, %	0%	95%	45%	24%	0%	95%
Vol Right, %	0%	5%	17%	61%	0%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	11	232	58	71	89	345
LT Vol	11	0	22	11	89	0
Through Vol	0	220	26	17	0	328
RT Vol	0	12	10	43	0	17
Lane Flow Rate	13	267	67	82	102	397
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.021	0.4	0.11	0.127	0.162	0.57
Departure Headway (Hd)	6.041	5.4	5.952	5.616	5.71	5.172
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	596	659	605	642	622	690
Service Time	3.741	3.199	3.955	3.619	3.498	2.959
HCM Lane V/C Ratio	0.022	0.405	0.111	0.128	0.164	0.575
HCM Control Delay	8.9	11.8	9.7	9.4	9.6	14.7
HCM Lane LOS	A	B	A	A	A	B
HCM 95th-tile Q	0.1	1.9	0.4	0.4	0.6	3.6

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	134	79	171	239	47
Future Vol, veh/h	27	134	79	171	239	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	151	89	192	269	53

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	89	0	-	0	300	89
Stage 1	-	-	-	-	89	-
Stage 2	-	-	-	-	211	-
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	1506	-	-	0	691	969
Stage 1	-	-	-	0	934	-
Stage 2	-	-	-	0	824	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1506	-	-	-	677	969
Mov Cap-2 Maneuver	-	-	-	-	677	-
Stage 1	-	-	-	-	915	-
Stage 2	-	-	-	-	824	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	13
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1506	-	-	677	969
HCM Lane V/C Ratio	0.02	-	-	0.397	0.054
HCM Control Delay (s)	7.4	-	-	13.8	8.9
HCM Lane LOS	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	1.9	0.2

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	14	14	189	285	64
Future Vol, veh/h	54	14	14	189	285	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	63	16	16	220	331	74

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	620	368	405	0	-	0
Stage 1	368	-	-	-	-	-
Stage 2	252	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	452	677	1154	-	-	-
Stage 1	700	-	-	-	-	-
Stage 2	790	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	446	677	1154	-	-	-
Mov Cap-2 Maneuver	602	-	-	-	-	-
Stage 1	690	-	-	-	-	-
Stage 2	790	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.7	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1154	-	616	-	-
HCM Lane V/C Ratio	0.014	-	0.128	-	-
HCM Control Delay (s)	8.2	-	11.7	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	48	0	0	45	0	10
Future Vol, veh/h	48	0	0	45	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	52	0	0	49	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	52	0	101	52
Stage 1	-	-	-	-	52	-
Stage 2	-	-	-	-	49	-
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	-	-	1554	-	898	1016
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	973	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1554	-	898	1016
Mov Cap-2 Maneuver	-	-	-	-	898	-
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	973	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1016	-	-	1554	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	56	0	8	55	0	0	0	12	0	0	0
Future Vol, veh/h	0	56	0	8	55	0	0	0	12	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	72	0	10	71	0	0	0	15	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	71	0	0	72	0	0	163	163	72	171	163	71
Stage 1	-	-	-	-	-	-	72	72	-	91	91	-
Stage 2	-	-	-	-	-	-	91	91	-	80	72	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1529	-	-	1528	-	-	802	729	990	792	729	991
Stage 1	-	-	-	-	-	-	938	835	-	916	820	-
Stage 2	-	-	-	-	-	-	916	820	-	929	835	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1529	-	-	1528	-	-	798	724	990	775	724	991
Mov Cap-2 Maneuver	-	-	-	-	-	-	798	724	-	775	724	-
Stage 1	-	-	-	-	-	-	938	835	-	916	814	-
Stage 2	-	-	-	-	-	-	910	814	-	915	835	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.9	8.7	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	990	1529	-	-	1528	-	-	-
HCM Lane V/C Ratio	0.016	-	-	-	0.007	-	-	-
HCM Control Delay (s)	8.7	0	-	-	7.4	0	-	0
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	122	34	3	122	35	11
Future Vol, veh/h	122	34	3	122	35	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	71	71	71	71	71	71
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	172	48	4	172	49	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	220	0	352	172
Stage 1	-	-	-	-	172	-
Stage 2	-	-	-	-	180	-
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	-	-	1349	-	646	872
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	851	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1349	-	644	872
Mov Cap-2 Maneuver	-	-	-	-	644	-
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	848	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	687	-	-	1349	-
HCM Lane V/C Ratio	0.094	-	-	0.003	-
HCM Control Delay (s)	10.8	-	-	7.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	68	58	52	25	29	66
Future Vol, veh/h	68	58	52	25	29	66
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	103	88	79	38	44	100
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	9	8	8.2
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	54%	0%	100%	0%
Vol Thru, %	46%	68%	0%	0%
Vol Right, %	0%	32%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	126	77	29	66
LT Vol	68	0	29	0
Through Vol	58	52	0	0
RT Vol	0	25	0	66
Lane Flow Rate	191	117	44	100
Geometry Grp	2	2	7	7
Degree of Util (X)	0.24	0.139	0.07	0.126
Departure Headway (Hd)	4.517	4.303	5.734	4.527
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	796	834	626	793
Service Time	2.535	2.323	3.458	2.251
HCM Lane V/C Ratio	0.24	0.14	0.07	0.126
HCM Control Delay	9	8	8.9	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.9	0.5	0.2	0.4

Intersection	
Intersection Delay, s/veh	9.3
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	86	135	47	62	50	64
Future Vol, veh/h	86	135	47	62	50	64
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	115	180	63	83	67	85
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	9.8	9.3	8.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	43%	39%	0%	0%
Vol Thru, %	57%	0%	100%	0%
Vol Right, %	0%	61%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	109	221	50	64
LT Vol	47	86	0	0
Through Vol	62	0	50	0
RT Vol	0	135	0	64
Lane Flow Rate	145	295	67	85
Geometry Grp	5	2	7	7
Degree of Util (X)	0.201	0.357	0.099	0.11
Departure Headway (Hd)	4.978	4.358	5.355	4.649
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	718	825	667	768
Service Time	3.025	2.389	3.103	2.397
HCM Lane V/C Ratio	0.202	0.358	0.1	0.111
HCM Control Delay	9.3	9.8	8.7	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	1.6	0.3	0.4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	46	54	296	25	111	439
v/c Ratio	0.10	0.08	0.38	0.04	0.22	0.30
Control Delay	17.9	3.3	12.9	6.2	16.3	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.9	3.3	12.9	6.2	16.3	3.4
Queue Length 50th (ft)	6	0	33	0	14	0
Queue Length 95th (ft)	38	14	137	13	68	95
Internal Link Dist (ft)	1021		867			623
Turn Bay Length (ft)	165			405	405	
Base Capacity (vph)	869	1141	1493	1273	1085	1804
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.05	0.20	0.02	0.10	0.24

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	42	50	272	23	102	404
Future Volume (veh/h)	42	50	272	23	102	404
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	46	54	296	25	111	439
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	165	303	493	418	176	992
Arrive On Green	0.09	0.09	0.27	0.27	0.10	0.54
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	46	54	296	25	111	439
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	0.7	0.9	4.2	0.4	1.8	4.3
Cycle Q Clear(g_c), s	0.7	0.9	4.2	0.4	1.8	4.3
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	165	303	493	418	176	992
V/C Ratio(X)	0.28	0.18	0.60	0.06	0.63	0.44
Avail Cap(c_a), veh/h	829	894	1864	1580	1170	3037
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	1.00
Uniform Delay (d), s/veh	12.4	9.9	9.4	8.0	12.8	4.1
Incr Delay (d2), s/veh	0.9	0.3	1.2	0.1	3.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.2	1.0	0.1	0.6	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.4	10.2	10.6	8.1	16.5	4.4
LnGrp LOS	B	B	B	A	B	A
Approach Vol, veh/h	100		321			550
Approach Delay, s/veh	11.6		10.4			6.8
Approach LOS	B		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	8.1	13.8			21.9	7.7
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	3.8	6.2			6.3	2.9
Green Ext Time (p_c), s	0.2	1.6			2.7	0.2

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

1: Tinloy St /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)	6.6	11.6	4.7	7.1

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.3	1.2	0.0	0.5
Total Del/Veh (s)	5.2	6.6	10.4	7.0

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.3	0.2
Total Del/Veh (s)	6.3	7.8	0.9	4.0

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.4	2.1	1.1
Total Del/Veh (s)	17.3	6.5	10.7	10.1	9.0

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.5	2.8	0.7
Total Del/Veh (s)	8.9	13.4	13.7	35.8	16.9

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.1	4.6	23.0	8.9

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.5	1.6	0.0	0.4
Total Del/Veh (s)	8.6	14.7	12.7	3.2	9.2

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.5	2.7	1.1
Total Del/Veh (s)	10.0	9.2	5.8	8.3

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.7	0.0	0.1	0.6
Total Del/Veh (s)	6.7	7.4	8.6	7.4

Total Zone Performance

Denied Del/Veh (s)	1.2
Total Del/Veh (s)	191.3

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	103	109	75	70
Average Queue (ft)	58	49	29	27
95th Queue (ft)	99	92	60	56
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	2			
Queuing Penalty (veh)	5			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	114	63	83	91	75
Average Queue (ft)	61	23	39	43	31
95th Queue (ft)	101	52	73	75	62
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	0			0	0
Queuing Penalty (veh)	0			0	0
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	0		
Queuing Penalty (veh)		0	0		

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	84	72	31	58	13
Average Queue (ft)	43	37	7	28	1
95th Queue (ft)	70	58	28	47	6
Link Distance (ft)	1196	1196		262	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	49	58	84	100	5	99	67	91	120	102
Average Queue (ft)	16	23	32	36	0	46	30	23	60	32
95th Queue (ft)	43	48	63	72	3	84	55	62	100	72
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)				0						
Queuing Penalty (veh)				0						
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)						0				
Queuing Penalty (veh)						0				

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	124	165	100	139	133	73	98	123	151	62	72
Average Queue (ft)	35	68	54	34	46	22	48	39	84	16	31
95th Queue (ft)	88	135	96	101	107	54	82	91	135	47	55
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	0	0	1	1	1						
Queuing Penalty (veh)	0	0	0	3	2						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			1	1		0	0				
Queuing Penalty (veh)			2	1		0	0				

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	<	R	T
Maximum Queue (ft)	64	62	35	54	199	129	43
Average Queue (ft)	11	17	4	7	109	55	2
95th Queue (ft)	39	47	19	30	177	96	22
Link Distance (ft)	456	456	334	334	145	145	915
Upstream Blk Time (%)					4	0	
Queuing Penalty (veh)					0	0	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	54	73	89	89	103	76	81	128	82	135	103	72
Average Queue (ft)	17	34	37	50	49	34	39	57	22	65	38	23
95th Queue (ft)	46	64	76	82	82	64	71	103	56	112	76	57
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)							0					
Queuing Penalty (veh)							0					

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	68
Average Queue (ft)	26
95th Queue (ft)	58
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	83	118	55	56	64	48	74	63
Average Queue (ft)	32	44	22	22	23	18	28	28
95th Queue (ft)	66	95	48	47	48	44	60	51
Link Distance (ft)	211	211		1564	1564		800	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	93	57	99	60	62	83	57
Average Queue (ft)	38	21	42	22	14	37	25
95th Queue (ft)	75	44	82	53	44	68	48
Link Distance (ft)	548		211	211	211	1120	1120
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		155					
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 14

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

EPAP plus Project 1830-1930 PM
To Centennial
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	40	3.0	0.094	4.5	LOS A	0.4	10.0	0.43	0.30	0.43	34.2
8	T1	37	3.0	0.094	4.5	LOS A	0.4	10.0	0.43	0.30	0.43	34.2
18	R2	14	3.0	0.094	4.5	LOS A	0.4	10.0	0.43	0.30	0.43	33.2
Approach		92	3.0	0.094	4.5	LOS A	0.4	10.0	0.43	0.30	0.43	34.0
East: Idaho Maryland Rd												
1	L2	179	3.0	0.162	4.7	LOS A	0.7	17.3	0.37	0.25	0.37	32.6
6	T1	168	3.0	0.236	5.4	LOS A	1.1	27.0	0.40	0.28	0.40	34.9
16	R2	93	3.0	0.236	5.4	LOS A	1.1	27.0	0.40	0.28	0.40	33.8
Approach		439	3.0	0.236	5.1	LOS A	1.1	27.0	0.39	0.27	0.39	33.7
North: Main St												
7	L2	54	3.0	0.213	5.7	LOS A	0.8	21.6	0.46	0.39	0.46	34.2
4	T1	156	3.0	0.213	5.7	LOS A	0.8	21.6	0.46	0.39	0.46	34.1
14	R2	210	3.0	0.129	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		419	3.0	0.213	2.9	LOS A	0.8	21.6	0.23	0.19	0.23	35.6
West: Main St												
5	L2	160	3.0	0.273	6.4	LOS A	1.1	29.1	0.48	0.42	0.48	32.9
2	T1	85	3.0	0.273	6.4	LOS A	1.1	29.1	0.48	0.42	0.48	32.8
12	R2	24	3.0	0.273	6.4	LOS A	1.1	29.1	0.48	0.42	0.48	31.9
Approach		268	3.0	0.273	6.4	LOS A	1.1	29.1	0.48	0.42	0.48	32.8
All Vehicles		1218	3.0	0.273	4.6	LOS A	1.1	29.1	0.36	0.28	0.36	34.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	20
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	57	313	8	0	0	0	0	177	249	146	244	0
Future Vol, veh/h	57	313	8	0	0	0	0	177	249	146	244	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	63	344	9	0	0	0	0	195	274	160	268	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	14.9	29.4	14.8
HCM LOS	B	D	B

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	27%	0%	100%	0%
Vol Thru, %	42%	73%	95%	0%	100%
Vol Right, %	58%	0%	5%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	426	214	165	146	244
LT Vol	0	57	0	146	0
Through Vol	177	157	157	0	244
RT Vol	249	0	8	0	0
Lane Flow Rate	468	235	181	160	268
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.799	0.465	0.35	0.318	0.493
Departure Headway (Hd)	6.141	7.135	6.964	7.125	6.615
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	585	502	515	502	542
Service Time	4.202	4.906	4.735	4.899	4.388
HCM Lane V/C Ratio	0.8	0.468	0.351	0.319	0.494
HCM Control Delay	29.4	16	13.5	13.2	15.7
HCM Lane LOS	D	C	B	B	C
HCM 95th-tile Q	7.8	2.4	1.6	1.4	2.7

Intersection	
Intersection Delay, s/veh	27.8
Intersection LOS	D

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	295	48	44	391	268	474
Future Vol, veh/h	295	48	44	391	268	474
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	317	52	47	420	288	510
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	26.1	18.1	34.2
HCM LOS	D	C	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	25%	0%
Vol Thru, %	0%	0%	86%	75%	100%
Vol Right, %	0%	100%	14%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	268	474	343	174	261
LT Vol	268	0	0	44	0
Through Vol	0	0	295	130	261
RT Vol	0	474	48	0	0
Lane Flow Rate	288	510	369	187	280
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.604	0.895	0.718	0.394	0.579
Departure Headway (Hd)	7.546	6.321	7.01	7.561	7.431
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	475	571	513	474	482
Service Time	5.325	4.099	5.082	5.348	5.218
HCM Lane V/C Ratio	0.606	0.893	0.719	0.395	0.581
HCM Control Delay	21.3	41.5	26.1	15.2	20
HCM Lane LOS	C	E	D	C	C
HCM 95th-tile Q	3.9	10.5	5.8	1.9	3.6

Intersection	
Intersection Delay, s/veh	14
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	624	122	22	352	82	30
Future Vol, veh/h	624	122	22	352	82	30
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	657	128	23	371	86	32
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	15.6	11.6	10.9
HCM LOS	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	73%	0%	0%	16%	0%
Vol Thru, %	0%	100%	63%	84%	100%
Vol Right, %	27%	0%	37%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	112	416	330	139	235
LT Vol	82	0	0	22	0
Through Vol	0	416	208	117	235
RT Vol	30	0	122	0	0
Lane Flow Rate	118	438	347	147	247
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.204	0.657	0.496	0.24	0.398
Departure Headway (Hd)	6.235	5.404	5.143	5.88	5.8
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	577	674	705	612	622
Service Time	4.262	3.104	2.843	3.606	3.526
HCM Lane V/C Ratio	0.205	0.65	0.492	0.24	0.397
HCM Control Delay	10.9	17.8	12.8	10.5	12.3
HCM Lane LOS	B	C	B	B	B
HCM 95th-tile Q	0.8	4.9	2.8	0.9	1.9

Intersection	
Int Delay, s/veh	25.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	218	64	0	107	250	481	19	38	358	8
Future Vol, veh/h	0	0	218	64	0	107	250	481	19	38	358	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	550	-	-	120	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	232	68	0	114	266	512	20	40	381	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	1525	381	1636	1524	522	390	0	0	532	0	0
Stage 1	-	461	-	1054	1054	-	-	-	-	-	-	-
Stage 2	-	1064	-	582	470	-	-	-	-	-	-	-
Critical Hdwy	-	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	-	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	118	666	81	118	555	1169	-	-	1036	-	-
Stage 1	0	565	-	273	303	-	-	-	-	-	-	-
Stage 2	0	300	-	499	560	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	88	666	~ 42	88	555	1169	-	-	1036	-	-
Mov Cap-2 Maneuver	-	88	-	~ 42	88	-	-	-	-	-	-	-
Stage 1	-	543	-	211	234	-	-	-	-	-	-	-
Stage 2	-	232	-	313	538	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.3	201.7	3	0.8
HCM LOS	B	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1169	-	-	666	42	555	1036	-	-
HCM Lane V/C Ratio	0.228	-	-	0.348	1.621	0.205	0.039	-	-
HCM Control Delay (s)	9	-	-	13.3	$ 516.9	13.2	8.6	-	-
HCM Lane LOS	A	-	-	B	F	B	A	-	-
HCM 95th %tile Q(veh)	0.9	-	-	1.6	6.9	0.8	0.1	-	-

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

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	45	69	732	528	94
Future Vol, veh/h	22	45	69	732	528	94
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	50	77	813	587	104

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1606	346	691	0	-	0
Stage 1	639	-	-	-	-	-
Stage 2	967	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	105	651	902	-	-	-
Stage 1	489	-	-	-	-	-
Stage 2	368	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	96	651	902	-	-	-
Mov Cap-2 Maneuver	284	-	-	-	-	-
Stage 1	447	-	-	-	-	-
Stage 2	368	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.6	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	902	-	284	651	-	-
HCM Lane V/C Ratio	0.085	-	0.086	0.077	-	-
HCM Control Delay (s)	9.4	-	18.9	11	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.3	0.2	-	-

Intersection	
Intersection Delay, s/veh	47.3
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	23	24	28	57	182	28	531	13	61	283	27
Future Vol, veh/h	41	23	24	28	57	182	28	531	13	61	283	27
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	44	25	26	30	61	196	30	571	14	66	304	29
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	13	17.4	84.6	19.4
HCM LOS	B	C	F	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	47%	10%	100%	0%
Vol Thru, %	0%	98%	26%	21%	0%	91%
Vol Right, %	0%	2%	27%	68%	0%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	28	544	88	267	61	310
LT Vol	28	0	41	28	61	0
Through Vol	0	531	23	57	0	283
RT Vol	0	13	24	182	0	27
Lane Flow Rate	30	585	95	287	66	333
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.06	1.084	0.202	0.527	0.134	0.627
Departure Headway (Hd)	7.201	6.673	8.001	6.917	7.637	7.06
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	500	550	451	525	472	513
Service Time	4.905	4.377	6.001	4.917	5.337	4.76
HCM Lane V/C Ratio	0.06	1.064	0.211	0.547	0.14	0.649
HCM Control Delay	10.4	88.4	13	17.4	11.5	20.9
HCM Lane LOS	B	F	B	C	B	C
HCM 95th-tile Q	0.2	17.9	0.7	3	0.5	4.3

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	118	160	263	405	160	105
Future Vol, veh/h	118	160	263	405	160	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	126	170	280	431	170	112

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	280	0	-	0	702	280
Stage 1	-	-	-	-	280	-
Stage 2	-	-	-	-	422	-
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	1283	-	-	0	404	759
Stage 1	-	-	-	0	767	-
Stage 2	-	-	-	0	662	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1283	-	-	-	364	759
Mov Cap-2 Maneuver	-	-	-	-	364	-
Stage 1	-	-	-	-	692	-
Stage 2	-	-	-	-	662	-

Approach	EB	WB	SB
HCM Control Delay, s	3.4	0	18.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1283	-	-	364	759
HCM Lane V/C Ratio	0.098	-	-	0.468	0.147
HCM Control Delay (s)	8.1	-	-	23.3	10.6
HCM Lane LOS	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	-	-	2.4	0.5

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	15	22	517	240	95
Future Vol, veh/h	54	15	22	517	240	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	56	16	23	539	250	99

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	885	300	349	0	-	0
Stage 1	300	-	-	-	-	-
Stage 2	585	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	315	740	1210	-	-	-
Stage 1	752	-	-	-	-	-
Stage 2	557	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	309	740	1210	-	-	-
Mov Cap-2 Maneuver	488	-	-	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	557	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.9	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1210	-	527	-	-
HCM Lane V/C Ratio	0.019	-	0.136	-	-
HCM Control Delay (s)	8	-	12.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	78	0	0	112	0	10
Future Vol, veh/h	78	0	0	112	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	85	0	0	122	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	85	0	207	85
Stage 1	-	-	-	-	85	-
Stage 2	-	-	-	-	122	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1512	-	781	974
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	903	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1512	-	781	974
Mov Cap-2 Maneuver	-	-	-	-	781	-
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	903	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	974	-	-	1512	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	8.7	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	256	236	26	244	74	12
Future Vol, veh/h	256	236	26	244	74	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	264	243	27	252	76	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	507	0	570	264
Stage 1	-	-	-	-	264	-
Stage 2	-	-	-	-	306	-
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	-	-	1058	-	483	775
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	747	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1058	-	470	775
Mov Cap-2 Maneuver	-	-	-	-	470	-
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	728	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	13.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	497	-	-	1058	-
HCM Lane V/C Ratio	0.178	-	-	0.025	-
HCM Control Delay (s)	13.8	-	-	8.5	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	109	144	132	93	46	123
Future Vol, veh/h	109	144	132	93	46	123
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	128	169	155	109	54	145
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	11.1	9.9	9.4
HCM LOS	B	A	A

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	43%	0%	100%	0%
Vol Thru, %	57%	59%	0%	0%
Vol Right, %	0%	41%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	253	225	46	123
LT Vol	109	0	46	0
Through Vol	144	132	0	0
RT Vol	0	93	0	123
Lane Flow Rate	298	265	54	145
Geometry Grp	2	2	7	7
Degree of Util (X)	0.4	0.335	0.095	0.205
Departure Headway (Hd)	4.835	4.56	6.315	5.102
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	741	784	564	697
Service Time	2.889	2.614	4.091	2.877
HCM Lane V/C Ratio	0.402	0.338	0.096	0.208
HCM Control Delay	11.1	9.9	9.8	9.2
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.9	1.5	0.3	0.8

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	97	85	167	90	88	79
Future Vol, veh/h	97	85	167	90	88	79
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	108	94	186	100	98	88
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	9.7	11	8.5
HCM LOS	A	B	A

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	65%	53%	0%	0%
Vol Thru, %	35%	0%	100%	0%
Vol Right, %	0%	47%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	257	182	88	79
LT Vol	167	97	0	0
Through Vol	90	0	88	0
RT Vol	0	85	0	79
Lane Flow Rate	286	202	98	88
Geometry Grp	5	2	7	7
Degree of Util (X)	0.387	0.273	0.144	0.112
Departure Headway (Hd)	4.883	4.86	5.306	4.6
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	734	736	673	775
Service Time	2.934	2.909	3.061	2.355
HCM Lane V/C Ratio	0.39	0.274	0.146	0.114
HCM Control Delay	11	9.7	9	7.9
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.8	1.1	0.5	0.4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	59	198	673	147	299	345
v/c Ratio	0.28	0.32	0.80	0.19	0.71	0.23
Control Delay	32.7	8.2	28.1	3.7	34.0	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.7	8.2	28.1	3.7	34.0	3.1
Queue Length 50th (ft)	24	25	262	0	120	37
Queue Length 95th (ft)	59	62	#518	33	212	74
Internal Link Dist (ft)	1089		974			683
Turn Bay Length (ft)	165			405	405	
Base Capacity (vph)	394	730	888	830	556	1531
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.27	0.76	0.18	0.54	0.23

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	54	182	619	135	275	317
Future Volume (veh/h)	54	182	619	135	275	317
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	59	198	673	147	299	345
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	233	522	755	640	355	1274
Arrive On Green	0.13	0.13	0.41	0.41	0.20	0.70
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	59	198	673	147	299	345
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	1.9	6.2	21.7	3.9	10.5	4.5
Cycle Q Clear(g_c), s	1.9	6.2	21.7	3.9	10.5	4.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	233	522	755	640	355	1274
V/C Ratio(X)	0.25	0.38	0.89	0.23	0.84	0.27
Avail Cap(c_a), veh/h	386	659	869	736	545	1415
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	1.00
Uniform Delay (d), s/veh	24.7	16.0	17.3	12.1	24.3	3.6
Incr Delay (d2), s/veh	0.6	0.5	10.4	0.2	7.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.1	9.4	1.1	4.5	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.2	16.4	27.7	12.2	31.5	3.7
LnGrp LOS	C	B	C	B	C	A
Approach Vol, veh/h	257		820			644
Approach Delay, s/veh	18.4		25.0			16.6
Approach LOS	B		C			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	18.0	32.0			50.1	13.4
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	12.5	23.7			6.5	8.2
Green Ext Time (p_c), s	0.5	2.5			2.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	20.9
HCM 6th LOS	C

1: Tinloy St /Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.3	0.0	0.1
Total Del/Veh (s)	9.4	24.7	6.1	13.3

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	1.2	0.0	0.6
Total Del/Veh (s)	5.6	9.0	16.3	10.2

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.3	0.2
Total Del/Veh (s)	8.4	9.4	1.1	6.2

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.6	1.9	1.0
Total Del/Veh (s)	14.3	8.2	12.0	12.2	10.5

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.4	2.7	0.8
Total Del/Veh (s)	10.0	12.4	13.9	34.0	17.5

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.8	7.3	24.6	12.7

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.5	1.5	0.0	0.3
Total Del/Veh (s)	11.0	18.9	17.2	5.1	12.6

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.1	0.2	1.7	0.9
Total Del/Veh (s)	19.3	18.6	11.7	15.5

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.5	0.0	0.2	0.4
Total Del/Veh (s)	14.4	7.1	13.4	10.0

Total Zone Performance

Denied Del/Veh (s)	1.1
Total Del/Veh (s)	328.2

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	112	261	112	76
Average Queue (ft)	72	120	50	31
95th Queue (ft)	114	214	94	64
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	5			
Queuing Penalty (veh)	16			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	112	123	181	120	106
Average Queue (ft)	57	43	83	69	51
95th Queue (ft)	97	91	146	111	93
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	0			3	1
Queuing Penalty (veh)	0			4	1
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	3		
Queuing Penalty (veh)		0	8		

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	117	104	33	87	34
Average Queue (ft)	62	53	10	45	2
95th Queue (ft)	98	81	33	72	13
Link Distance (ft)	1196	1196		262	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	T	R	L	L	T
Maximum Queue (ft)	53	101	104	137	136	107	99	135	118
Average Queue (ft)	20	45	49	51	58	40	29	69	51
95th Queue (ft)	47	81	83	103	103	77	69	114	97
Link Distance (ft)	777	160	160	160	1486				1622
Upstream Blk Time (%)				0					
Queuing Penalty (veh)				0					
Storage Bay Dist (ft)						115	360	360	
Storage Blk Time (%)					1	0			
Queuing Penalty (veh)					1	0			

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	150	168	102	172	173	64	102	170	194	87	90
Average Queue (ft)	51	80	57	52	72	19	47	74	112	30	42
95th Queue (ft)	116	150	98	127	151	51	81	146	172	69	71
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	0	0	1	2	3						
Queuing Penalty (veh)	0	1	0	6	9						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			1	2			0	0	0		
Queuing Penalty (veh)			2	2			0	0	0		

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	<	R	T
Maximum Queue (ft)	114	111	94	138	219	220	299
Average Queue (ft)	36	35	22	30	155	131	50
95th Queue (ft)	89	84	69	95	226	223	214
Link Distance (ft)	456	456	334	334	145	145	915
Upstream Blk Time (%)					16	10	
Queuing Penalty (veh)					0	0	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	85	98	130	144	118	114	156	227	74	120	89	75
Average Queue (ft)	34	54	65	80	59	49	72	111	17	57	36	33
95th Queue (ft)	68	86	113	123	96	88	123	186	48	97	75	62
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)						0	1					
Queuing Penalty (veh)						1	1					

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	80
Average Queue (ft)	34
95th Queue (ft)	68
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	129	193	81	120	137	166	276	172
Average Queue (ft)	56	96	26	52	61	37	126	33
95th Queue (ft)	106	170	61	96	113	104	223	89
Link Distance (ft)	211	211		1564	1564		800	
Upstream Blk Time (%)		0						
Queuing Penalty (veh)		0						
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)				0			1	0
Queuing Penalty (veh)				0			3	0

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	203	109	166	154	142	135	85
Average Queue (ft)	84	28	66	61	56	57	40
95th Queue (ft)	158	70	123	123	114	105	71
Link Distance (ft)	548		211	211	211	1120	1120
Upstream Blk Time (%)			0	0	0		
Queuing Penalty (veh)			0	0	0		
Storage Bay Dist (ft)		155					
Storage Blk Time (%)	1	0					
Queuing Penalty (veh)	1	0					

Zone Summary

Zone wide Queuing Penalty: 57

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

EPAP plus Project AM Peak
To SR 49
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	36	3.0	0.251	7.8	LOS A	1.1	27.7	0.62	0.61	0.62	33.3
8	T1	67	3.0	0.251	7.8	LOS A	1.1	27.7	0.62	0.61	0.62	33.2
18	R2	83	3.0	0.251	7.8	LOS A	1.1	27.7	0.62	0.61	0.62	32.3
Approach		186	3.0	0.251	7.8	LOS A	1.1	27.7	0.62	0.61	0.62	32.8
East: Idaho Maryland Rd												
1	L2	257	3.0	0.265	6.4	LOS A	1.2	29.7	0.50	0.43	0.50	31.9
6	T1	141	3.0	0.425	8.6	LOS A	2.2	55.2	0.58	0.52	0.58	33.2
16	R2	270	3.0	0.425	8.6	LOS A	2.2	55.2	0.58	0.52	0.58	32.2
Approach		668	3.0	0.425	7.7	LOS A	2.2	55.2	0.55	0.48	0.55	32.3
North: Main St												
7	L2	129	3.0	0.331	7.3	LOS A	1.4	36.6	0.53	0.49	0.53	32.9
4	T1	183	3.0	0.331	7.3	LOS A	1.4	36.6	0.53	0.49	0.53	32.9
14	R2	207	3.0	0.127	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		519	3.0	0.331	4.4	LOS A	1.4	36.6	0.32	0.29	0.32	34.4
West: Main St												
5	L2	276	3.0	0.541	12.0	LOS B	3.8	98.6	0.69	0.83	1.07	30.5
2	T1	163	3.0	0.541	12.0	LOS B	3.8	98.6	0.69	0.83	1.07	30.4
12	R2	14	3.0	0.541	12.0	LOS B	3.8	98.6	0.69	0.83	1.07	29.6
Approach		453	3.0	0.541	12.0	LOS B	3.8	98.6	0.69	0.83	1.07	30.4
All Vehicles		1826	3.0	0.541	7.8	LOS A	3.8	98.6	0.53	0.53	0.62	32.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	16.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	60	282	3	0	0	0	0	122	156	174	331	0
Future Vol, veh/h	60	282	3	0	0	0	0	122	156	174	331	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	67	313	3	0	0	0	0	136	173	193	368	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	16.1	17.4
HCM LOS	B	C	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	30%	0%	100%	0%
Vol Thru, %	44%	70%	98%	0%	100%
Vol Right, %	56%	0%	2%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	278	201	144	174	331
LT Vol	0	60	0	174	0
Through Vol	122	141	141	0	331
RT Vol	156	0	3	0	0
Lane Flow Rate	309	223	160	193	368
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.531	0.435	0.304	0.363	0.639
Departure Headway (Hd)	6.187	7.004	6.837	6.767	6.259
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	581	514	525	530	577
Service Time	4.241	4.759	4.592	4.524	4.015
HCM Lane V/C Ratio	0.532	0.434	0.305	0.364	0.638
HCM Control Delay	16.1	15.1	12.6	13.4	19.5
HCM Lane LOS	C	C	B	B	C
HCM 95th-tile Q	3.1	2.2	1.3	1.6	4.5

Intersection	
Intersection Delay, s/veh	38.9
Intersection LOS	E

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	220	53	66	776	169	248
Future Vol, veh/h	220	53	66	776	169	248
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	244	59	73	862	188	276
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	18.1	56.8	16.4
HCM LOS	C	F	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	20%	0%
Vol Thru, %	0%	0%	81%	80%	100%
Vol Right, %	0%	100%	19%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	169	248	273	325	517
LT Vol	169	0	0	66	0
Through Vol	0	0	220	259	517
RT Vol	0	248	53	0	0
Lane Flow Rate	188	276	303	361	575
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.411	0.512	0.559	0.671	1.053
Departure Headway (Hd)	8.069	6.841	6.793	6.698	6.595
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	449	529	534	541	552
Service Time	5.769	4.541	4.793	4.433	4.329
HCM Lane V/C Ratio	0.419	0.522	0.567	0.667	1.042
HCM Control Delay	16.3	16.5	18.1	22.1	78.6
HCM Lane LOS	C	C	C	C	F
HCM 95th-tile Q	2	2.9	3.4	5	16.6

Intersection	
Intersection Delay, s/veh	22.3
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	447	72	23	717	93	30
Future Vol, veh/h	447	72	23	717	93	30
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	514	83	26	824	107	34
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	15.2	29	12.1
HCM LOS	C	D	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	76%	0%	0%	9%	0%
Vol Thru, %	0%	100%	67%	91%	100%
Vol Right, %	24%	0%	33%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	123	298	221	262	478
LT Vol	93	0	0	23	0
Through Vol	0	298	149	239	478
RT Vol	30	0	72	0	0
Lane Flow Rate	141	343	254	301	549
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.263	0.58	0.414	0.488	0.884
Departure Headway (Hd)	6.708	6.101	5.87	5.839	5.794
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	536	593	612	617	626
Service Time	4.746	3.842	3.611	3.573	3.528
HCM Lane V/C Ratio	0.263	0.578	0.415	0.488	0.877
HCM Control Delay	12.1	17	12.7	14	37.2
HCM Lane LOS	B	C	B	B	E
HCM 95th-tile Q	1	3.7	2	2.7	10.5

Intersection	
Int Delay, s/veh	14.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	240	25	0	76	299	507	57	94	484	14
Future Vol, veh/h	0	0	240	25	0	76	299	507	57	94	484	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	50	-	0	550	-	-	120	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	247	26	0	78	308	523	59	97	499	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	499	1993	-	553	513	0	0	582	0	0
Stage 1	-	-	-	1169	-	-	-	-	-	-	-	-
Stage 2	-	-	-	824	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.22	7.12	-	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	6.12	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.12	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.318	3.518	-	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	0	572	45	0	533	1052	-	-	992	-	-
Stage 1	0	0	-	235	0	-	-	-	-	-	-	-
Stage 2	0	0	-	367	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	572	~ 18	-	533	1052	-	-	992	-	-
Mov Cap-2 Maneuver	-	-	-	~ 18	-	-	-	-	-	-	-	-
Stage 1	-	-	-	166	-	-	-	-	-	-	-	-
Stage 2	-	-	-	188	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16	176.6	3.4	1.4
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1052	-	-	572	18	533	992	-	-
HCM Lane V/C Ratio	0.293	-	-	0.433	1.432	0.147	0.098	-	-
HCM Control Delay (s)	9.8	-	-	16$	674.1	12.9	9	-	-
HCM Lane LOS	A	-	-	C	F	B	A	-	-
HCM 95th %tile Q(veh)	1.2	-	-	2.2	3.6	0.5	0.3	-	-

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

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	94	58	25	767	702	42
Future Vol, veh/h	94	58	25	767	702	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	99	61	26	807	739	44

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1620	392	783	0	-	0
Stage 1	761	-	-	-	-	-
Stage 2	859	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	103	608	833	-	-	-
Stage 1	423	-	-	-	-	-
Stage 2	414	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	100	608	833	-	-	-
Mov Cap-2 Maneuver	292	-	-	-	-	-
Stage 1	410	-	-	-	-	-
Stage 2	414	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	833	-	292	608	-	-
HCM Lane V/C Ratio	0.032	-	0.339	0.1	-	-
HCM Control Delay (s)	9.5	-	23.5	11.6	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.4	0.3	-	-

Intersection	
Intersection Delay, s/veh	37.5
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	29	27	25	44	85	21	393	36	153	550	33
Future Vol, veh/h	30	29	27	25	44	85	21	393	36	153	550	33
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	29	27	25	44	86	21	397	36	155	556	33
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	12.1	13	27.7	51.5
HCM LOS	B	B	D	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	35%	16%	100%	0%
Vol Thru, %	0%	92%	34%	29%	0%	94%
Vol Right, %	0%	8%	31%	55%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	21	429	86	154	153	583
LT Vol	21	0	30	25	153	0
Through Vol	0	393	29	44	0	550
RT Vol	0	36	27	85	0	33
Lane Flow Rate	21	433	87	156	155	589
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.042	0.781	0.179	0.3	0.287	1.002
Departure Headway (Hd)	7.055	6.485	7.418	6.951	6.675	6.126
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	509	559	483	516	541	595
Service Time	4.774	4.204	5.475	4.999	4.389	3.84
HCM Lane V/C Ratio	0.041	0.775	0.18	0.302	0.287	0.99
HCM Control Delay	10.1	28.6	12.1	13	12.1	61.9
HCM Lane LOS	B	D	B	B	B	F
HCM 95th-tile Q	0.1	7.2	0.6	1.3	1.2	14.9

Intersection	
Int Delay, s/veh	47.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	78	226	239	273	409	116
Future Vol, veh/h	78	226	239	273	409	116
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	85	246	260	297	445	126

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	260	0	-	0	676	260
Stage 1	-	-	-	-	260	-
Stage 2	-	-	-	-	416	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1304	-	-	0	~ 419	779
Stage 1	-	-	-	0	783	-
Stage 2	-	-	-	0	666	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	1304	-	-	-	~ 392	779
Mov Cap-2 Maneuver	-	-	-	-	~ 392	-
Stage 1	-	-	-	-	732	-
Stage 2	-	-	-	-	666	-

Approach	EB	WB	SB
HCM Control Delay, s	2	0	95.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1304	-	-	392	779
HCM Lane V/C Ratio	0.065	-	-	1.134	0.162
HCM Control Delay (s)	8	-	-	119.2	10.5
HCM Lane LOS	A	-	-	F	B
HCM 95th %tile Q(veh)	0.2	-	-	16.6	0.6

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

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	85	22	15	365	537	64
Future Vol, veh/h	85	22	15	365	537	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	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	92	24	16	397	584	70

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1048	619	654	0	-	0
Stage 1	619	-	-	-	-	-
Stage 2	429	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	252	489	933	-	-	-
Stage 1	537	-	-	-	-	-
Stage 2	657	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	248	489	933	-	-	-
Mov Cap-2 Maneuver	443	-	-	-	-	-
Stage 1	528	-	-	-	-	-
Stage 2	657	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.7	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	933	-	452	-	-
HCM Lane V/C Ratio	0.017	-	0.257	-	-
HCM Control Delay (s)	8.9	-	15.7	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	76	0	0	98	0	10
Future Vol, veh/h	76	0	0	98	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	83	0	0	107	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	83	0	190	83
Stage 1	-	-	-	-	83	-
Stage 2	-	-	-	-	107	-
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	-	-	1514	-	799	976
Stage 1	-	-	-	-	940	-
Stage 2	-	-	-	-	917	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1514	-	799	976
Mov Cap-2 Maneuver	-	-	-	-	799	-
Stage 1	-	-	-	-	940	-
Stage 2	-	-	-	-	917	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	976	-	-	1514	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	8.7	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	35.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	329	120	12	425	245	37
Future Vol, veh/h	329	120	12	425	245	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	411	150	15	531	306	46

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	561	0	972	411
Stage 1	-	-	-	-	411	-
Stage 2	-	-	-	-	561	-
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	-	-	1010	-	~ 280	641
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	571	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1010	-	~ 276	641
Mov Cap-2 Maneuver	-	-	-	-	~ 276	-
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	562	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	148.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	298	-	-	1010	-
HCM Lane V/C Ratio	1.183	-	-	0.015	-
HCM Control Delay (s)	148.4	-	-	8.6	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	15.4	-	-	0	-

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

Intersection	
Intersection Delay, s/veh	15.4
Intersection LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	212	131	234	75	112	208
Future Vol, veh/h	212	131	234	75	112	208
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	249	154	275	88	132	245
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	18.3	15.3	12.4
HCM LOS	C	C	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	62%	0%	100%	0%
Vol Thru, %	38%	76%	0%	0%
Vol Right, %	0%	24%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	343	309	112	208
LT Vol	212	0	112	0
Through Vol	131	234	0	0
RT Vol	0	75	0	208
Lane Flow Rate	404	364	132	245
Geometry Grp	2	2	7	7
Degree of Util (X)	0.638	0.556	0.26	0.399
Departure Headway (Hd)	5.695	5.508	7.091	5.869
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	634	654	506	612
Service Time	3.745	3.56	4.845	3.622
HCM Lane V/C Ratio	0.637	0.557	0.261	0.4
HCM Control Delay	18.3	15.3	12.3	12.5
HCM Lane LOS	C	C	B	B
HCM 95th-tile Q	4.6	3.4	1	1.9

Intersection	
Intersection Delay, s/veh	15.9
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	144	189	130	172	179	179
Future Vol, veh/h	144	189	130	172	179	179
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	173	228	157	207	216	216
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	18.2	17.8	12.1
HCM LOS	C	C	B

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	43%	43%	0%	0%
Vol Thru, %	57%	0%	100%	0%
Vol Right, %	0%	57%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	302	333	179	179
LT Vol	130	144	0	0
Through Vol	172	0	179	0
RT Vol	0	189	0	179
Lane Flow Rate	364	401	216	216
Geometry Grp	5	2	7	7
Degree of Util (X)	0.603	0.634	0.379	0.336
Departure Headway (Hd)	5.971	5.689	6.329	5.615
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	604	634	567	636
Service Time	4.032	3.748	4.095	3.382
HCM Lane V/C Ratio	0.603	0.632	0.381	0.34
HCM Control Delay	17.8	18.2	12.9	11.2
HCM Lane LOS	C	C	B	B
HCM 95th-tile Q	4	4.5	1.8	1.5

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	159	358	503	49	132	641
v/c Ratio	0.48	0.49	0.72	0.08	0.41	0.50
Control Delay	30.0	8.5	23.5	5.1	28.6	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.0	8.5	23.5	5.1	28.6	7.4
Queue Length 50th (ft)	52	36	150	0	43	109
Queue Length 95th (ft)	126	107	303	19	103	202
Internal Link Dist (ft)	946		917			653
Turn Bay Length (ft)	165			405	405	
Base Capacity (vph)	474	1001	1062	923	670	1607
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.36	0.47	0.05	0.20	0.40

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	146	329	463	45	121	590
Future Volume (veh/h)	146	329	463	45	121	590
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	159	358	503	49	132	641
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	427	534	626	530	174	992
Arrive On Green	0.25	0.25	0.34	0.34	0.10	0.54
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	159	358	503	49	132	641
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	3.8	10.0	12.7	1.1	3.7	12.5
Cycle Q Clear(g_c), s	3.8	10.0	12.7	1.1	3.7	12.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	427	534	626	530	174	992
V/C Ratio(X)	0.37	0.67	0.80	0.09	0.76	0.65
Avail Cap(c_a), veh/h	484	585	1089	923	683	1774
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	1.00
Uniform Delay (d), s/veh	15.9	14.1	15.1	11.3	22.2	8.1
Incr Delay (d2), s/veh	0.5	2.6	2.5	0.1	6.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.3	4.4	0.3	1.6	3.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.4	16.8	17.6	11.4	28.9	8.8
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	517		552			773
Approach Delay, s/veh	16.6		17.0			12.3
Approach LOS	B		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	10.2	23.2			33.3	17.3
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	5.7	14.7			14.5	12.0
Green Ext Time (p_c), s	0.3	2.7			4.3	0.4

Intersection Summary	
HCM 6th Ctrl Delay	14.9
HCM 6th LOS	B

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

EPAP plus Project PM Peak
To SR 49
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	75	3.0	0.245	6.6	LOS A	1.1	28.6	0.54	0.47	0.54	33.4
8	T1	71	3.0	0.245	6.6	LOS A	1.1	28.6	0.54	0.47	0.54	33.4
18	R2	73	3.0	0.245	6.6	LOS A	1.1	28.6	0.54	0.47	0.54	32.4
Approach		218	3.0	0.245	6.6	LOS A	1.1	28.6	0.54	0.47	0.54	33.1
East: Idaho Maryland Rd												
1	L2	372	3.0	0.375	7.7	LOS A	1.8	46.7	0.54	0.46	0.54	31.3
6	T1	258	3.0	0.493	9.5	LOS A	3.3	83.3	0.61	0.58	0.72	32.8
16	R2	234	3.0	0.493	9.5	LOS A	3.3	83.3	0.61	0.58	0.72	31.8
Approach		863	3.0	0.493	8.7	LOS A	3.3	83.3	0.58	0.53	0.64	31.9
North: Main St												
7	L2	77	3.0	0.389	9.8	LOS A	1.8	47.2	0.65	0.70	0.80	32.2
4	T1	213	3.0	0.389	9.8	LOS A	1.8	47.2	0.65	0.70	0.80	32.1
14	R2	329	3.0	0.203	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		619	3.0	0.389	4.6	LOS A	1.8	47.2	0.30	0.33	0.38	34.6
West: Main St												
5	L2	207	3.0	0.452	10.7	LOS B	2.5	63.9	0.66	0.75	0.92	31.0
2	T1	107	3.0	0.452	10.7	LOS B	2.5	63.9	0.66	0.75	0.92	30.9
12	R2	35	3.0	0.452	10.7	LOS B	2.5	63.9	0.66	0.75	0.92	30.1
Approach		349	3.0	0.452	10.7	LOS B	2.5	63.9	0.66	0.75	0.92	30.9
All Vehicles		2049	3.0	0.493	7.6	LOS A	3.3	83.3	0.50	0.50	0.60	32.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	9.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	96	6	0	0	0	0	86	100	89	100	0
Future Vol, veh/h	15	96	6	0	0	0	0	86	100	89	100	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	109	7	0	0	0	0	98	114	101	114	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	9	9.8	9.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	24%	0%	100%	0%
Vol Thru, %	46%	76%	89%	0%	100%
Vol Right, %	54%	0%	11%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	186	63	54	89	100
LT Vol	0	15	0	89	0
Through Vol	86	48	48	0	100
RT Vol	100	0	6	0	0
Lane Flow Rate	211	72	61	101	114
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.284	0.113	0.094	0.157	0.16
Departure Headway (Hd)	4.83	5.688	5.49	5.587	5.084
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	744	629	652	642	705
Service Time	2.864	3.432	3.234	3.323	2.82
HCM Lane V/C Ratio	0.284	0.114	0.094	0.157	0.162
HCM Control Delay	9.8	9.2	8.8	9.4	8.8
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	1.2	0.4	0.3	0.6	0.6

Intersection	
Intersection Delay, s/veh	17.2
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	197	19	32	204	125	367
Future Vol, veh/h	197	19	32	204	125	367
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	256	25	42	265	162	477
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	15.9	12.5	20.1
HCM LOS	C	B	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	32%	0%
Vol Thru, %	0%	0%	91%	68%	100%
Vol Right, %	0%	100%	9%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	125	367	216	100	136
LT Vol	125	0	0	32	0
Through Vol	0	0	197	68	136
RT Vol	0	367	19	0	0
Lane Flow Rate	162	477	281	130	177
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.307	0.74	0.502	0.25	0.332
Departure Headway (Hd)	6.807	5.592	6.439	6.933	6.769
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	528	643	558	517	530
Service Time	4.562	3.346	4.496	4.697	4.534
HCM Lane V/C Ratio	0.307	0.742	0.504	0.251	0.334
HCM Control Delay	12.6	22.7	15.9	12	12.9
HCM Lane LOS	B	C	C	B	B
HCM 95th-tile Q	1.3	6.5	2.8	1	1.4

Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	475	68	20	175	44	7
Future Vol, veh/h	475	68	20	175	44	7
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	609	87	26	224	56	9
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	12.4	9.5	9.6
HCM LOS	B	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	86%	0%	0%	26%	0%
Vol Thru, %	0%	100%	70%	74%	100%
Vol Right, %	14%	0%	30%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	51	317	226	78	117
LT Vol	44	0	0	20	0
Through Vol	0	317	158	58	117
RT Vol	7	0	68	0	0
Lane Flow Rate	65	406	290	100	150
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.106	0.559	0.382	0.153	0.223
Departure Headway (Hd)	5.857	4.955	4.744	5.498	5.37
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	609	727	757	651	667
Service Time	3.914	2.689	2.478	3.246	3.118
HCM Lane V/C Ratio	0.107	0.558	0.383	0.154	0.225
HCM Control Delay	9.6	13.8	10.4	9.2	9.7
HCM Lane LOS	A	B	B	A	A
HCM 95th-tile Q	0.4	3.5	1.8	0.5	0.8

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	162	46	0	55	132	239	10	11	238	3
Future Vol, veh/h	0	0	162	46	0	55	132	239	10	11	238	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	550	-	-	120	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	195	55	0	66	159	288	12	13	287	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	931	287	1025	929	294	291	0	0	300	0	0
Stage 1	-	313	-	612	612	-	-	-	-	-	-	-
Stage 2	-	618	-	413	317	-	-	-	-	-	-	-
Critical Hdwy	-	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	-	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	267	752	213	268	745	1271	-	-	1261	-	-
Stage 1	0	657	-	480	484	-	-	-	-	-	-	-
Stage 2	0	481	-	616	654	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	231	752	141	232	745	1271	-	-	1261	-	-
Mov Cap-2 Maneuver	-	231	-	141	232	-	-	-	-	-	-	-
Stage 1	-	650	-	420	424	-	-	-	-	-	-	-
Stage 2	-	421	-	451	647	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.5	26.7	2.9	0.3
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1271	-	-	752	141	745	1261	-	-
HCM Lane V/C Ratio	0.125	-	-	0.26	0.393	0.089	0.011	-	-
HCM Control Delay (s)	8.2	-	-	11.5	46.2	10.3	7.9	-	-
HCM Lane LOS	A	-	-	B	E	B	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	1	1.7	0.3	0	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	28	36	368	382	49
Future Vol, veh/h	13	28	36	368	382	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	37	47	484	503	64

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1113	284	567	0	-	0
Stage 1	535	-	-	-	-	-
Stage 2	578	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	216	714	1003	-	-	-
Stage 1	552	-	-	-	-	-
Stage 2	560	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	206	714	1003	-	-	-
Mov Cap-2 Maneuver	408	-	-	-	-	-
Stage 1	526	-	-	-	-	-
Stage 2	560	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.5	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1003	-	408	714	-	-
HCM Lane V/C Ratio	0.047	-	0.042	0.052	-	-
HCM Control Delay (s)	8.8	-	14.2	10.3	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.2	-	-

Intersection	
Intersection Delay, s/veh	12.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	10	20	29	26	83	24	342	6	30	184	11
Future Vol, veh/h	20	10	20	29	26	83	24	342	6	30	184	11
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	11	22	32	29	92	27	380	7	33	204	12
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	9.4	10.1	15.2	10.8
HCM LOS	A	B	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	40%	21%	100%	0%
Vol Thru, %	0%	98%	20%	19%	0%	94%
Vol Right, %	0%	2%	40%	60%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	24	348	50	138	30	195
LT Vol	24	0	20	29	30	0
Through Vol	0	342	10	26	0	184
RT Vol	0	6	20	83	0	11
Lane Flow Rate	27	387	56	153	33	217
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.044	0.586	0.09	0.232	0.057	0.336
Departure Headway (Hd)	5.969	5.452	5.807	5.439	6.124	5.578
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	603	665	616	659	586	646
Service Time	3.669	3.152	3.851	3.477	3.853	3.308
HCM Lane V/C Ratio	0.045	0.582	0.091	0.232	0.056	0.336
HCM Control Delay	8.9	15.6	9.4	10.1	9.2	11.1
HCM Lane LOS	A	C	A	B	A	B
HCM 95th-tile Q	0.1	3.8	0.3	0.9	0.2	1.5

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	52	123	127	245	128	47
Future Vol, veh/h	52	123	127	245	128	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	154	159	306	160	59

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	159	0	-	0	443	159
Stage 1	-	-	-	-	159	-
Stage 2	-	-	-	-	284	-
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	1420	-	-	0	572	886
Stage 1	-	-	-	0	870	-
Stage 2	-	-	-	0	764	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1420	-	-	-	546	886
Mov Cap-2 Maneuver	-	-	-	-	546	-
Stage 1	-	-	-	-	830	-
Stage 2	-	-	-	-	764	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	13
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1420	-	-	546	886
HCM Lane V/C Ratio	0.046	-	-	0.293	0.066
HCM Control Delay (s)	7.7	-	-	14.3	9.4
HCM Lane LOS	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	1.2	0.2

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	15	22	317	138	95
Future Vol, veh/h	54	15	22	317	138	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	61	17	25	360	157	108

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	621	211	265	0	-	0
Stage 1	211	-	-	-	-	-
Stage 2	410	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	451	829	1299	-	-	-
Stage 1	824	-	-	-	-	-
Stage 2	670	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	442	829	1299	-	-	-
Mov Cap-2 Maneuver	594	-	-	-	-	-
Stage 1	808	-	-	-	-	-
Stage 2	670	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.5	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1299	-	633	-	-
HCM Lane V/C Ratio	0.019	-	0.124	-	-
HCM Control Delay (s)	7.8	-	11.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	40	0	0	61	0	10
Future Vol, veh/h	40	0	0	61	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	0	0	66	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	43	0	109	43
Stage 1	-	-	-	-	43	-
Stage 2	-	-	-	-	66	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1566	-	888	1027
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	957	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1566	-	888	1027
Mov Cap-2 Maneuver	-	-	-	-	888	-
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	957	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1027	-	-	1566	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	8.5	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	186	173	10	154	39	6
Future Vol, veh/h	186	173	10	154	39	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	248	231	13	205	52	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	479	0	479	248
Stage 1	-	-	-	-	248	-
Stage 2	-	-	-	-	231	-
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	-	-	1083	-	545	791
Stage 1	-	-	-	-	793	-
Stage 2	-	-	-	-	807	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1083	-	538	791
Mov Cap-2 Maneuver	-	-	-	-	538	-
Stage 1	-	-	-	-	793	-
Stage 2	-	-	-	-	797	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	562	-	-	1083	-
HCM Lane V/C Ratio	0.107	-	-	0.012	-
HCM Control Delay (s)	12.2	-	-	8.4	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	48	124	89	47	30	59
Future Vol, veh/h	48	124	89	47	30	59
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	56	146	105	55	35	69
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	8.9	8.2	8.2
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	28%	0%	100%	0%
Vol Thru, %	72%	65%	0%	0%
Vol Right, %	0%	35%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	172	136	30	59
LT Vol	48	0	30	0
Through Vol	124	89	0	0
RT Vol	0	47	0	59
Lane Flow Rate	202	160	35	69
Geometry Grp	2	2	7	7
Degree of Util (X)	0.248	0.187	0.057	0.089
Departure Headway (Hd)	4.416	4.207	5.834	4.626
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	815	854	615	775
Service Time	2.432	2.223	3.56	2.351
HCM Lane V/C Ratio	0.248	0.187	0.057	0.089
HCM Control Delay	8.9	8.2	8.9	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1	0.7	0.2	0.3

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	32	49	89	38	43	46
Future Vol, veh/h	32	49	89	38	43	46
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	63	114	49	55	59
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.9	8.7	7.6
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	70%	40%	0%	0%
Vol Thru, %	30%	0%	100%	0%
Vol Right, %	0%	60%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	127	81	43	46
LT Vol	89	32	0	0
Through Vol	38	0	43	0
RT Vol	0	49	0	46
Lane Flow Rate	163	104	55	59
Geometry Grp	5	2	7	7
Degree of Util (X)	0.201	0.124	0.075	0.069
Departure Headway (Hd)	4.543	4.282	4.906	4.203
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	795	841	735	857
Service Time	2.543	2.287	2.606	1.903
HCM Lane V/C Ratio	0.205	0.124	0.075	0.069
HCM Control Delay	8.7	7.9	8	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.4	0.2	0.2

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	30	87	364	130	230	224
v/c Ratio	0.11	0.14	0.57	0.21	0.48	0.14
Control Delay	24.2	3.4	17.3	4.3	19.9	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.2	3.4	17.3	4.3	19.9	2.2
Queue Length 50th (ft)	5	0	48	0	32	0
Queue Length 95th (ft)	35	21	198	31	146	42
Internal Link Dist (ft)	1182		910			653
Turn Bay Length (ft)	165			405	405	
Base Capacity (vph)	639	964	1387	1209	902	1711
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.09	0.26	0.11	0.25	0.13

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	28	80	335	120	212	206
Future Volume (veh/h)	28	80	335	120	212	206
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	30	87	364	130	230	224
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	166	419	538	456	305	1115
Arrive On Green	0.10	0.10	0.29	0.29	0.18	0.61
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	30	87	364	130	230	224
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	0.6	1.6	6.4	2.4	4.6	2.0
Cycle Q Clear(g_c), s	0.6	1.6	6.4	2.4	4.6	2.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	166	419	538	456	305	1115
V/C Ratio(X)	0.18	0.21	0.68	0.28	0.75	0.20
Avail Cap(c_a), veh/h	674	871	1516	1285	951	2470
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	1.00
Uniform Delay (d), s/veh	15.1	10.2	11.3	9.9	14.2	3.1
Incr Delay (d2), s/veh	0.5	0.2	1.5	0.3	3.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.4	1.8	0.5	1.6	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.7	10.5	12.8	10.2	18.0	3.2
LnGrp LOS	B	B	B	B	B	A
Approach Vol, veh/h	117		494			454
Approach Delay, s/veh	11.8		12.1			10.7
Approach LOS	B		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	11.5	16.5			28.0	8.4
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	6.6	8.4			4.0	3.6
Green Ext Time (p_c), s	0.5	2.3			1.2	0.2

Intersection Summary	
HCM 6th Ctrl Delay	11.5
HCM 6th LOS	B

1: Tinloy St /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)	2.8	9.3	4.3	5.0

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	1.5	0.0	0.5
Total Del/Veh (s)	4.4	6.0	8.3	6.2

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.1
Total Del/Veh (s)	5.4	7.5	0.4	3.8

8: Main St & Maltman Dr/Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.2	2.1	1.0
Total Del/Veh (s)	15.4	4.4	8.3	6.7	6.1

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.9	2.9	0.9
Total Del/Veh (s)	4.4	9.1	22.7	37.9	16.8

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.5	4.1	20.1	8.7

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.3	1.3	0.0	0.2
Total Del/Veh (s)	5.6	9.0	11.3	1.2	5.3

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.2	1.6	0.9
Total Del/Veh (s)	11.6	10.4	7.1	9.0

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.8	0.0	0.1	0.5
Total Del/Veh (s)	6.5	5.4	8.3	6.1

Total Zone Performance

Denied Del/Veh (s)	1.1
Total Del/Veh (s)	72.2

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	84	108	72	53
Average Queue (ft)	31	47	23	15
95th Queue (ft)	66	87	56	41
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	86	59	85	92	71
Average Queue (ft)	40	23	35	46	23
95th Queue (ft)	71	52	71	82	55
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	0			0	0
Queuing Penalty (veh)	0			0	0
Storage Bay Dist (ft)		100			
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB
Directions Served	LT	TR	L	T
Maximum Queue (ft)	67	53	31	48
Average Queue (ft)	35	26	6	30
95th Queue (ft)	55	50	27	45
Link Distance (ft)	1196	1196		262
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			100	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Main St & Maltman Dr/Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	34	39	49	79	24	69	44	38	75	62
Average Queue (ft)	6	16	15	25	1	26	14	7	34	15
95th Queue (ft)	26	36	36	56	10	56	39	28	64	41
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	55	71	70	64	116	32	34	116	141	53	57
Average Queue (ft)	11	21	29	10	27	6	8	32	76	13	23
95th Queue (ft)	38	56	63	39	79	25	28	82	127	41	50
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)				0	0						
Queuing Penalty (veh)				0	0						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)				0							
Queuing Penalty (veh)				0							

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	<	R	T
Maximum Queue (ft)	40	31	25	46	197	129	32
Average Queue (ft)	5	5	2	3	92	59	1
95th Queue (ft)	24	19	12	22	160	100	18
Link Distance (ft)	456	456	334	334	145	145	915
Upstream Blk Time (%)					3	0	
Queuing Penalty (veh)					0	0	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	42	70	70	92	50	56	84	114	26	70	39	48
Average Queue (ft)	13	31	18	40	19	18	31	52	3	26	14	14
95th Queue (ft)	38	60	51	78	46	45	65	97	17	52	34	41
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)							0					
Queuing Penalty (veh)							0					

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	34
Average Queue (ft)	6
95th Queue (ft)	26
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	77	110	51	61	65	60	130	46
Average Queue (ft)	28	40	15	26	27	20	60	20
95th Queue (ft)	62	84	41	52	54	50	107	41
Link Distance (ft)	211	211		1564	1564		800	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	82	44	97	94	90	62	57
Average Queue (ft)	32	17	41	29	22	25	27
95th Queue (ft)	69	39	77	70	65	57	50
Link Distance (ft)	548		211	211	211	1120	1120
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		155					
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 1

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

EPAP plus Project 0630-0730 AM
To SR 49
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	16	3.0	0.089	4.7	LOS A	0.4	9.3	0.45	0.34	0.45	34.9
8	T1	22	3.0	0.089	4.7	LOS A	0.4	9.3	0.45	0.34	0.45	34.8
18	R2	45	3.0	0.089	4.7	LOS A	0.4	9.3	0.45	0.34	0.45	33.8
Approach		83	3.0	0.089	4.7	LOS A	0.4	9.3	0.45	0.34	0.45	34.2
East: Idaho Maryland Rd												
1	L2	148	3.0	0.128	4.2	LOS A	0.5	13.4	0.32	0.19	0.32	32.9
6	T1	62	3.0	0.156	4.5	LOS A	0.7	16.8	0.33	0.20	0.33	35.4
16	R2	118	3.0	0.156	4.5	LOS A	0.7	16.8	0.33	0.20	0.33	34.3
Approach		329	3.0	0.156	4.3	LOS A	0.7	16.8	0.32	0.20	0.32	33.8
North: Main St												
7	L2	70	3.0	0.197	5.0	LOS A	0.8	20.6	0.35	0.24	0.35	34.4
4	T1	153	3.0	0.197	5.0	LOS A	0.8	20.6	0.35	0.24	0.35	34.3
14	R2	77	3.0	0.047	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		300	3.0	0.197	3.7	LOS A	0.8	20.6	0.26	0.18	0.26	35.0
West: Main St												
5	L2	148	3.0	0.295	6.6	LOS A	1.3	32.2	0.49	0.42	0.49	33.0
2	T1	122	3.0	0.295	6.6	LOS A	1.3	32.2	0.49	0.42	0.49	33.0
12	R2	23	3.0	0.295	6.6	LOS A	1.3	32.2	0.49	0.42	0.49	32.1
Approach		294	3.0	0.295	6.6	LOS A	1.3	32.2	0.49	0.42	0.49	32.9
All Vehicles		1005	3.0	0.295	4.8	LOS A	1.3	32.2	0.36	0.27	0.36	33.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	15.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	47	329	3	0	0	0	0	96	155	164	304	0
Future Vol, veh/h	47	329	3	0	0	0	0	96	155	164	304	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	52	366	3	0	0	0	0	107	172	182	338	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	14.8	16.2
HCM LOS	B	B	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	22%	0%	100%	0%
Vol Thru, %	38%	78%	98%	0%	100%
Vol Right, %	62%	0%	2%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	251	212	168	164	304
LT Vol	0	47	0	164	0
Through Vol	96	165	165	0	304
RT Vol	155	0	3	0	0
Lane Flow Rate	279	235	186	182	338
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.479	0.445	0.346	0.344	0.591
Departure Headway (Hd)	6.184	6.822	6.697	6.805	6.297
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	583	526	536	528	571
Service Time	4.234	4.574	4.449	4.557	4.049
HCM Lane V/C Ratio	0.479	0.447	0.347	0.345	0.592
HCM Control Delay	14.8	15	13	13.1	17.8
HCM Lane LOS	B	B	B	B	C
HCM 95th-tile Q	2.6	2.3	1.5	1.5	3.8

Intersection	
Intersection Delay, s/veh	23.7
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	288	61	57	644	203	224
Future Vol, veh/h	288	61	57	644	203	224
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	306	65	61	685	216	238
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	22.9	28.7	16
HCM LOS	C	D	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	21%	0%
Vol Thru, %	0%	0%	83%	79%	100%
Vol Right, %	0%	100%	17%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	203	224	349	272	429
LT Vol	203	0	0	57	0
Through Vol	0	0	288	215	429
RT Vol	0	224	61	0	0
Lane Flow Rate	216	238	371	289	457
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.472	0.44	0.683	0.543	0.844
Departure Headway (Hd)	7.875	6.647	6.618	6.76	6.653
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	456	539	546	532	544
Service Time	5.647	4.418	4.683	4.533	4.426
HCM Lane V/C Ratio	0.474	0.442	0.679	0.543	0.84
HCM Control Delay	17.6	14.6	22.9	17.4	35.9
HCM Lane LOS	C	B	C	C	E
HCM 95th-tile Q	2.5	2.2	5.2	3.2	8.8

Intersection	
Intersection Delay, s/veh	17
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	390	88	31	545	107	49
Future Vol, veh/h	390	88	31	545	107	49
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	480	108	38	671	132	60
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	14.6	20.1	13
HCM LOS	B	C	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	69%	0%	0%	15%	0%
Vol Thru, %	0%	100%	60%	85%	100%
Vol Right, %	31%	0%	40%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	156	260	218	213	363
LT Vol	107	0	0	31	0
Through Vol	0	260	130	182	363
RT Vol	49	0	88	0	0
Lane Flow Rate	192	320	268	262	447
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.347	0.545	0.435	0.439	0.741
Departure Headway (Hd)	6.505	6.128	5.841	6.042	5.968
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	553	589	614	594	604
Service Time	4.548	3.876	3.589	3.787	3.713
HCM Lane V/C Ratio	0.347	0.543	0.436	0.441	0.74
HCM Control Delay	13	16	13	13.5	23.9
HCM Lane LOS	B	C	B	B	C
HCM 95th-tile Q	1.5	3.3	2.2	2.2	6.4

Intersection	
Int Delay, s/veh	8.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	200	27	0	49	211	478	50	86	434	13
Future Vol, veh/h	0	0	200	27	0	49	211	478	50	86	434	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	550	-	-	120	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	213	29	0	52	224	509	53	91	462	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	1654	462	1742	1642	536	476	0	0	562	0	0
Stage 1	-	644	-	984	984	-	-	-	-	-	-	-
Stage 2	-	1010	-	758	658	-	-	-	-	-	-	-
Critical Hdwy	-	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	-	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	98	600	68	100	545	1086	-	-	1009	-	-
Stage 1	0	468	-	299	327	-	-	-	-	-	-	-
Stage 2	0	317	-	399	461	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	71	600	34	72	545	1086	-	-	1009	-	-
Mov Cap-2 Maneuver	-	71	-	34	72	-	-	-	-	-	-	-
Stage 1	-	426	-	237	260	-	-	-	-	-	-	-
Stage 2	-	252	-	234	420	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.3	107.3	2.6	1.4
HCM LOS	B	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1086	-	-	600	34	545	1009	-	-
HCM Lane V/C Ratio	0.207	-	-	0.355	0.845	0.096	0.091	-	-
HCM Control Delay (s)	9.2	-	-	14.3	279.6	12.3	8.9	-	-
HCM Lane LOS	A	-	-	B	F	B	A	-	-
HCM 95th %tile Q(veh)	0.8	-	-	1.6	3	0.3	0.3	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	68	71	41	674	618	34
Future Vol, veh/h	68	71	41	674	618	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	70	73	42	695	637	35

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1434	336	672	0	-	0
Stage 1	655	-	-	-	-	-
Stage 2	779	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	136	661	917	-	-	-
Stage 1	480	-	-	-	-	-
Stage 2	451	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	130	661	917	-	-	-
Mov Cap-2 Maneuver	329	-	-	-	-	-
Stage 1	458	-	-	-	-	-
Stage 2	451	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.9	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	917	-	329	661	-	-
HCM Lane V/C Ratio	0.046	-	0.213	0.111	-	-
HCM Control Delay (s)	9.1	-	18.9	11.1	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.8	0.4	-	-

Intersection	
Intersection Delay, s/veh	20.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	33	10	17	25	85	12	358	24	127	440	26
Future Vol, veh/h	33	33	10	17	25	85	12	358	24	127	440	26
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	35	11	18	27	90	13	381	26	135	468	28
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	11.3	11.5	20.6	23.9
HCM LOS	B	B	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	43%	13%	100%	0%
Vol Thru, %	0%	94%	43%	20%	0%	94%
Vol Right, %	0%	6%	13%	67%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	12	382	76	127	127	466
LT Vol	12	0	33	17	127	0
Through Vol	0	358	33	25	0	440
RT Vol	0	24	10	85	0	26
Lane Flow Rate	13	406	81	135	135	496
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.023	0.682	0.156	0.239	0.237	0.796
Departure Headway (Hd)	6.592	6.04	6.924	6.367	6.327	5.78
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	541	597	514	559	566	625
Service Time	4.357	3.805	5.018	4.453	4.084	3.537
HCM Lane V/C Ratio	0.024	0.68	0.158	0.242	0.239	0.794
HCM Control Delay	9.5	20.9	11.3	11.5	11.1	27.4
HCM Lane LOS	A	C	B	B	B	D
HCM 95th-tile Q	0.1	5.3	0.5	0.9	0.9	7.8

Intersection	
Int Delay, s/veh	19.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	81	205	186	276	337	108
Future Vol, veh/h	81	205	186	276	337	108
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	89	225	204	303	370	119

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	204	0	-	0	607	204
Stage 1	-	-	-	-	204	-
Stage 2	-	-	-	-	403	-
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	-	-	0	460	837
Stage 1	-	-	-	0	830	-
Stage 2	-	-	-	0	675	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1368	-	-	-	430	837
Mov Cap-2 Maneuver	-	-	-	-	430	-
Stage 1	-	-	-	-	776	-
Stage 2	-	-	-	-	675	-

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	38.1
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1368	-	-	430	837
HCM Lane V/C Ratio	0.065	-	-	0.861	0.142
HCM Control Delay (s)	7.8	-	-	47.1	10
HCM Lane LOS	A	-	-	E	B
HCM 95th %tile Q(veh)	0.2	-	-	8.6	0.5

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	32	9	1	362	457	10
Future Vol, veh/h	32	9	1	362	457	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	9	1	381	481	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	870	487	492	0	-	0
Stage 1	487	-	-	-	-	-
Stage 2	383	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	322	581	1071	-	-	-
Stage 1	618	-	-	-	-	-
Stage 2	689	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	322	581	1071	-	-	-
Mov Cap-2 Maneuver	512	-	-	-	-	-
Stage 1	617	-	-	-	-	-
Stage 2	689	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1071	-	526	-	-
HCM Lane V/C Ratio	0.001	-	0.082	-	-
HCM Control Delay (s)	8.4	-	12.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	66	0	0	63	0	10
Future Vol, veh/h	66	0	0	63	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	72	0	0	68	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	72	0	140	72
Stage 1	-	-	-	-	72	-
Stage 2	-	-	-	-	68	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1528	-	853	990
Stage 1	-	-	-	-	951	-
Stage 2	-	-	-	-	955	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1528	-	853	990
Mov Cap-2 Maneuver	-	-	-	-	853	-
Stage 1	-	-	-	-	951	-
Stage 2	-	-	-	-	955	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	990	-	-	1528	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	8.7	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	28.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	303	120	12	400	245	37
Future Vol, veh/h	303	120	12	400	245	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	379	150	15	500	306	46

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	529	0	909	379
Stage 1	-	-	-	-	379	-
Stage 2	-	-	-	-	530	-
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	-	-	1038	-	~ 305	668
Stage 1	-	-	-	-	692	-
Stage 2	-	-	-	-	590	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1038	-	~ 301	668
Mov Cap-2 Maneuver	-	-	-	-	~ 301	-
Stage 1	-	-	-	-	692	-
Stage 2	-	-	-	-	582	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	112.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	324	-	-	1038	-
HCM Lane V/C Ratio	1.088	-	-	0.014	-
HCM Control Delay (s)	112.3	-	-	8.5	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	13.4	-	-	0	-

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

Intersection	
Intersection Delay, s/veh	14.3
Intersection LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	212	115	214	70	107	208
Future Vol, veh/h	212	115	214	70	107	208
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	249	135	252	82	126	245
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	16.8	13.9	12
HCM LOS	C	B	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	65%	0%	100%	0%
Vol Thru, %	35%	75%	0%	0%
Vol Right, %	0%	25%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	327	284	107	208
LT Vol	212	0	107	0
Through Vol	115	214	0	0
RT Vol	0	70	0	208
Lane Flow Rate	385	334	126	245
Geometry Grp	2	2	7	7
Degree of Util (X)	0.6	0.504	0.243	0.39
Departure Headway (Hd)	5.615	5.434	6.958	5.738
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	642	662	516	626
Service Time	3.657	3.479	4.703	3.482
HCM Lane V/C Ratio	0.6	0.505	0.244	0.391
HCM Control Delay	16.8	13.9	11.9	12.1
HCM Lane LOS	C	B	B	B
HCM 95th-tile Q	4	2.8	0.9	1.8

Intersection	
Intersection Delay, s/veh	15.7
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	144	186	127	172	179	179
Future Vol, veh/h	144	186	127	172	179	179
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	173	224	153	207	216	216
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	17.9	17.5	12.1
HCM LOS	C	C	B

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	42%	44%	0%	0%
Vol Thru, %	58%	0%	100%	0%
Vol Right, %	0%	56%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	299	330	179	179
LT Vol	127	144	0	0
Through Vol	172	0	179	0
RT Vol	0	186	0	179
Lane Flow Rate	360	398	216	216
Geometry Grp	5	2	7	7
Degree of Util (X)	0.596	0.627	0.378	0.335
Departure Headway (Hd)	5.954	5.68	6.307	5.594
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	605	632	569	641
Service Time	4.014	3.739	4.071	3.358
HCM Lane V/C Ratio	0.595	0.63	0.38	0.337
HCM Control Delay	17.5	17.9	12.9	11.2
HCM Lane LOS	C	C	B	B
HCM 95th-tile Q	3.9	4.4	1.8	1.5

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	192	342	454	82	180	470
v/c Ratio	0.59	0.40	0.75	0.14	0.52	0.42
Control Delay	33.8	5.7	27.2	4.9	29.7	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.8	5.7	27.2	4.9	29.7	6.9
Queue Length 50th (ft)	64	22	144	0	60	76
Queue Length 95th (ft)	#160	81	284	26	135	129
Internal Link Dist (ft)	995		923			643
Turn Bay Length (ft)	165			405	405	
Base Capacity (vph)	419	1038	945	842	591	1588
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.33	0.48	0.10	0.30	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	177	315	418	75	166	432
Future Volume (veh/h)	177	315	418	75	166	432
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	192	342	454	82	180	470
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	404	568	579	491	235	1012
Arrive On Green	0.23	0.23	0.32	0.32	0.13	0.55
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	192	342	454	82	180	470
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	4.8	9.0	11.3	1.9	5.0	7.7
Cycle Q Clear(g_c), s	4.8	9.0	11.3	1.9	5.0	7.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	404	568	579	491	235	1012
V/C Ratio(X)	0.48	0.60	0.78	0.17	0.77	0.46
Avail Cap(c_a), veh/h	490	645	1101	933	691	1794
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	1.00
Uniform Delay (d), s/veh	16.6	12.9	15.5	12.3	20.9	6.7
Incr Delay (d2), s/veh	0.9	1.3	2.4	0.2	5.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	2.8	4.0	0.5	2.0	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.5	14.1	17.9	12.5	26.1	7.0
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	534		536			650
Approach Delay, s/veh	15.3		17.1			12.3
Approach LOS	B		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	11.9	21.7			33.5	16.5
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	7.0	13.3			9.7	11.0
Green Ext Time (p_c), s	0.4	2.6			2.9	0.6

Intersection Summary	
HCM 6th Ctrl Delay	14.7
HCM 6th LOS	B

1: Tinloy St /Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.0	0.1
Total Del/Veh (s)	8.0	15.0	5.2	8.6

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.4	1.0	0.0	0.5
Total Del/Veh (s)	5.6	7.8	12.9	8.6

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.4	0.3
Total Del/Veh (s)	9.9	9.4	1.6	6.4

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.6	2.1	1.1
Total Del/Veh (s)	18.3	9.5	15.9	16.1	13.5

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.5	2.8	0.7
Total Del/Veh (s)	14.4	14.4	19.3	37.4	20.3

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.7	9.5	27.7	14.0

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.5	1.5	0.0	0.4
Total Del/Veh (s)	16.6	32.9	27.8	11.2	22.1

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.5	2.7	0.9
Total Del/Veh (s)	13.4	14.3	13.2	13.7

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	2.9	0.0	0.2	1.3
Total Del/Veh (s)	19.0	11.6	15.6	15.6

Total Zone Performance

Denied Del/Veh (s)	1.4
Total Del/Veh (s)	683.6

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	99	179	86	107
Average Queue (ft)	62	77	42	41
95th Queue (ft)	103	138	76	80
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	3			
Queuing Penalty (veh)	8			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	117	94	137	115	100
Average Queue (ft)	65	30	63	61	51
95th Queue (ft)	104	67	109	103	87
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	0			2	1
Queuing Penalty (veh)	0			2	1
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	1		
Queuing Penalty (veh)		0	2		

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	142	131	47	66	31
Average Queue (ft)	70	56	16	36	3
95th Queue (ft)	115	95	43	56	18
Link Distance (ft)	1196	1196		262	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	47	104	105	163	29	194	139	191	213	144
Average Queue (ft)	14	47	49	80	2	89	66	64	109	61
95th Queue (ft)	41	87	88	149	17	159	126	143	177	116
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)				0						
Queuing Penalty (veh)				1						
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)						3	1			
Queuing Penalty (veh)						6	2			

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	173	188	102	184	173	110	164	208	226	70	91
Average Queue (ft)	98	133	66	70	94	31	72	105	135	24	44
95th Queue (ft)	181	204	104	157	168	75	129	186	199	58	76
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	1	6	2	4	6						
Queuing Penalty (veh)	2	20	0	16	23						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			2	4		0	4	0	0		
Queuing Penalty (veh)			7	5		1	1	0	0		

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	R	<	R	T
Maximum Queue (ft)	154	165	199	272	104	216	234	455
Average Queue (ft)	54	58	58	84	4	142	172	101
95th Queue (ft)	116	123	148	200	60	226	259	327
Link Distance (ft)	456	456	334	334	334	145	145	915
Upstream Blk Time (%)				0	0	13	26	
Queuing Penalty (veh)				0	0	0	0	
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	134	153	187	229	191	183	264	342	221	283	222	138
Average Queue (ft)	60	79	97	110	93	83	117	192	89	162	84	57
95th Queue (ft)	112	128	159	180	161	147	209	296	192	251	161	105
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)			0	0	0	2	6		0	0	0	
Queuing Penalty (veh)			0	0	0	7	8		0	1	0	

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	102
Average Queue (ft)	46
95th Queue (ft)	89
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	199	219	143	147	162	116	145	133
Average Queue (ft)	86	94	61	54	72	42	58	53
95th Queue (ft)	157	185	112	108	133	87	113	99
Link Distance (ft)	211	211		1564	1564		800	
Upstream Blk Time (%)	0	1						
Queuing Penalty (veh)	0	3						
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)			0	0			0	
Queuing Penalty (veh)			1	0			0	

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	473	180	204	120	115	172	73
Average Queue (ft)	176	105	107	40	37	93	33
95th Queue (ft)	374	196	179	92	90	151	57
Link Distance (ft)	548		211	211	211	1120	1120
Upstream Blk Time (%)	1		0				
Queuing Penalty (veh)	0		1				
Storage Bay Dist (ft)		155					
Storage Blk Time (%)	9	1					
Queuing Penalty (veh)	34	5					

Zone Summary

Zone wide Queuing Penalty: 159

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

EPAP plus Project 1530-1630 PM
To SR 49
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	59	3.0	0.224	6.3	LOS A	1.0	25.7	0.53	0.45	0.53	33.7
8	T1	54	3.0	0.224	6.3	LOS A	1.0	25.7	0.53	0.45	0.53	33.6
18	R2	86	3.0	0.224	6.3	LOS A	1.0	25.7	0.53	0.45	0.53	32.7
Approach		200	3.0	0.224	6.3	LOS A	1.0	25.7	0.53	0.45	0.53	33.2
East: Idaho Maryland Rd												
1	L2	343	3.0	0.331	6.9	LOS A	1.6	40.4	0.49	0.40	0.49	31.7
6	T1	214	3.0	0.406	7.8	LOS A	2.1	53.3	0.53	0.43	0.53	33.6
16	R2	208	3.0	0.406	7.8	LOS A	2.1	53.3	0.53	0.43	0.53	32.6
Approach		765	3.0	0.406	7.4	LOS A	2.1	53.3	0.51	0.42	0.51	32.5
North: Main St												
7	L2	92	3.0	0.400	9.4	LOS A	2.0	50.6	0.63	0.68	0.77	32.3
4	T1	230	3.0	0.400	9.4	LOS A	2.0	50.6	0.63	0.68	0.77	32.2
14	R2	310	3.0	0.191	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		632	3.0	0.400	4.8	LOS A	2.0	50.6	0.32	0.35	0.39	34.5
West: Main St												
5	L2	194	3.0	0.437	10.4	LOS B	2.3	59.5	0.66	0.74	0.89	31.1
2	T1	102	3.0	0.437	10.4	LOS B	2.3	59.5	0.66	0.74	0.89	31.1
12	R2	41	3.0	0.437	10.4	LOS B	2.3	59.5	0.66	0.74	0.89	30.3
Approach		336	3.0	0.437	10.4	LOS B	2.3	59.5	0.66	0.74	0.89	31.0
All Vehicles		1933	3.0	0.437	7.0	LOS A	2.3	59.5	0.48	0.45	0.54	32.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	181	5	0	0	0	0	62	62	115	200	0
Future Vol, veh/h	28	181	5	0	0	0	0	62	62	115	200	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	201	6	0	0	0	0	69	69	128	222	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	10	9.7	10.5
HCM LOS	A	A	B

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	24%	0%	100%	0%
Vol Thru, %	50%	76%	95%	0%	100%
Vol Right, %	50%	0%	5%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	124	119	96	115	200
LT Vol	0	28	0	115	0
Through Vol	62	91	91	0	200
RT Vol	62	0	5	0	0
Lane Flow Rate	138	132	106	128	222
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.203	0.215	0.168	0.207	0.329
Departure Headway (Hd)	5.304	5.866	5.71	5.839	5.335
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	672	608	624	612	671
Service Time	3.376	3.638	3.482	3.603	3.1
HCM Lane V/C Ratio	0.205	0.217	0.17	0.209	0.331
HCM Control Delay	9.7	10.3	9.6	10.1	10.7
HCM Lane LOS	A	B	A	B	B
HCM 95th-tile Q	0.8	0.8	0.6	0.8	1.4

Intersection	
Intersection Delay, s/veh	10.3
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	111	35	21	295	82	122
Future Vol, veh/h	111	35	21	295	82	122
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	134	42	25	355	99	147
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	10.2	10.6	9.8
HCM LOS	B	B	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	18%	0%
Vol Thru, %	0%	0%	76%	82%	100%
Vol Right, %	0%	100%	24%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	82	122	146	119	197
LT Vol	82	0	0	21	0
Through Vol	0	0	111	98	197
RT Vol	0	122	35	0	0
Lane Flow Rate	99	147	176	144	237
Geometry Grp	7	7	4	7	7
Degree of Util (X)	0.175	0.211	0.258	0.218	0.354
Departure Headway (Hd)	6.384	5.173	5.285	5.465	5.377
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	558	688	674	653	663
Service Time	4.165	2.953	3.363	3.236	3.148
HCM Lane V/C Ratio	0.177	0.214	0.261	0.221	0.357
HCM Control Delay	10.5	9.4	10.2	9.8	11.1
HCM Lane LOS	B	A	B	A	B
HCM 95th-tile Q	0.6	0.8	1	0.8	1.6

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	216	8	2	266	27	12
Future Vol, veh/h	216	8	2	266	27	12
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	253	9	2	311	32	14
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	8.8	9.1	8.5
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	69%	0%	0%	2%	0%
Vol Thru, %	0%	100%	90%	98%	100%
Vol Right, %	31%	0%	10%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	39	144	80	91	177
LT Vol	27	0	0	2	0
Through Vol	0	144	72	89	177
RT Vol	12	0	8	0	0
Lane Flow Rate	46	169	94	106	208
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.065	0.23	0.126	0.144	0.281
Departure Headway (Hd)	5.14	4.913	4.843	4.88	4.869
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	697	733	743	737	741
Service Time	3.168	2.63	2.559	2.595	2.584
HCM Lane V/C Ratio	0.066	0.231	0.127	0.144	0.281
HCM Control Delay	8.5	9.1	8.3	8.4	9.5
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.2	0.9	0.4	0.5	1.2

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	139	22	0	36	104	214	26	63	284	1
Future Vol, veh/h	0	0	139	22	0	36	104	214	26	63	284	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	550	-	-	120	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	154	24	0	40	116	238	29	70	316	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	955	316	1019	942	253	317	0	0	267	0	0
Stage 1	-	456	-	485	485	-	-	-	-	-	-	-
Stage 2	-	499	-	534	457	-	-	-	-	-	-	-
Critical Hdwy	-	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	-	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	258	724	215	263	786	1243	-	-	1297	-	-
Stage 1	0	568	-	563	552	-	-	-	-	-	-	-
Stage 2	0	544	-	530	568	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	221	724	151	226	786	1243	-	-	1297	-	-
Mov Cap-2 Maneuver	-	221	-	151	226	-	-	-	-	-	-	-
Stage 1	-	537	-	511	501	-	-	-	-	-	-	-
Stage 2	-	493	-	394	537	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.3	18.8	2.5	1.4
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1243	-	-	724	151	786	1297	-	-
HCM Lane V/C Ratio	0.093	-	-	0.213	0.162	0.051	0.054	-	-
HCM Control Delay (s)	8.2	-	-	11.3	33.4	9.8	7.9	-	-
HCM Lane LOS	A	-	-	B	D	A	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.8	0.6	0.2	0.2	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	33	8	321	440	13
Future Vol, veh/h	19	33	8	321	440	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	38	9	373	512	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	911	264	527	0	-	0
Stage 1	520	-	-	-	-	-
Stage 2	391	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	289	735	1038	-	-	-
Stage 1	562	-	-	-	-	-
Stage 2	683	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	286	735	1038	-	-	-
Mov Cap-2 Maneuver	473	-	-	-	-	-
Stage 1	557	-	-	-	-	-
Stage 2	683	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.2	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1038	-	473	735	-	-
HCM Lane V/C Ratio	0.009	-	0.047	0.052	-	-
HCM Control Delay (s)	8.5	-	13	10.2	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.2	-	-

Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	26	10	11	17	43	11	220	12	89	328	17
Future Vol, veh/h	22	26	10	11	17	43	11	220	12	89	328	17
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	30	11	13	20	49	13	253	14	102	377	20
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	9.7	9.4	11.7	13.7
HCM LOS	A	A	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	38%	15%	100%	0%
Vol Thru, %	0%	95%	45%	24%	0%	95%
Vol Right, %	0%	5%	17%	61%	0%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	11	232	58	71	89	345
LT Vol	11	0	22	11	89	0
Through Vol	0	220	26	17	0	328
RT Vol	0	12	10	43	0	17
Lane Flow Rate	13	267	67	82	102	397
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.021	0.4	0.11	0.127	0.162	0.57
Departure Headway (Hd)	6.041	5.4	5.952	5.616	5.71	5.172
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	596	659	605	642	622	690
Service Time	3.741	3.199	3.955	3.619	3.498	2.959
HCM Lane V/C Ratio	0.022	0.405	0.111	0.128	0.164	0.575
HCM Control Delay	8.9	11.8	9.7	9.4	9.6	14.7
HCM Lane LOS	A	B	A	A	A	B
HCM 95th-tile Q	0.1	1.9	0.4	0.4	0.6	3.6

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	134	79	171	239	47
Future Vol, veh/h	27	134	79	171	239	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	151	89	192	269	53

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	89	0	-	0	300	89
Stage 1	-	-	-	-	89	-
Stage 2	-	-	-	-	211	-
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	1506	-	-	0	691	969
Stage 1	-	-	-	0	934	-
Stage 2	-	-	-	0	824	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1506	-	-	-	677	969
Mov Cap-2 Maneuver	-	-	-	-	677	-
Stage 1	-	-	-	-	915	-
Stage 2	-	-	-	-	824	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	13
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1506	-	-	677	969
HCM Lane V/C Ratio	0.02	-	-	0.397	0.054
HCM Control Delay (s)	7.4	-	-	13.8	8.9
HCM Lane LOS	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	1.9	0.2

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	14	14	189	285	64
Future Vol, veh/h	54	14	14	189	285	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	63	16	16	220	331	74

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	620	368	405	0	-	0
Stage 1	368	-	-	-	-	-
Stage 2	252	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	452	677	1154	-	-	-
Stage 1	700	-	-	-	-	-
Stage 2	790	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	446	677	1154	-	-	-
Mov Cap-2 Maneuver	602	-	-	-	-	-
Stage 1	690	-	-	-	-	-
Stage 2	790	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.7	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1154	-	616	-	-
HCM Lane V/C Ratio	0.014	-	0.128	-	-
HCM Control Delay (s)	8.2	-	11.7	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	48	0	0	45	0	10
Future Vol, veh/h	48	0	0	45	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	52	0	0	49	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	52	0	101	52
Stage 1	-	-	-	-	52	-
Stage 2	-	-	-	-	49	-
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	-	-	1554	-	898	1016
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	973	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1554	-	898	1016
Mov Cap-2 Maneuver	-	-	-	-	898	-
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	973	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1016	-	-	1554	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	122	34	3	122	35	11
Future Vol, veh/h	122	34	3	122	35	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	71	71	71	71	71	71
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	172	48	4	172	49	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	220	0	352	172
Stage 1	-	-	-	-	172	-
Stage 2	-	-	-	-	180	-
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	-	-	1349	-	646	872
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	851	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1349	-	644	872
Mov Cap-2 Maneuver	-	-	-	-	644	-
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	848	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	687	-	-	1349	-
HCM Lane V/C Ratio	0.094	-	-	0.003	-
HCM Control Delay (s)	10.8	-	-	7.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	68	58	52	25	29	66
Future Vol, veh/h	68	58	52	25	29	66
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	103	88	79	38	44	100
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	9	8	8.2
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	54%	0%	100%	0%
Vol Thru, %	46%	68%	0%	0%
Vol Right, %	0%	32%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	126	77	29	66
LT Vol	68	0	29	0
Through Vol	58	52	0	0
RT Vol	0	25	0	66
Lane Flow Rate	191	117	44	100
Geometry Grp	2	2	7	7
Degree of Util (X)	0.24	0.139	0.07	0.126
Departure Headway (Hd)	4.517	4.303	5.734	4.527
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	796	834	626	793
Service Time	2.535	2.323	3.458	2.251
HCM Lane V/C Ratio	0.24	0.14	0.07	0.126
HCM Control Delay	9	8	8.9	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.9	0.5	0.2	0.4

Intersection	
Intersection Delay, s/veh	9.3
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	86	135	47	62	50	64
Future Vol, veh/h	86	135	47	62	50	64
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	115	180	63	83	67	85
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	9.8	9.3	8.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	43%	39%	0%	0%
Vol Thru, %	57%	0%	100%	0%
Vol Right, %	0%	61%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	109	221	50	64
LT Vol	47	86	0	0
Through Vol	62	0	50	0
RT Vol	0	135	0	64
Lane Flow Rate	145	295	67	85
Geometry Grp	5	2	7	7
Degree of Util (X)	0.201	0.357	0.099	0.11
Departure Headway (Hd)	4.978	4.358	5.355	4.649
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	718	825	667	768
Service Time	3.025	2.389	3.103	2.397
HCM Lane V/C Ratio	0.202	0.358	0.1	0.111
HCM Control Delay	9.3	9.8	8.7	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	1.6	0.3	0.4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	46	54	296	25	111	439
v/c Ratio	0.10	0.08	0.38	0.04	0.22	0.30
Control Delay	17.9	3.3	12.9	6.2	16.3	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.9	3.3	12.9	6.2	16.3	3.4
Queue Length 50th (ft)	6	0	33	0	14	0
Queue Length 95th (ft)	38	14	137	13	68	95
Internal Link Dist (ft)	1001		901			633
Turn Bay Length (ft)	165			405	405	
Base Capacity (vph)	869	1141	1493	1273	1085	1804
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.05	0.20	0.02	0.10	0.24

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	42	50	272	23	102	404
Future Volume (veh/h)	42	50	272	23	102	404
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	46	54	296	25	111	439
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	165	303	493	418	176	992
Arrive On Green	0.09	0.09	0.27	0.27	0.10	0.54
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	46	54	296	25	111	439
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	0.7	0.9	4.2	0.4	1.8	4.3
Cycle Q Clear(g_c), s	0.7	0.9	4.2	0.4	1.8	4.3
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	165	303	493	418	176	992
V/C Ratio(X)	0.28	0.18	0.60	0.06	0.63	0.44
Avail Cap(c_a), veh/h	829	894	1864	1580	1170	3037
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	1.00
Uniform Delay (d), s/veh	12.4	9.9	9.4	8.0	12.8	4.1
Incr Delay (d2), s/veh	0.9	0.3	1.2	0.1	3.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.2	1.0	0.1	0.6	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.4	10.2	10.6	8.1	16.5	4.4
LnGrp LOS	B	B	B	A	B	A
Approach Vol, veh/h	100		321			550
Approach Delay, s/veh	11.6		10.4			6.8
Approach LOS	B		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	8.1	13.8			21.9	7.7
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	3.8	6.2			6.3	2.9
Green Ext Time (p_c), s	0.2	1.6			2.7	0.2

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

1: Tinloy St /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)	6.3	11.2	4.8	6.8

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.2	1.3	0.0	0.5
Total Del/Veh (s)	5.2	6.5	10.5	7.0

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.3	0.2
Total Del/Veh (s)	6.4	7.9	1.0	4.1

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.4	2.1	1.1
Total Del/Veh (s)	17.7	6.5	10.8	10.0	9.0

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.5	2.9	0.7
Total Del/Veh (s)	8.3	12.6	13.2	35.7	16.4

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.2	4.7	22.0	8.8

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.5	1.6	0.0	0.4
Total Del/Veh (s)	8.7	15.7	13.1	3.7	9.6

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.5	2.7	1.1
Total Del/Veh (s)	9.8	9.7	5.9	8.4

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.7	0.0	0.1	0.6
Total Del/Veh (s)	6.3	7.6	8.3	7.3

Total Zone Performance

Denied Del/Veh (s)	1.2
Total Del/Veh (s)	188.5

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	98	115	77	83
Average Queue (ft)	55	47	30	30
95th Queue (ft)	94	89	61	61
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	1			
Queuing Penalty (veh)	4			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	115	58	91	85	71
Average Queue (ft)	62	22	39	43	32
95th Queue (ft)	100	52	76	75	63
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	0			0	0
Queuing Penalty (veh)	0			0	0
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	0		
Queuing Penalty (veh)		0	0		

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	87	74	31	52	15
Average Queue (ft)	45	36	9	29	1
95th Queue (ft)	71	59	32	45	7
Link Distance (ft)	1196	1196		262	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	42	56	70	96	7	104	78	97	119	85
Average Queue (ft)	15	22	32	34	0	46	30	23	60	30
95th Queue (ft)	40	47	60	74	5	86	59	62	99	65
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)						0	0			
Queuing Penalty (veh)						0	0			

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	132	159	93	114	120	64	100	132	164	54	64
Average Queue (ft)	37	64	48	28	42	20	48	44	88	15	30
95th Queue (ft)	94	128	85	81	100	52	83	103	143	42	54
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	0	0	1	1	1						
Queuing Penalty (veh)	0	0	0	1	1						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			1	1		0	0				
Queuing Penalty (veh)			1	0		0	0				

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	<	R	T
Maximum Queue (ft)	61	73	40	89	192	128	14
Average Queue (ft)	11	19	5	9	105	58	1
95th Queue (ft)	40	54	26	49	172	99	13
Link Distance (ft)	456	456	334	334	145	145	915
Upstream Blk Time (%)					3	0	
Queuing Penalty (veh)					0	0	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	68	73	96	99	105	82	86	123	61	131	104	67
Average Queue (ft)	19	33	39	52	51	36	40	62	20	67	39	27
95th Queue (ft)	49	63	79	87	86	67	74	108	49	111	78	56
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)						0	0					
Queuing Penalty (veh)						0	0					

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	72
Average Queue (ft)	26
95th Queue (ft)	63
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	88	121	58	65	68	61	70	73
Average Queue (ft)	31	45	24	23	25	18	27	28
95th Queue (ft)	65	92	51	50	52	47	59	54
Link Distance (ft)	211	211		1564	1564		800	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	84	47	101	66	66	80	57
Average Queue (ft)	36	21	44	22	15	37	26
95th Queue (ft)	70	41	84	53	46	69	49
Link Distance (ft)	548		211	211	211	1120	1120
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		155					
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 8

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

EPAP plus Project 830-1930 PM
To SR 49
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	40	3.0	0.094	4.5	LOS A	0.4	10.0	0.43	0.30	0.43	34.2
8	T1	37	3.0	0.094	4.5	LOS A	0.4	10.0	0.43	0.30	0.43	34.2
18	R2	14	3.0	0.094	4.5	LOS A	0.4	10.0	0.43	0.30	0.43	33.2
Approach		92	3.0	0.094	4.5	LOS A	0.4	10.0	0.43	0.30	0.43	34.0
East: Idaho Maryland Rd												
1	L2	179	3.0	0.162	4.7	LOS A	0.7	17.3	0.37	0.25	0.37	32.6
6	T1	168	3.0	0.236	5.4	LOS A	1.1	27.0	0.40	0.28	0.40	34.9
16	R2	93	3.0	0.236	5.4	LOS A	1.1	27.0	0.40	0.28	0.40	33.8
Approach		439	3.0	0.236	5.1	LOS A	1.1	27.0	0.39	0.27	0.39	33.7
North: Main St												
7	L2	54	3.0	0.213	5.7	LOS A	0.8	21.6	0.46	0.39	0.46	34.2
4	T1	156	3.0	0.213	5.7	LOS A	0.8	21.6	0.46	0.39	0.46	34.1
14	R2	210	3.0	0.129	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		419	3.0	0.213	2.9	LOS A	0.8	21.6	0.23	0.19	0.23	35.6
West: Main St												
5	L2	160	3.0	0.273	6.4	LOS A	1.1	29.1	0.48	0.42	0.48	32.9
2	T1	85	3.0	0.273	6.4	LOS A	1.1	29.1	0.48	0.42	0.48	32.8
12	R2	24	3.0	0.273	6.4	LOS A	1.1	29.1	0.48	0.42	0.48	31.9
Approach		268	3.0	0.273	6.4	LOS A	1.1	29.1	0.48	0.42	0.48	32.8
All Vehicles		1218	3.0	0.273	4.6	LOS A	1.1	29.1	0.36	0.28	0.36	34.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	33.2
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	76	348	4	0	0	0	0	210	302	166	250	0
Future Vol, veh/h	76	348	4	0	0	0	0	210	302	166	250	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	83	378	4	0	0	0	0	228	328	180	272	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	17.7	59.7	16.6
HCM LOS	C	F	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	30%	0%	100%	0%
Vol Thru, %	41%	70%	98%	0%	100%
Vol Right, %	59%	0%	2%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	512	250	178	166	250
LT Vol	0	76	0	166	0
Through Vol	210	174	174	0	250
RT Vol	302	0	4	0	0
Lane Flow Rate	557	272	193	180	272
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.985	0.565	0.393	0.382	0.536
Departure Headway (Hd)	6.371	7.481	7.309	7.615	7.102
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	568	478	489	476	511
Service Time	4.458	5.28	5.108	5.315	4.802
HCM Lane V/C Ratio	0.981	0.569	0.395	0.378	0.532
HCM Control Delay	59.7	19.7	14.8	14.9	17.7
HCM Lane LOS	F	C	B	B	C
HCM 95th-tile Q	13.8	3.4	1.8	1.8	3.1

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	348	45	62	403	274	552
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	424	55	90	617	571	818
Arrive On Green	0.26	0.26	0.20	0.20	0.32	0.32
Sat Flow, veh/h	1623	210	461	3256	1781	1585
Grp Volume(v), veh/h	0	393	248	217	274	552
Grp Sat Flow(s),veh/h/ln	0	1833	1847	1777	1781	1585
Q Serve(g_s), s	0.0	12.7	7.9	7.1	7.8	16.3
Cycle Q Clear(g_c), s	0.0	12.7	7.9	7.1	7.8	16.3
Prop In Lane		0.11	0.25		1.00	1.00
Lane Grp Cap(c), veh/h	0	478	360	347	571	818
V/C Ratio(X)	0.00	0.82	0.69	0.63	0.48	0.68
Avail Cap(c_a), veh/h	0	734	740	711	713	944
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	22.0	23.6	23.3	17.2	11.4
Incr Delay (d2), s/veh	0.0	4.5	2.4	1.9	0.6	1.6
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	5.6	3.5	3.0	3.0	8.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	26.4	26.0	25.2	17.9	12.9
LnGrp LOS	A	C	C	C	B	B
Approach Vol, veh/h	393			465	826	
Approach Delay, s/veh	26.4			25.6	14.6	
Approach LOS	C			C	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	25.0	21.2	17.0
Change Period (Y+Rc), s	* 4.7	* 4.7	4.7
Max Green Setting (Gmax), s	* 25	* 25	25.3
Max Q Clear Time (g_c+I1), s	18.3	14.7	9.9
Green Ext Time (p_c), s	1.9	1.8	2.4

Intersection Summary	
HCM 6th Ctrl Delay	20.4
HCM 6th LOS	C

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)	683	139	26	366	84	30
Future Volume (veh/h)	683	139	26	366	84	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	1900	1900
Adj Flow Rate, veh/h	719	146	27	385	88	32
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	1132	230	46	685	130	47
Arrive On Green	0.38	0.38	0.20	0.20	0.10	0.10
Sat Flow, veh/h	3036	597	228	3502	1255	456
Grp Volume(v), veh/h	434	431	221	191	121	0
Grp Sat Flow(s),veh/h/ln	1777	1763	1859	1777	1725	0
Q Serve(g_s), s	9.0	9.0	4.8	4.3	3.0	0.0
Cycle Q Clear(g_c), s	9.0	9.0	4.8	4.3	3.0	0.0
Prop In Lane		0.34	0.12		0.73	0.26
Lane Grp Cap(c), veh/h	683	678	374	357	179	0
V/C Ratio(X)	0.64	0.64	0.59	0.54	0.68	0.00
Avail Cap(c_a), veh/h	1589	1576	1044	997	398	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	11.3	11.3	16.3	16.1	19.5	0.0
Incr Delay (d2), s/veh	1.0	1.0	1.5	1.3	4.4	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	3.0	2.9	1.9	1.7	1.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.3	12.3	17.8	17.4	23.8	0.0
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	865			412	121	
Approach Delay, s/veh	12.3			17.6	23.8	
Approach LOS	B			B	C	

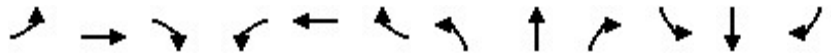
Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	9.3	22.0	13.8
Change Period (Y+Rc), s	4.6	* 4.7	4.7
Max Green Setting (Gmax), s	10.4	* 40	25.3
Max Q Clear Time (g_c+I1), s	5.0	11.0	6.8
Green Ext Time (p_c), s	0.1	6.4	2.3

Intersection Summary	
HCM 6th Ctrl Delay	14.9
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* 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	9	146	100	95	173	231	479	20	45	426	13
Future Volume (veh/h)	0	9	146	100	95	173	231	479	20	45	426	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	10	155	106	101	184	246	510	21	48	453	14
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	200	437	149	142	252	300	603	25	82	757	23
Arrive On Green	0.00	0.11	0.11	0.16	0.16	0.16	0.17	0.34	0.34	0.05	0.22	0.22
Sat Flow, veh/h	0	1870	1585	934	890	1585	1781	1784	73	1781	3519	109
Grp Volume(v), veh/h	0	10	155	207	0	184	246	0	531	48	228	239
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1824	0	1585	1781	0	1857	1781	1777	1851
Q Serve(g_s), s	0.0	0.3	4.7	6.5	0.0	6.6	8.0	0.0	15.9	1.6	6.9	7.0
Cycle Q Clear(g_c), s	0.0	0.3	4.7	6.5	0.0	6.6	8.0	0.0	15.9	1.6	6.9	7.0
Prop In Lane	0.00		1.00	0.51		1.00	1.00		0.04	1.00		0.06
Lane Grp Cap(c), veh/h	0	200	437	290	0	252	300	0	627	82	382	398
V/C Ratio(X)	0.00	0.05	0.35	0.71	0.00	0.73	0.82	0.00	0.85	0.59	0.60	0.60
Avail Cap(c_a), veh/h	0	309	529	453	0	394	442	0	907	205	720	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	24.1	17.4	23.9	0.0	24.0	24.1	0.0	18.4	28.1	21.2	21.2
Incr Delay (d2), s/veh	0.0	0.1	0.5	3.2	0.0	4.0	7.5	0.0	5.1	6.5	1.5	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	1.6	2.8	0.0	2.5	3.6	0.0	6.5	0.8	2.7	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	24.2	17.9	27.2	0.0	28.0	31.6	0.0	23.6	34.6	22.7	22.7
LnGrp LOS	A	C	B	C	A	C	C	A	C	C	C	C
Approach Vol, veh/h		165			391			777			515	
Approach Delay, s/veh		18.3			27.5			26.1			23.8	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.9	26.0		11.5	15.2	18.6		14.7
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1
Max Green Setting (Gmax), s	6.9	29.3		9.9	14.9	24.3		14.9
Max Q Clear Time (g_c+I1), s	3.6	17.9		6.7	10.0	9.0		8.6
Green Ext Time (p_c), s	0.0	2.4		0.1	0.3	2.1		0.9

Intersection Summary	
HCM 6th Ctrl Delay	25.1
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	33	47	105	699	460	195
Future Vol, veh/h	33	47	105	699	460	195
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	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	36	51	114	760	500	212

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1594	356	712	0	-	0
Stage 1	606	-	-	-	-	-
Stage 2	988	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	107	641	886	-	-	-
Stage 1	508	-	-	-	-	-
Stage 2	359	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	93	641	886	-	-	-
Mov Cap-2 Maneuver	278	-	-	-	-	-
Stage 1	442	-	-	-	-	-
Stage 2	359	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.7	1.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	886	-	278	641	-	-
HCM Lane V/C Ratio	0.129	-	0.129	0.08	-	-
HCM Control Delay (s)	9.7	-	19.9	11.1	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.4	0.3	-	-

Intersection	
Intersection Delay, s/veh	35.4
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	48	22	13	25	48	181	19	513	12	52	203	29
Future Vol, veh/h	48	22	13	25	48	181	19	513	12	52	203	29
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	52	24	14	27	52	195	20	552	13	56	218	31
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	12.2	15.5	59.1	14.5
HCM LOS	B	C	F	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	58%	10%	100%	0%
Vol Thru, %	0%	98%	27%	19%	0%	88%
Vol Right, %	0%	2%	16%	71%	0%	12%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	19	525	83	254	52	232
LT Vol	19	0	48	25	52	0
Through Vol	0	513	22	48	0	203
RT Vol	0	12	13	181	0	29
Lane Flow Rate	20	565	89	273	56	249
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.039	0.993	0.185	0.488	0.114	0.466
Departure Headway (Hd)	6.86	6.334	7.464	6.429	7.331	6.729
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	522	576	479	560	488	534
Service Time	4.601	4.075	5.534	4.478	5.084	4.482
HCM Lane V/C Ratio	0.038	0.981	0.186	0.487	0.115	0.466
HCM Control Delay	9.9	60.9	12.2	15.5	11	15.3
HCM Lane LOS	A	F	B	C	B	C
HCM 95th-tile Q	0.1	14.3	0.7	2.7	0.4	2.4

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	119	151	275	407	147	105
Future Vol, veh/h	119	151	275	407	147	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	127	161	293	433	156	112

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	293	0	-	0	708	293
Stage 1	-	-	-	-	293	-
Stage 2	-	-	-	-	415	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1269	-	-	0	401	746
Stage 1	-	-	-	0	757	-
Stage 2	-	-	-	0	666	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1269	-	-	-	361	746
Mov Cap-2 Maneuver	-	-	-	-	361	-
Stage 1	-	-	-	-	681	-
Stage 2	-	-	-	-	666	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	17.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1269	-	-	361	746
HCM Lane V/C Ratio	0.1	-	-	0.433	0.15
HCM Control Delay (s)	8.2	-	-	22.4	10.7
HCM Lane LOS	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	-	-	2.1	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	201	343	23	224	79	12
Future Volume (veh/h)	201	343	23	224	79	12
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	1900	1900
Adj Flow Rate, veh/h	207	354	24	231	81	12
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	650	551	65	1033	168	25
Arrive On Green	0.35	0.35	0.04	0.55	0.11	0.11
Sat Flow, veh/h	1870	1585	1781	1870	1512	224
Grp Volume(v), veh/h	207	354	24	231	94	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1754	0
Q Serve(g_s), s	2.3	5.2	0.4	1.8	1.4	0.0
Cycle Q Clear(g_c), s	2.3	5.2	0.4	1.8	1.4	0.0
Prop In Lane		1.00	1.00		0.86	0.13
Lane Grp Cap(c), veh/h	650	551	65	1033	195	0
V/C Ratio(X)	0.32	0.64	0.37	0.22	0.48	0.00
Avail Cap(c_a), veh/h	2029	1719	466	1694	961	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	6.7	7.7	13.1	3.2	11.7	0.0
Incr Delay (d2), s/veh	0.3	1.3	3.5	0.1	1.8	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	0.6	1.2	0.2	0.2	0.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.0	8.9	16.6	3.3	13.5	0.0
LnGrp LOS	A	A	B	A	B	A
Approach Vol, veh/h	561			255	94	
Approach Delay, s/veh	8.2			4.6	13.5	
Approach LOS	A			A	B	

Timer - Assigned Phs	2	3	4	8
Phs Duration (G+Y+Rc), s	7.8	5.7	14.4	20.1
Change Period (Y+Rc), s	* 4.7	* 4.7	* 4.7	* 4.7
Max Green Setting (Gmax), s	* 15	* 7.3	* 30	* 25
Max Q Clear Time (g_c+I1), s	3.4	2.4	7.2	3.8
Green Ext Time (p_c), s	0.2	0.0	2.5	1.3

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

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	117	87	130	133	42	121
Future Vol, veh/h	117	87	130	133	42	121
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	127	95	141	145	46	132
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	9.9	9.7	9
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	57%	0%	100%	0%
Vol Thru, %	43%	49%	0%	0%
Vol Right, %	0%	51%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	204	263	42	121
LT Vol	117	0	42	0
Through Vol	87	130	0	0
RT Vol	0	133	0	121
Lane Flow Rate	222	286	46	132
Geometry Grp	2	2	7	7
Degree of Util (X)	0.296	0.345	0.078	0.181
Departure Headway (Hd)	4.81	4.347	6.169	4.958
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	745	826	579	719
Service Time	2.852	2.385	3.928	2.715
HCM Lane V/C Ratio	0.298	0.346	0.079	0.184
HCM Control Delay	9.9	9.7	9.5	8.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.2	1.5	0.3	0.7

Intersection	
Intersection Delay, s/veh	19.1
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	89	332	206	202	151	72
Future Vol, veh/h	89	332	206	202	151	72
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	97	361	224	220	164	78
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	19.6	22.9	11.3
HCM LOS	C	C	B

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	50%	21%	0%	0%
Vol Thru, %	50%	0%	100%	0%
Vol Right, %	0%	79%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	408	421	151	72
LT Vol	206	89	0	0
Through Vol	202	0	151	0
RT Vol	0	332	0	72
Lane Flow Rate	443	458	164	78
Geometry Grp	5	2	7	7
Degree of Util (X)	0.724	0.687	0.3	0.127
Departure Headway (Hd)	5.881	5.401	6.57	5.855
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	612	664	543	608
Service Time	3.942	3.465	4.35	3.634
HCM Lane V/C Ratio	0.724	0.69	0.302	0.128
HCM Control Delay	22.9	19.6	12.2	9.5
HCM Lane LOS	C	C	B	A
HCM 95th-tile Q	6.1	5.4	1.3	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	59	195	593	148	296	231
Future Volume (veh/h)	59	195	593	148	296	231
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	64	212	645	161	322	251
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	242	550	729	618	376	1269
Arrive On Green	0.14	0.14	0.40	0.40	0.22	0.69
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	64	212	645	161	322	251
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	2.1	6.6	21.1	4.5	11.5	3.1
Cycle Q Clear(g_c), s	2.1	6.6	21.1	4.5	11.5	3.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	242	550	729	618	376	1269
V/C Ratio(X)	0.26	0.39	0.88	0.26	0.86	0.20
Avail Cap(c_a), veh/h	380	674	856	725	537	1394
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	1.00
Uniform Delay (d), s/veh	24.8	15.5	18.0	13.0	24.3	3.5
Incr Delay (d2), s/veh	0.6	0.4	9.8	0.2	9.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.2	9.2	1.3	5.1	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.4	15.9	27.8	13.2	33.5	3.6
LnGrp LOS	C	B	C	B	C	A
Approach Vol, veh/h	276		806			573
Approach Delay, s/veh	18.1		24.9			20.4
Approach LOS	B		C			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	19.1	31.5			50.6	13.9
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	13.5	23.1			5.1	8.6
Green Ext Time (p_c), s	0.5	2.6			1.4	0.4

Intersection Summary	
HCM 6th Ctrl Delay	22.2
HCM 6th LOS	C

1: Tinloy St /Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.3	0.0	0.1
Total Del/Veh (s)	10.1	33.2	7.2	17.2

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.1	1.2	0.0	0.5
Total Del/Veh (s)	6.0	9.4	17.3	10.8

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.5	1.9	0.9
Total Del/Veh (s)	17.1	9.4	13.5	13.6	11.9

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.4	2.7	0.8
Total Del/Veh (s)	11.1	12.4	14.9	35.4	18.5

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.0	7.3	25.9	12.7

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.5	1.5	0.0	0.3
Total Del/Veh (s)	11.7	20.3	17.6	5.2	13.5

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	2.2	1.2
Total Del/Veh (s)	14.5	18.1	11.8	13.7

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.5	0.0	0.2	0.5
Total Del/Veh (s)	12.2	6.9	11.4	9.3

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.3	0.2
Total Del/Veh (s)	9.6	10.4	1.1	7.2

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

Cumulative AM Peak
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	30	3.0	0.273	8.7	LOS A	1.2	29.6	0.65	0.65	0.65	32.9
8	T1	63	3.0	0.273	8.7	LOS A	1.2	29.6	0.65	0.65	0.65	32.8
18	R2	90	3.0	0.273	8.7	LOS A	1.2	29.6	0.65	0.65	0.65	31.9
Approach		183	3.0	0.273	8.7	LOS A	1.2	29.6	0.65	0.65	0.65	32.4
East: Idaho Maryland Rd												
1	L2	241	3.0	0.258	6.5	LOS A	1.1	28.4	0.52	0.45	0.52	31.9
6	T1	158	3.0	0.452	9.2	LOS A	2.6	67.8	0.61	0.61	0.71	32.9
16	R2	264	3.0	0.452	9.2	LOS A	2.6	67.8	0.61	0.61	0.71	31.9
Approach		663	3.0	0.452	8.2	LOS A	2.6	67.8	0.58	0.55	0.64	32.1
North: Main St												
7	L2	143	3.0	0.359	7.7	LOS A	1.6	40.7	0.54	0.50	0.54	32.7
4	T1	197	3.0	0.359	7.7	LOS A	1.6	40.7	0.54	0.50	0.54	32.7
14	R2	209	3.0	0.128	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		549	3.0	0.359	4.8	LOS A	1.6	40.7	0.34	0.31	0.34	34.2
West: Main St												
5	L2	321	3.0	0.639	14.9	LOS B	5.8	147.7	0.76	0.97	1.37	29.3
2	T1	193	3.0	0.639	14.9	LOS B	5.8	147.7	0.76	0.97	1.37	29.3
12	R2	16	3.0	0.639	14.9	LOS B	5.8	147.7	0.76	0.97	1.37	28.6
Approach		530	3.0	0.639	14.9	LOS B	5.8	147.7	0.76	0.97	1.37	29.3
All Vehicles		1926	3.0	0.639	9.1	LOS A	5.8	147.7	0.56	0.61	0.75	31.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	20.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	79	324	3	0	0	0	0	129	168	177	387	0
Future Vol, veh/h	79	324	3	0	0	0	0	129	168	177	387	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	88	360	3	0	0	0	0	143	187	197	430	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	18.9	24.7
HCM LOS	C	C	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	33%	0%	100%	0%
Vol Thru, %	43%	67%	98%	0%	100%
Vol Right, %	57%	0%	2%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	297	241	165	177	387
LT Vol	0	79	0	177	0
Through Vol	129	162	162	0	387
RT Vol	168	0	3	0	0
Lane Flow Rate	330	268	183	197	430
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.597	0.541	0.361	0.387	0.785
Departure Headway (Hd)	6.515	7.275	7.095	7.083	6.573
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	551	493	506	505	546
Service Time	4.584	5.047	4.866	4.855	4.345
HCM Lane V/C Ratio	0.599	0.544	0.362	0.39	0.788
HCM Control Delay	18.9	18.4	13.9	14.3	29.4
HCM Lane LOS	C	C	B	B	D
HCM 95th-tile Q	3.9	3.2	1.6	1.8	7.3

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)		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	291	42	89	888	167	272
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	373	54	114	1192	282	821
Arrive On Green	0.23	0.23	0.36	0.36	0.16	0.16
Sat Flow, veh/h	1598	231	316	3409	1781	1585
Grp Volume(v), veh/h	0	333	522	455	167	272
Grp Sat Flow(s),veh/h/ln	0	1829	1855	1777	1781	1585
Q Serve(g_s), s	0.0	9.7	14.2	12.5	4.9	5.7
Cycle Q Clear(g_c), s	0.0	9.7	14.2	12.5	4.9	5.7
Prop In Lane		0.13	0.17		1.00	1.00
Lane Grp Cap(c), veh/h	0	427	667	639	282	821
V/C Ratio(X)	0.00	0.78	0.78	0.71	0.59	0.33
Avail Cap(c_a), veh/h	0	815	826	792	794	1276
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	20.4	16.2	15.7	22.2	8.0
Incr Delay (d2), s/veh	0.0	3.1	4.0	2.3	2.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.1	6.0	4.8	2.1	3.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	23.5	20.2	17.9	24.1	8.2
LnGrp LOS	A	C	C	B	C	A
Approach Vol, veh/h	333			977	439	
Approach Delay, s/veh	23.5			19.1	14.3	
Approach LOS	C			B	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	13.7	18.0	25.1
Change Period (Y+Rc), s	* 4.7	* 4.7	4.7
Max Green Setting (Gmax), s	* 25	* 25	25.3
Max Q Clear Time (g_c+I1), s	7.7	11.7	16.2
Green Ext Time (p_c), s	1.3	1.6	4.2

Intersection Summary	
HCM 6th Ctrl Delay	18.7
HCM 6th LOS	B

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)	487	77	26	768	108	35
Future Volume (veh/h)	487	77	26	768	108	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	1900	1900
Adj Flow Rate, veh/h	560	89	30	883	124	40
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	849	135	39	1214	168	54
Arrive On Green	0.28	0.28	0.34	0.34	0.13	0.13
Sat Flow, veh/h	3166	487	114	3621	1300	419
Grp Volume(v), veh/h	323	326	489	424	165	0
Grp Sat Flow(s),veh/h/ln	1777	1783	1865	1777	1730	0
Q Serve(g_s), s	9.0	9.1	13.0	11.5	5.1	0.0
Cycle Q Clear(g_c), s	9.0	9.1	13.0	11.5	5.1	0.0
Prop In Lane		0.27	0.06		0.75	0.24
Lane Grp Cap(c), veh/h	491	493	642	611	224	0
V/C Ratio(X)	0.66	0.66	0.76	0.69	0.74	0.00
Avail Cap(c_a), veh/h	1280	1285	843	804	291	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	17.9	17.9	16.3	15.8	23.4	0.0
Incr Delay (d2), s/veh	1.5	1.5	3.0	1.7	6.9	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	3.5	3.5	5.4	4.4	2.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.4	19.4	19.3	17.5	30.3	0.0
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	649			913	165	
Approach Delay, s/veh	19.4			18.5	30.3	
Approach LOS	B			B	C	

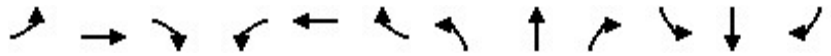
Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	11.8	20.2	23.9
Change Period (Y+Rc), s	4.6	* 4.7	4.7
Max Green Setting (Gmax), s	9.4	* 40	25.3
Max Q Clear Time (g_c+I1), s	7.1	11.1	15.0
Green Ext Time (p_c), s	0.1	4.4	4.2

Intersection Summary	
HCM 6th Ctrl Delay	20.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* 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)	3	71	223	28	34	106	224	581	77	147	509	15
Future Volume (veh/h)	3	71	223	28	34	106	224	581	77	147	509	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	73	230	29	35	109	231	599	79	152	525	15
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	10	236	454	79	96	152	275	649	86	164	1194	34
Arrive On Green	0.13	0.13	0.13	0.10	0.10	0.10	0.15	0.40	0.40	0.09	0.34	0.34
Sat Flow, veh/h	74	1793	1585	829	1000	1585	1781	1618	213	1781	3528	101
Grp Volume(v), veh/h	76	0	230	64	0	109	231	0	678	152	264	276
Grp Sat Flow(s),veh/h/ln	1867	0	1585	1829	0	1585	1781	0	1832	1781	1777	1852
Q Serve(g_s), s	2.8	0.0	9.1	2.5	0.0	5.0	9.5	0.0	26.4	6.4	8.7	8.7
Cycle Q Clear(g_c), s	2.8	0.0	9.1	2.5	0.0	5.0	9.5	0.0	26.4	6.4	8.7	8.7
Prop In Lane	0.04		1.00	0.45		1.00	1.00		0.12	1.00		0.05
Lane Grp Cap(c), veh/h	246	0	454	175	0	152	275	0	734	164	601	627
V/C Ratio(X)	0.31	0.00	0.51	0.37	0.00	0.72	0.84	0.00	0.92	0.93	0.44	0.44
Avail Cap(c_a), veh/h	246	0	454	363	0	315	354	0	788	164	601	627
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.5	0.0	22.4	31.8	0.0	33.0	30.8	0.0	21.4	33.8	19.3	19.3
Incr Delay (d2), s/veh	0.7	0.0	0.9	1.3	0.0	6.3	13.3	0.0	15.8	49.7	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	3.3	1.1	0.0	2.1	4.9	0.0	13.6	4.9	3.5	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.2	0.0	23.3	33.1	0.0	39.2	44.1	0.0	37.2	83.5	19.8	19.8
LnGrp LOS	C	A	C	C	A	D	D	A	D	F	B	B
Approach Vol, veh/h		306			173			909			692	
Approach Delay, s/veh		25.0			36.9			39.0			33.8	
Approach LOS		C			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	35.8		15.0	16.7	31.1		12.3
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1
Max Green Setting (Gmax), s	6.9	32.3		9.9	14.9	24.3		14.9
Max Q Clear Time (g_c+I1), s	8.4	28.4		11.1	11.5	10.7		7.0
Green Ext Time (p_c), s	0.0	1.7		0.0	0.2	2.7		0.4

Intersection Summary	
HCM 6th Ctrl Delay	35.0
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	193	91	29	687	666	87
Future Vol, veh/h	193	91	29	687	666	87
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	203	96	31	723	701	92

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1532	397	793	0	-	0
Stage 1	747	-	-	-	-	-
Stage 2	785	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	~ 117	603	826	-	-	-
Stage 1	430	-	-	-	-	-
Stage 2	448	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 113	603	826	-	-	-
Mov Cap-2 Maneuver	308	-	-	-	-	-
Stage 1	414	-	-	-	-	-
Stage 2	448	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28.8	0.4	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	826	-	308	603	-	-
HCM Lane V/C Ratio	0.037	-	0.66	0.159	-	-
HCM Control Delay (s)	9.5	-	36.7	12.1	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.1	-	4.4	0.6	-	-

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

Intersection	
Intersection Delay, s/veh	29.4
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	24	19	23	40	79	10	333	34	151	517	77
Future Vol, veh/h	23	24	19	23	40	79	10	333	34	151	517	77
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	24	19	23	40	80	10	336	34	153	522	78
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	11.1	11.9	18.8	39.8
HCM LOS	B	B	C	E

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	35%	16%	100%	0%
Vol Thru, %	0%	91%	36%	28%	0%	87%
Vol Right, %	0%	9%	29%	56%	0%	13%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	367	66	142	151	594
LT Vol	10	0	23	23	151	0
Through Vol	0	333	24	40	0	517
RT Vol	0	34	19	79	0	77
Lane Flow Rate	10	371	67	143	153	600
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.019	0.633	0.129	0.259	0.266	0.946
Departure Headway (Hd)	6.725	6.151	6.975	6.507	6.273	5.675
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	530	586	510	549	572	636
Service Time	4.491	3.916	5.07	4.587	4.025	3.426
HCM Lane V/C Ratio	0.019	0.633	0.131	0.26	0.267	0.943
HCM Control Delay	9.6	19	11.1	11.9	11.3	47.1
HCM Lane LOS	A	C	B	B	B	E
HCM 95th-tile Q	0.1	4.4	0.4	1	1.1	13

Intersection	
Int Delay, s/veh	52

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	82	238	245	266	406	118
Future Vol, veh/h	82	238	245	266	406	118
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	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	89	259	266	289	441	128

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	266	0	-	0	703	266
Stage 1	-	-	-	-	266	-
Stage 2	-	-	-	-	437	-
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	1298	-	-	0	~ 404	773
Stage 1	-	-	-	0	779	-
Stage 2	-	-	-	0	651	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	1298	-	-	-	~ 376	773
Mov Cap-2 Maneuver	-	-	-	-	~ 376	-
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	651	-

Approach	EB	WB	SB
HCM Control Delay, s	2	0	106.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1298	-	-	376	773
HCM Lane V/C Ratio	0.069	-	-	1.174	0.166
HCM Control Delay (s)	8	-	-	134.8	10.6
HCM Lane LOS	A	-	-	F	B
HCM 95th %tile Q(veh)	0.2	-	-	17.6	0.6

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	322	146	13	369	332	37
Future Volume (veh/h)	322	146	13	369	332	37
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	1900	1900
Adj Flow Rate, veh/h	402	182	16	461	415	46
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	588	498	44	853	490	54
Arrive On Green	0.31	0.31	0.02	0.46	0.31	0.31
Sat Flow, veh/h	1870	1585	1781	1870	1581	175
Grp Volume(v), veh/h	402	182	16	461	462	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1760	0
Q Serve(g_s), s	7.5	3.6	0.4	7.1	9.9	0.0
Cycle Q Clear(g_c), s	7.5	3.6	0.4	7.1	9.9	0.0
Prop In Lane		1.00	1.00		0.90	0.10
Lane Grp Cap(c), veh/h	588	498	44	853	545	0
V/C Ratio(X)	0.68	0.37	0.37	0.54	0.85	0.00
Avail Cap(c_a), veh/h	1412	1197	324	1179	671	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	12.0	10.7	19.3	7.9	13.0	0.0
Incr Delay (d2), s/veh	1.4	0.4	5.1	0.5	8.4	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	2.7	1.0	0.2	2.1	4.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.4	11.1	24.4	8.4	21.3	0.0
LnGrp LOS	B	B	C	A	C	A
Approach Vol, veh/h	584			477	462	
Approach Delay, s/veh	12.7			9.0	21.3	
Approach LOS	B			A	C	

Timer - Assigned Phs	2	3	4	8
Phs Duration (G+Y+Rc), s	17.1	5.7	17.3	23.0
Change Period (Y+Rc), s	* 4.7	* 4.7	* 4.7	* 4.7
Max Green Setting (Gmax), s	* 15	* 7.3	* 30	* 25
Max Q Clear Time (g_c+I1), s	11.9	2.4	9.5	9.1
Green Ext Time (p_c), s	0.6	0.0	3.1	2.6

Intersection Summary	
HCM 6th Ctrl Delay	14.1
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	16
Intersection LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	244	114	167	92	158	230
Future Vol, veh/h	244	114	167	92	158	230
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	287	134	196	108	186	271
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	20.4	13.9	13.4
HCM LOS	C	B	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	68%	0%	100%	0%
Vol Thru, %	32%	64%	0%	0%
Vol Right, %	0%	36%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	358	259	158	230
LT Vol	244	0	158	0
Through Vol	114	167	0	0
RT Vol	0	92	0	230
Lane Flow Rate	421	305	186	271
Geometry Grp	2	2	7	7
Degree of Util (X)	0.68	0.48	0.364	0.437
Departure Headway (Hd)	5.812	5.674	7.041	5.82
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	619	634	509	617
Service Time	3.863	3.732	4.797	3.575
HCM Lane V/C Ratio	0.68	0.481	0.365	0.439
HCM Control Delay	20.4	13.9	13.8	13.1
HCM Lane LOS	C	B	B	B
HCM 95th-tile Q	5.3	2.6	1.6	2.2

Intersection	
Intersection Delay, s/veh	213.1
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	133	441	424	418	379	139
Future Vol, veh/h	133	441	424	418	379	139
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	145	479	461	454	412	151
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	108	390.9	40.4
HCM LOS	F	F	E

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	50%	23%	0%	0%
Vol Thru, %	50%	0%	100%	0%
Vol Right, %	0%	77%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	842	574	379	139
LT Vol	424	133	0	0
Through Vol	418	0	379	0
RT Vol	0	441	0	139
Lane Flow Rate	915	624	412	151
Geometry Grp	5	2	7	7
Degree of Util (X)	1.809	1.127	0.872	0.29
Departure Headway (Hd)	7.586	7.705	9.231	8.498
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	485	474	395	426
Service Time	5.586	5.705	6.931	6.198
HCM Lane V/C Ratio	1.887	1.316	1.043	0.354
HCM Control Delay	390.9	108	49.9	14.6
HCM Lane LOS	F	F	E	B
HCM 95th-tile Q	54	18.2	8.6	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	157	363	387	48	132	570
Future Volume (veh/h)	157	363	387	48	132	570
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	171	395	421	52	143	620
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	461	578	547	463	189	938
Arrive On Green	0.26	0.26	0.30	0.30	0.11	0.51
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	171	395	421	52	143	620
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	3.9	10.4	10.1	1.2	3.9	12.1
Cycle Q Clear(g_c), s	3.9	10.4	10.1	1.2	3.9	12.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	461	578	547	463	189	938
V/C Ratio(X)	0.37	0.68	0.77	0.11	0.76	0.66
Avail Cap(c_a), veh/h	508	620	1142	968	717	1861
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	1.00
Uniform Delay (d), s/veh	14.5	12.7	15.4	12.3	20.9	8.7
Incr Delay (d2), s/veh	0.5	2.9	2.3	0.1	6.1	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.4	3.6	0.3	1.6	3.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.0	15.6	17.7	12.4	27.0	9.5
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	566		473			763
Approach Delay, s/veh	15.4		17.1			12.8
Approach LOS	B		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	10.3	20.3			30.6	17.7
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	5.9	12.1			14.1	12.4
Green Ext Time (p_c), s	0.3	2.3			4.1	0.4

Intersection Summary	
HCM 6th Ctrl Delay	14.7
HCM 6th LOS	B

1: Tinloy St /Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.1	0.3	0.0	0.1
Total Del/Veh (s)	18.2	102.8	17.1	40.2

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	1.1	0.0	0.4
Total Del/Veh (s)	6.3	9.3	29.2	14.6

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.6	2.1	1.2
Total Del/Veh (s)	23.8	12.1	19.7	20.7	17.1

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.5	2.7	0.7
Total Del/Veh (s)	15.4	14.7	21.1	37.0	21.0

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.9	9.9	28.0	13.9

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.6	1.6	0.0	0.6
Total Del/Veh (s)	20.7	40.9	44.6	15.6	30.8

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.8	2.7	1.0
Total Del/Veh (s)	13.0	13.9	18.5	14.7

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.6	0.3	0.2	0.8
Total Del/Veh (s)	22.3	13.8	20.9	18.4

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.5	0.3
Total Del/Veh (s)	16.1	10.8	2.1	9.9

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

Cumulative PM Peak
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	72	3.0	0.291	7.5	LOS A	1.3	34.3	0.59	0.55	0.59	33.1
8	T1	81	3.0	0.291	7.5	LOS A	1.3	34.3	0.59	0.55	0.59	33.0
18	R2	89	3.0	0.291	7.5	LOS A	1.3	34.3	0.59	0.55	0.59	32.1
Approach		242	3.0	0.291	7.5	LOS A	1.3	34.3	0.59	0.55	0.59	32.7
East: Idaho Maryland Rd												
1	L2	365	3.0	0.379	7.9	LOS A	1.8	46.8	0.56	0.49	0.56	31.2
6	T1	311	3.0	0.559	11.1	LOS B	4.7	121.3	0.66	0.73	0.95	32.1
16	R2	232	3.0	0.559	11.1	LOS B	4.7	121.3	0.66	0.73	0.95	31.2
Approach		907	3.0	0.559	9.8	LOS A	4.7	121.3	0.62	0.63	0.79	31.5
North: Main St												
7	L2	94	3.0	0.447	11.2	LOS B	2.4	60.3	0.68	0.77	0.96	31.5
4	T1	226	3.0	0.447	11.2	LOS B	2.4	60.3	0.68	0.77	0.96	31.4
14	R2	354	3.0	0.218	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		674	3.0	0.447	5.4	LOS A	2.4	60.3	0.32	0.37	0.45	34.2
West: Main St												
5	L2	229	3.0	0.519	12.4	LOS B	3.3	83.7	0.70	0.83	1.09	30.3
2	T1	131	3.0	0.519	12.4	LOS B	3.3	83.7	0.70	0.83	1.09	30.3
12	R2	33	3.0	0.519	12.4	LOS B	3.3	83.7	0.70	0.83	1.09	29.5
Approach		393	3.0	0.519	12.4	LOS B	3.3	83.7	0.70	0.83	1.09	30.2
All Vehicles		2216	3.0	0.559	8.7	LOS A	4.7	121.3	0.54	0.58	0.72	32.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	107	2	0	0	0	0	101	119	101	100	0
Future Vol, veh/h	20	107	2	0	0	0	0	101	119	101	100	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	116	2	0	0	0	0	110	129	110	109	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	9.2	10.2	9.2
HCM LOS	A	B	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	27%	0%	100%	0%
Vol Thru, %	46%	73%	96%	0%	100%
Vol Right, %	54%	0%	4%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	220	74	56	101	100
LT Vol	0	20	0	101	0
Through Vol	101	54	54	0	100
RT Vol	119	0	2	0	0
Lane Flow Rate	239	80	60	110	109
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.323	0.128	0.094	0.172	0.155
Departure Headway (Hd)	4.861	5.781	5.619	5.64	5.137
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	739	618	636	636	697
Service Time	2.898	3.532	3.37	3.381	2.877
HCM Lane V/C Ratio	0.323	0.129	0.094	0.173	0.156
HCM Control Delay	10.2	9.4	9	9.6	8.8
HCM Lane LOS	B	A	A	A	A
HCM 95th-tile Q	1.4	0.4	0.3	0.6	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	207	15	44	171	119	391
Future Volume (veh/h)	207	15	44	171	119	391
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	225	16	48	186	129	425
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	325	23	128	528	510	742
Arrive On Green	0.19	0.19	0.18	0.18	0.29	0.29
Sat Flow, veh/h	1726	123	705	3001	1781	1585
Grp Volume(v), veh/h	0	241	125	109	129	425
Grp Sat Flow(s),veh/h/ln	0	1848	1835	1777	1781	1585
Q Serve(g_s), s	0.0	5.0	2.5	2.2	2.3	8.0
Cycle Q Clear(g_c), s	0.0	5.0	2.5	2.2	2.3	8.0
Prop In Lane		0.07	0.38		1.00	1.00
Lane Grp Cap(c), veh/h	0	348	333	323	510	742
V/C Ratio(X)	0.00	0.69	0.38	0.34	0.25	0.57
Avail Cap(c_a), veh/h	0	1141	1133	1097	1099	1266
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	15.5	14.7	14.6	11.3	7.9
Incr Delay (d2), s/veh	0.0	2.5	0.7	0.6	0.3	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.0	0.9	0.8	0.8	3.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	18.0	15.4	15.2	11.5	8.6
LnGrp LOS	A	B	B	B	B	A
Approach Vol, veh/h	241			234	554	
Approach Delay, s/veh	18.0			15.3	9.3	
Approach LOS	B			B	A	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	16.4	12.4	12.1
Change Period (Y+Rc), s	* 4.7	* 4.7	4.7
Max Green Setting (Gmax), s	* 25	* 25	25.3
Max Q Clear Time (g_c+I1), s	10.0	7.0	4.5
Green Ext Time (p_c), s	1.8	1.3	1.2

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.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	536	77	24	180	45	7
Future Volume (veh/h)	536	77	24	180	45	7
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	1900	1900
Adj Flow Rate, veh/h	583	84	26	196	49	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	1052	151	80	640	109	18
Arrive On Green	0.34	0.34	0.20	0.20	0.07	0.07
Sat Flow, veh/h	3212	448	405	3316	1481	242
Grp Volume(v), veh/h	332	335	119	103	58	0
Grp Sat Flow(s),veh/h/ln	1777	1790	1850	1777	1753	0
Q Serve(g_s), s	5.5	5.5	2.0	1.8	1.1	0.0
Cycle Q Clear(g_c), s	5.5	5.5	2.0	1.8	1.1	0.0
Prop In Lane		0.25	0.22		0.84	0.14
Lane Grp Cap(c), veh/h	600	604	368	353	129	0
V/C Ratio(X)	0.55	0.56	0.32	0.29	0.45	0.00
Avail Cap(c_a), veh/h	1997	2012	1306	1254	508	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	9.7	9.7	12.3	12.2	15.9	0.0
Incr Delay (d2), s/veh	0.8	0.8	0.5	0.5	2.5	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	1.6	1.7	0.7	0.6	0.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.5	10.5	12.8	12.7	18.4	0.0
LnGrp LOS	B	B	B	B	B	A
Approach Vol, veh/h	667			222	58	
Approach Delay, s/veh	10.5			12.7	18.4	
Approach LOS	B			B	B	

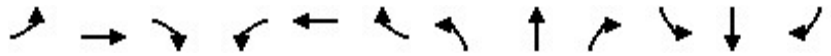
Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	7.2	16.8	11.8
Change Period (Y+Rc), s	4.6	* 4.7	4.7
Max Green Setting (Gmax), s	10.4	* 40	25.3
Max Q Clear Time (g_c+I1), s	3.1	7.5	4.0
Green Ext Time (p_c), s	0.1	4.6	1.2

Intersection Summary	
HCM 6th Ctrl Delay	11.5
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* 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	5	98	74	50	89	106	224	11	13	270	5
Future Volume (veh/h)	0	5	98	74	50	89	106	224	11	13	270	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	110	80	54	97	115	243	12	14	293	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	190	649	140	95	205	184	476	23	32	656	11
Arrive On Green	0.00	0.00	0.10	0.13	0.13	0.13	0.10	0.27	0.27	0.02	0.18	0.18
Sat Flow, veh/h	0	1870	3170	1084	732	1585	1781	1767	87	1781	3575	61
Grp Volume(v), veh/h	0	0	110	134	0	97	115	0	255	14	145	153
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1816	0	1585	1781	0	1855	1781	1777	1859
Q Serve(g_s), s	0.0	0.0	1.2	3.0	0.0	2.5	2.7	0.0	5.1	0.3	3.2	3.2
Cycle Q Clear(g_c), s	0.0	0.0	1.2	3.0	0.0	2.5	2.7	0.0	5.1	0.3	3.2	3.2
Prop In Lane	0.00		1.00	0.60		1.00	1.00		0.05	1.00		0.03
Lane Grp Cap(c), veh/h	0	190	649	235	0	205	184	0	499	32	326	341
V/C Ratio(X)	0.00	0.00	0.17	0.57	0.00	0.47	0.62	0.00	0.51	0.44	0.45	0.45
Avail Cap(c_a), veh/h	0	425	1049	621	0	542	610	0	1248	282	992	1038
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	14.3	17.8	0.0	17.6	18.7	0.0	13.5	21.2	15.8	15.8
Incr Delay (d2), s/veh	0.0	0.0	0.1	2.2	0.0	1.7	3.4	0.0	0.8	9.2	1.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.4	1.2	0.0	0.9	1.1	0.0	1.7	0.2	1.1	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	14.4	20.0	0.0	19.3	22.1	0.0	14.3	30.4	16.8	16.7
LnGrp LOS	A	A	B	B	A	B	C	A	B	C	B	B
Approach Vol, veh/h		110			231			370			312	
Approach Delay, s/veh		14.4			19.7			16.7			17.4	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.9	17.4		9.5	9.6	13.7		10.7
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1
Max Green Setting (Gmax), s	6.9	29.3		9.9	14.9	24.3		14.9
Max Q Clear Time (g_c+I1), s	2.3	7.1		3.2	4.7	5.2		5.0
Green Ext Time (p_c), s	0.0	1.3		0.2	0.2	1.4		0.7

Intersection Summary	
HCM 6th Ctrl Delay	17.3
HCM 6th LOS	B

Notes

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

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	30	56	321	313	98
Future Vol, veh/h	20	30	56	321	313	98
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	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	22	33	61	349	340	107

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	865	224	447	0	-	0
Stage 1	394	-	-	-	-	-
Stage 2	471	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	308	780	1111	-	-	-
Stage 1	651	-	-	-	-	-
Stage 2	627	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	291	780	1111	-	-	-
Mov Cap-2 Maneuver	485	-	-	-	-	-
Stage 1	615	-	-	-	-	-
Stage 2	627	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11	1.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1111	-	485	780	-	-
HCM Lane V/C Ratio	0.055	-	0.045	0.042	-	-
HCM Control Delay (s)	8.4	-	12.8	9.8	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	0.1	-	-

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	10	9	28	25	80	15	314	6	25	103	12
Future Vol, veh/h	17	10	9	28	25	80	15	314	6	25	103	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	11	10	30	27	87	16	341	7	27	112	13
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	8.8	9.3	12.7	9.1
HCM LOS	A	A	B	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	47%	21%	100%	0%
Vol Thru, %	0%	98%	28%	19%	0%	90%
Vol Right, %	0%	2%	25%	60%	0%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	320	36	133	25	115
LT Vol	15	0	17	28	25	0
Through Vol	0	314	10	25	0	103
RT Vol	0	6	9	80	0	12
Lane Flow Rate	16	348	39	145	27	125
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.026	0.496	0.058	0.199	0.044	0.183
Departure Headway (Hd)	5.646	5.13	5.375	4.95	5.85	5.272
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	631	699	661	721	608	676
Service Time	3.405	2.888	3.455	3.01	3.62	3.041
HCM Lane V/C Ratio	0.025	0.498	0.059	0.201	0.044	0.185
HCM Control Delay	8.6	12.9	8.8	9.3	8.9	9.2
HCM Lane LOS	A	B	A	A	A	A
HCM 95th-tile Q	0.1	2.8	0.2	0.7	0.1	0.7

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	116	49	133	242	118	44
Future Vol, veh/h	116	49	133	242	118	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	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	126	53	145	263	128	48

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	145	0	-	0	450	145
Stage 1	-	-	-	-	145	-
Stage 2	-	-	-	-	305	-
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	1437	-	-	0	567	902
Stage 1	-	-	-	0	882	-
Stage 2	-	-	-	0	748	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	1437	-	-	-	517	902
Mov Cap-2 Maneuver	-	-	-	-	517	-
Stage 1	-	-	-	-	804	-
Stage 2	-	-	-	-	748	-

Approach	EB	WB	SB
HCM Control Delay, s	5.4	0	12.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1437	-	-	517	902
HCM Lane V/C Ratio	0.088	-	-	0.248	0.053
HCM Control Delay (s)	7.7	-	-	14.2	9.2
HCM Lane LOS	A	-	-	B	A
HCM 95th %tile Q(veh)	0.3	-	-	1	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	135	251	7	123	41	5
Future Volume (veh/h)	135	251	7	123	41	5
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	1900	1900
Adj Flow Rate, veh/h	147	273	8	134	45	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	609	516	23	1001	112	12
Arrive On Green	0.33	0.33	0.01	0.54	0.07	0.07
Sat Flow, veh/h	1870	1585	1781	1870	1554	173
Grp Volume(v), veh/h	147	273	8	134	51	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1762	0
Q Serve(g_s), s	1.4	3.4	0.1	0.9	0.7	0.0
Cycle Q Clear(g_c), s	1.4	3.4	0.1	0.9	0.7	0.0
Prop In Lane		1.00	1.00		0.88	0.10
Lane Grp Cap(c), veh/h	609	516	23	1001	127	0
V/C Ratio(X)	0.24	0.53	0.35	0.13	0.40	0.00
Avail Cap(c_a), veh/h	2368	2007	543	1977	1126	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	5.9	6.6	11.7	2.8	10.6	0.0
Incr Delay (d2), s/veh	0.2	0.8	8.6	0.1	2.0	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	0.7	0.1	0.0	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.1	7.4	20.3	2.8	12.7	0.0
LnGrp LOS	A	A	C	A	B	A
Approach Vol, veh/h	420			142	51	
Approach Delay, s/veh	7.0			3.8	12.7	
Approach LOS	A			A	B	

Timer - Assigned Phs	2	3	4	8
Phs Duration (G+Y+Rc), s	6.4	5.0	12.5	17.5
Change Period (Y+Rc), s	* 4.7	* 4.7	* 4.7	* 4.7
Max Green Setting (Gmax), s	* 15	* 7.3	* 30	* 25
Max Q Clear Time (g_c+I1), s	2.7	2.1	5.4	2.9
Green Ext Time (p_c), s	0.1	0.0	1.8	0.7

Intersection Summary	
HCM 6th Ctrl Delay	6.7
HCM 6th LOS	A

Notes

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

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	50	72	80	63	24	54
Future Vol, veh/h	50	72	80	63	24	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	78	87	68	26	59
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	8.2	7.9	7.8
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	41%	0%	100%	0%
Vol Thru, %	59%	56%	0%	0%
Vol Right, %	0%	44%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	122	143	24	54
LT Vol	50	0	24	0
Through Vol	72	80	0	0
RT Vol	0	63	0	54
Lane Flow Rate	133	155	26	59
Geometry Grp	2	2	7	7
Degree of Util (X)	0.162	0.173	0.041	0.073
Departure Headway (Hd)	4.385	4.017	5.66	4.454
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	824	895	635	806
Service Time	2.385	2.028	3.375	2.169
HCM Lane V/C Ratio	0.161	0.173	0.041	0.073
HCM Control Delay	8.2	7.9	8.6	7.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.6	0.1	0.2

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	28	167	116	82	73	43
Future Vol, veh/h	28	167	116	82	73	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	182	126	89	79	47
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8.7	9.7	8.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	59%	14%	0%	0%
Vol Thru, %	41%	0%	100%	0%
Vol Right, %	0%	86%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	198	195	73	43
LT Vol	116	28	0	0
Through Vol	82	0	73	0
RT Vol	0	167	0	43
Lane Flow Rate	215	212	79	47
Geometry Grp	5	2	7	7
Degree of Util (X)	0.285	0.251	0.115	0.058
Departure Headway (Hd)	4.77	4.261	5.198	4.493
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	753	844	689	795
Service Time	2.806	2.287	2.938	2.232
HCM Lane V/C Ratio	0.286	0.251	0.115	0.059
HCM Control Delay	9.7	8.7	8.6	7.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.2	1	0.4	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	30	79	283	127	209	112
Future Volume (veh/h)	30	79	283	127	209	112
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	33	86	308	138	227	122
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	172	423	486	411	303	1075
Arrive On Green	0.10	0.10	0.27	0.27	0.17	0.59
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	33	86	308	138	227	122
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	0.6	1.5	5.1	2.5	4.2	1.0
Cycle Q Clear(g_c), s	0.6	1.5	5.1	2.5	4.2	1.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	172	423	486	411	303	1075
V/C Ratio(X)	0.19	0.20	0.63	0.34	0.75	0.11
Avail Cap(c_a), veh/h	715	906	1609	1363	1010	2621
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	1.00
Uniform Delay (d), s/veh	14.2	9.6	11.1	10.1	13.4	3.1
Incr Delay (d2), s/veh	0.5	0.2	1.4	0.5	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	0.4	1.5	0.6	1.4	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.7	9.8	12.5	10.6	17.2	3.1
LnGrp LOS	B	A	B	B	B	A
Approach Vol, veh/h	119		446			349
Approach Delay, s/veh	11.2		11.9			12.3
Approach LOS	B		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	11.1	14.9			26.0	8.3
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	6.2	7.1			3.0	3.5
Green Ext Time (p_c), s	0.5	2.0			0.6	0.2

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

1: Tinloy St /Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.0	0.1
Total Del/Veh (s)	3.5	14.2	4.2	6.7

2: SR 49 On-Ramp/Tinloy St & Auburn 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)	3.8	6.1	12.9	7.2

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.4	2.1	1.0
Total Del/Veh (s)	14.2	4.3	7.5	7.1	6.1

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.9	2.9	0.9
Total Del/Veh (s)	4.5	9.1	20.6	38.5	17.1

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.3	3.7	19.7	8.3

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.3	1.5	0.0	0.2
Total Del/Veh (s)	5.9	8.9	10.4	1.0	5.3

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.4	2.1	1.3
Total Del/Veh (s)	12.7	14.0	5.8	8.9

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.9	0.0	0.1	0.3
Total Del/Veh (s)	6.7	4.8	6.6	5.6

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.1
Total Del/Veh (s)	5.7	7.9	0.5	4.1

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

Cumulative 0630-0730 AM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	13	3.0	0.092	4.9	LOS A	0.4	9.6	0.48	0.38	0.48	34.8
8	T1	21	3.0	0.092	4.9	LOS A	0.4	9.6	0.48	0.38	0.48	34.7
18	R2	48	3.0	0.092	4.9	LOS A	0.4	9.6	0.48	0.38	0.48	33.7
Approach		82	3.0	0.092	4.9	LOS A	0.4	9.6	0.48	0.38	0.48	34.1
East: Idaho Maryland Rd												
1	L2	122	3.0	0.107	4.1	LOS A	0.4	11.0	0.33	0.21	0.33	32.9
6	T1	65	3.0	0.159	4.6	LOS A	0.7	17.0	0.35	0.23	0.35	35.4
16	R2	116	3.0	0.159	4.6	LOS A	0.7	17.0	0.35	0.23	0.35	34.2
Approach		303	3.0	0.159	4.4	LOS A	0.7	17.0	0.34	0.22	0.34	33.9
North: Main St												
7	L2	77	3.0	0.208	5.0	LOS A	0.9	22.1	0.34	0.22	0.34	34.4
4	T1	165	3.0	0.208	5.0	LOS A	0.9	22.1	0.34	0.22	0.34	34.3
14	R2	78	3.0	0.048	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		319	3.0	0.208	3.8	LOS A	0.9	22.1	0.25	0.17	0.25	35.0
West: Main St												
5	L2	173	3.0	0.338	7.1	LOS A	1.5	38.5	0.50	0.43	0.50	32.8
2	T1	142	3.0	0.338	7.1	LOS A	1.5	38.5	0.50	0.43	0.50	32.7
12	R2	25	3.0	0.338	7.1	LOS A	1.5	38.5	0.50	0.43	0.50	31.8
Approach		339	3.0	0.338	7.1	LOS A	1.5	38.5	0.50	0.43	0.50	32.7
All Vehicles		1043	3.0	0.338	5.1	LOS A	1.5	38.5	0.38	0.28	0.38	33.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection	
Intersection Delay, s/veh	18.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	378	5	0	0	0	0	103	170	168	360	0
Future Vol, veh/h	62	378	5	0	0	0	0	103	170	168	360	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	67	411	5	0	0	0	0	112	185	183	391	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	16.2	16.7	20.9
HCM LOS	C	C	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	25%	0%	100%	0%
Vol Thru, %	38%	75%	97%	0%	100%
Vol Right, %	62%	0%	3%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	273	251	194	168	360
LT Vol	0	62	0	168	0
Through Vol	103	189	189	0	360
RT Vol	170	0	5	0	0
Lane Flow Rate	297	273	211	183	391
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.533	0.535	0.405	0.359	0.714
Departure Headway (Hd)	6.462	7.056	6.912	7.074	6.565
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	555	510	519	508	548
Service Time	4.528	4.822	4.678	4.842	4.333
HCM Lane V/C Ratio	0.535	0.535	0.407	0.36	0.714
HCM Control Delay	16.7	17.7	14.3	13.8	24.2
HCM Lane LOS	C	C	B	B	C
HCM 95th-tile Q	3.1	3.1	1.9	1.6	5.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	342	50	70	666	180	259
Future Volume (veh/h)	342	50	70	666	180	259
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	364	53	74	709	191	276
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	448	65	100	1004	303	752
Arrive On Green	0.28	0.28	0.30	0.30	0.17	0.17
Sat Flow, veh/h	1596	232	328	3396	1781	1585
Grp Volume(v), veh/h	0	417	418	365	191	276
Grp Sat Flow(s),veh/h/ln	0	1829	1854	1777	1781	1585
Q Serve(g_s), s	0.0	12.2	11.7	10.3	5.7	6.4
Cycle Q Clear(g_c), s	0.0	12.2	11.7	10.3	5.7	6.4
Prop In Lane		0.13	0.18		1.00	1.00
Lane Grp Cap(c), veh/h	0	513	564	540	303	752
V/C Ratio(X)	0.00	0.81	0.74	0.67	0.63	0.37
Avail Cap(c_a), veh/h	0	804	815	781	783	1179
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	19.3	18.0	17.5	22.2	9.6
Incr Delay (d2), s/veh	0.0	3.6	2.1	1.5	2.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.2	4.8	4.0	2.4	3.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	22.9	20.1	19.0	24.4	9.9
LnGrp LOS	A	C	C	B	C	A
Approach Vol, veh/h	417			783	467	
Approach Delay, s/veh	22.9			19.6	15.8	
Approach LOS	C			B	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	14.5	20.9	22.2
Change Period (Y+Rc), s	* 4.7	* 4.7	4.7
Max Green Setting (Gmax), s	* 25	* 25	25.3
Max Q Clear Time (g_c+I1), s	8.4	14.2	13.7
Green Ext Time (p_c), s	1.4	2.0	3.8

Intersection Summary	
HCM 6th Ctrl Delay	19.4
HCM 6th LOS	B

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)	500	94	35	634	124	57
Future Volume (veh/h)	500	94	35	634	124	57
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	1900	1900
Adj Flow Rate, veh/h	543	102	38	689	135	62
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	845	158	54	1028	177	81
Arrive On Green	0.28	0.28	0.30	0.30	0.15	0.15
Sat Flow, veh/h	3081	559	182	3550	1169	537
Grp Volume(v), veh/h	322	323	389	338	198	0
Grp Sat Flow(s),veh/h/ln	1777	1770	1861	1777	1715	0
Q Serve(g_s), s	8.3	8.3	9.7	8.6	5.8	0.0
Cycle Q Clear(g_c), s	8.3	8.3	9.7	8.6	5.8	0.0
Prop In Lane		0.32	0.10		0.68	0.31
Lane Grp Cap(c), veh/h	503	501	554	529	259	0
V/C Ratio(X)	0.64	0.64	0.70	0.64	0.76	0.00
Avail Cap(c_a), veh/h	1374	1368	904	863	309	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	16.4	16.4	16.3	15.9	21.2	0.0
Incr Delay (d2), s/veh	1.4	1.4	1.6	1.3	9.1	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	3.1	3.2	3.8	3.2	2.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.7	17.8	17.9	17.2	30.3	0.0
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	645			727	198	
Approach Delay, s/veh	17.8			17.6	30.3	
Approach LOS	B			B	C	

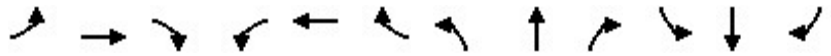
Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	12.5	19.4	20.2
Change Period (Y+Rc), s	4.6	* 4.7	4.7
Max Green Setting (Gmax), s	9.4	* 40	25.3
Max Q Clear Time (g_c+I1), s	7.8	10.3	11.7
Green Ext Time (p_c), s	0.1	4.4	3.8

Intersection Summary	
HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* 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)	3	65	217	32	31	69	173	571	70	137	477	14
Future Volume (veh/h)	3	65	217	32	31	69	173	571	70	137	477	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	69	231	34	33	73	184	607	74	146	507	15
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	11	242	417	72	69	123	228	662	81	168	1310	39
Arrive On Green	0.14	0.14	0.14	0.08	0.08	0.08	0.13	0.41	0.41	0.09	0.37	0.37
Sat Flow, veh/h	78	1789	1585	926	898	1585	1781	1635	199	1781	3524	104
Grp Volume(v), veh/h	72	0	231	67	0	73	184	0	681	146	255	267
Grp Sat Flow(s),veh/h/ln	1866	0	1585	1824	0	1585	1781	0	1834	1781	1777	1852
Q Serve(g_s), s	2.5	0.0	9.2	2.6	0.0	3.3	7.3	0.0	25.7	5.9	7.7	7.7
Cycle Q Clear(g_c), s	2.5	0.0	9.2	2.6	0.0	3.3	7.3	0.0	25.7	5.9	7.7	7.7
Prop In Lane	0.04		1.00	0.51		1.00	1.00		0.11	1.00		0.06
Lane Grp Cap(c), veh/h	253	0	417	141	0	123	228	0	743	168	660	688
V/C Ratio(X)	0.28	0.00	0.55	0.47	0.00	0.60	0.81	0.00	0.92	0.87	0.39	0.39
Avail Cap(c_a), veh/h	253	0	417	372	0	323	363	0	811	168	660	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.4	0.0	23.2	32.3	0.0	32.6	31.0	0.0	20.6	32.6	16.8	16.8
Incr Delay (d2), s/veh	0.6	0.0	1.6	2.5	0.0	4.6	7.0	0.0	14.4	35.0	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	3.4	1.2	0.0	1.4	3.5	0.0	12.9	4.1	3.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.0	0.0	24.8	34.7	0.0	37.1	37.9	0.0	34.9	67.6	17.2	17.2
LnGrp LOS	C	A	C	C	A	D	D	A	C	E	B	B
Approach Vol, veh/h		303			140			865			668	
Approach Delay, s/veh		25.8			36.0			35.6			28.2	
Approach LOS		C			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	35.3		15.0	14.4	32.8		10.7
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1
Max Green Setting (Gmax), s	6.9	32.3		9.9	14.9	24.3		14.9
Max Q Clear Time (g_c+I1), s	7.7	27.7		11.2	9.3	9.7		5.3
Green Ext Time (p_c), s	0.0	1.9		0.0	0.2	2.7		0.3

Intersection Summary	
HCM 6th Ctrl Delay	31.6
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	141	118	49	648	638	70
Future Vol, veh/h	141	118	49	648	638	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	145	122	51	668	658	72

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1464	365	730	0	-	0
Stage 1	694	-	-	-	-	-
Stage 2	770	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	~ 130	633	872	-	-	-
Stage 1	458	-	-	-	-	-
Stage 2	456	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 122	633	872	-	-	-
Mov Cap-2 Maneuver	319	-	-	-	-	-
Stage 1	431	-	-	-	-	-
Stage 2	456	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.3	0.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	872	-	319	633	-	-
HCM Lane V/C Ratio	0.058	-	0.456	0.192	-	-
HCM Control Delay (s)	9.4	-	25.4	12	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.2	-	2.3	0.7	-	-

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

Intersection	
Intersection Delay, s/veh	23.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	33	10	16	25	77	8	349	23	129	455	62
Future Vol, veh/h	28	33	10	16	25	77	8	349	23	129	455	62
Peak Hour Factor	0.94	0.90	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	37	11	17	27	82	9	371	24	137	484	66
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	11.3	11.4	19.9	29.6
HCM LOS	B	B	C	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	39%	14%	100%	0%
Vol Thru, %	0%	94%	46%	21%	0%	88%
Vol Right, %	0%	6%	14%	65%	0%	12%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	8	372	71	118	129	517
LT Vol	8	0	28	16	129	0
Through Vol	0	349	33	25	0	455
RT Vol	0	23	10	77	0	62
Lane Flow Rate	9	396	77	126	137	550
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.016	0.665	0.149	0.224	0.239	0.866
Departure Headway (Hd)	6.603	6.051	6.946	6.427	6.26	5.668
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	540	594	513	555	572	638
Service Time	4.365	3.813	5.035	4.508	4.011	3.419
HCM Lane V/C Ratio	0.017	0.667	0.15	0.227	0.24	0.862
HCM Control Delay	9.5	20.1	11.3	11.4	11	34.3
HCM Lane LOS	A	C	B	B	B	D
HCM 95th-tile Q	0	5	0.5	0.9	0.9	10

Intersection	
Int Delay, s/veh	22.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	90	216	191	285	344	114
Future Vol, veh/h	90	216	191	285	344	114
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	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	98	235	208	310	374	124

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	208	0	-	0	639	208
Stage 1	-	-	-	-	208	-
Stage 2	-	-	-	-	431	-
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	1363	-	-	0	440	832
Stage 1	-	-	-	0	827	-
Stage 2	-	-	-	0	655	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1363	-	-	-	408	832
Mov Cap-2 Maneuver	-	-	-	-	408	-
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	655	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	46.2
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1363	-	-	408	832
HCM Lane V/C Ratio	0.072	-	-	0.916	0.149
HCM Control Delay (s)	7.8	-	-	58.2	10.1
HCM Lane LOS	A	-	-	F	B
HCM 95th %tile Q(veh)	0.2	-	-	9.9	0.5

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	380	482	0
Future Vol, veh/h	0	0	0	380	482	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	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	0	0	0	413	524	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	937	524	524	0	-	0
Stage 1	524	-	-	-	-	-
Stage 2	413	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	294	553	1043	-	-	-
Stage 1	594	-	-	-	-	-
Stage 2	668	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	294	553	1043	-	-	-
Mov Cap-2 Maneuver	489	-	-	-	-	-
Stage 1	594	-	-	-	-	-
Stage 2	668	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1043	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	70	0	0	90	0	0
Future Vol, veh/h	70	0	0	90	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	76	0	0	98	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	76	0	174	76
Stage 1	-	-	-	-	76	-
Stage 2	-	-	-	-	98	-
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	-	-	1523	-	816	985
Stage 1	-	-	-	-	947	-
Stage 2	-	-	-	-	926	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1523	-	816	985
Mov Cap-2 Maneuver	-	-	-	-	816	-
Stage 1	-	-	-	-	947	-
Stage 2	-	-	-	-	926	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1523	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	140	0	0	238	0	0	0	0	1	0	0
Future Vol, veh/h	5	140	0	0	238	0	0	0	0	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	152	0	0	259	0	0	0	0	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	259	0	0	152	0	0	443	443	152	443	443	259
Stage 1	-	-	-	-	-	-	184	184	-	259	259	-
Stage 2	-	-	-	-	-	-	259	259	-	184	184	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1306	-	-	1429	-	-	525	509	894	525	509	780
Stage 1	-	-	-	-	-	-	818	747	-	746	694	-
Stage 2	-	-	-	-	-	-	746	694	-	818	747	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1306	-	-	1429	-	-	520	502	894	520	502	780
Mov Cap-2 Maneuver	-	-	-	-	-	-	520	502	-	520	502	-
Stage 1	-	-	-	-	-	-	807	737	-	736	694	-
Stage 2	-	-	-	-	-	-	746	694	-	807	737	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0	0	11.9
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1306	-	-	1429	-	-	520
HCM Lane V/C Ratio	-	0.012	-	-	-	-	-	0.002
HCM Control Delay (s)	0	7.8	0	-	0	-	-	11.9
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	322	146	13	369	332	37
Future Volume (veh/h)	322	146	13	369	332	37
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	1900	1900
Adj Flow Rate, veh/h	350	159	14	401	361	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	550	466	39	838	454	50
Arrive On Green	0.29	0.29	0.02	0.45	0.29	0.29
Sat Flow, veh/h	1870	1585	1781	1870	1580	175
Grp Volume(v), veh/h	350	159	14	401	402	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1760	0
Q Serve(g_s), s	5.8	2.8	0.3	5.3	7.5	0.0
Cycle Q Clear(g_c), s	5.8	2.8	0.3	5.3	7.5	0.0
Prop In Lane		1.00	1.00		0.90	0.10
Lane Grp Cap(c), veh/h	550	466	39	838	505	0
V/C Ratio(X)	0.64	0.34	0.36	0.48	0.80	0.00
Avail Cap(c_a), veh/h	1596	1353	366	1333	758	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	10.9	9.8	17.1	6.9	11.7	0.0
Incr Delay (d2), s/veh	1.2	0.4	5.5	0.4	3.5	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	1.9	0.8	0.2	1.4	2.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.1	10.3	22.7	7.3	15.2	0.0
LnGrp LOS	B	B	C	A	B	A
Approach Vol, veh/h	509			415	402	
Approach Delay, s/veh	11.5			7.8	15.2	
Approach LOS	B			A	B	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		14.9	5.5	15.1		20.6
Change Period (Y+Rc), s		* 4.7	* 4.7	* 4.7		* 4.7
Max Green Setting (Gmax), s		* 15	* 7.3	* 30		* 25
Max Q Clear Time (g_c+I1), s		9.5	2.3	7.8		7.3
Green Ext Time (p_c), s		0.7	0.0	2.7		2.3

Intersection Summary	
HCM 6th Ctrl Delay	11.5
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	14.2
Intersection LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	244	114	167	92	158	230
Future Vol, veh/h	244	114	167	92	158	230
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	265	124	182	100	172	250
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	17.2	12.7	12.4
HCM LOS	C	B	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	68%	0%	100%	0%
Vol Thru, %	32%	64%	0%	0%
Vol Right, %	0%	36%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	358	259	158	230
LT Vol	244	0	158	0
Through Vol	114	167	0	0
RT Vol	0	92	0	230
Lane Flow Rate	389	282	172	250
Geometry Grp	2	2	7	7
Degree of Util (X)	0.611	0.43	0.327	0.392
Departure Headway (Hd)	5.656	5.496	6.862	5.643
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	638	653	524	638
Service Time	3.697	3.541	4.606	3.386
HCM Lane V/C Ratio	0.61	0.432	0.328	0.392
HCM Control Delay	17.2	12.7	12.9	12
HCM Lane LOS	C	B	B	B
HCM 95th-tile Q	4.2	2.2	1.4	1.9

Intersection	
Intersection Delay, s/veh	213.1
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	133	441	424	418	379	139
Future Vol, veh/h	133	441	424	418	379	139
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	145	479	461	454	412	151
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	108	390.9	40.4
HCM LOS	F	F	E

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	50%	23%	0%	0%
Vol Thru, %	50%	0%	100%	0%
Vol Right, %	0%	77%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	842	574	379	139
LT Vol	424	133	0	0
Through Vol	418	0	379	0
RT Vol	0	441	0	139
Lane Flow Rate	915	624	412	151
Geometry Grp	5	2	7	7
Degree of Util (X)	1.809	1.127	0.872	0.29
Departure Headway (Hd)	7.586	7.705	9.231	8.498
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	485	474	395	426
Service Time	5.586	5.705	6.931	6.198
HCM Lane V/C Ratio	1.887	1.316	1.043	0.354
HCM Control Delay	390.9	108	49.9	14.6
HCM Lane LOS	F	F	E	B
HCM 95th-tile Q	54	18.2	8.6	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	183	349	375	78	182	450
Future Volume (veh/h)	183	349	375	78	182	450
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	199	379	408	85	198	489
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	429	610	531	450	256	986
Arrive On Green	0.25	0.25	0.29	0.29	0.15	0.54
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	199	379	408	85	198	489
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	4.9	9.9	10.2	2.1	5.5	8.4
Cycle Q Clear(g_c), s	4.9	9.9	10.2	2.1	5.5	8.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	429	610	531	450	256	986
V/C Ratio(X)	0.46	0.62	0.77	0.19	0.77	0.50
Avail Cap(c_a), veh/h	489	663	1099	931	690	1790
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	1.00
Uniform Delay (d), s/veh	16.1	12.2	16.3	13.4	20.6	7.3
Incr Delay (d2), s/veh	0.8	1.6	2.4	0.2	4.9	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	3.0	3.7	0.6	2.2	2.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.8	13.8	18.6	13.6	25.5	7.6
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	578		493			687
Approach Delay, s/veh	14.8		17.8			12.8
Approach LOS	B		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.5	20.4			32.9	17.3
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	7.5	12.2			10.4	11.9
Green Ext Time (p_c), s	0.4	2.3			3.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	14.8
HCM 6th LOS	B

1: Tinloy St /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)	11.3	14.8	5.8	9.0

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	1.0	0.9	0.6
Total Del/Veh (s)	5.3	8.6	16.5	9.9

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.7	2.1	1.2
Total Del/Veh (s)	20.6	9.9	16.6	16.7	14.0

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.5	2.8	0.6
Total Del/Veh (s)	12.6	13.2	17.1	33.1	16.9

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	10.6	9.8	29.4	14.9

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.6	1.6	0.0	0.6
Total Del/Veh (s)	20.2	38.5	38.9	13.9	28.2

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.8	2.7	1.0
Total Del/Veh (s)	13.3	14.1	18.2	14.8

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.6	0.0	0.2	0.7
Total Del/Veh (s)	21.1	13.4	20.5	17.6

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.4	0.3
Total Del/Veh (s)	12.4	10.0	1.9	8.0

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

Cumulative 1530-1630 PM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	57	3.0	0.275	7.4	LOS A	1.2	31.8	0.59	0.54	0.59	33.3
8	T1	63	3.0	0.275	7.4	LOS A	1.2	31.8	0.59	0.54	0.59	33.2
18	R2	106	3.0	0.275	7.4	LOS A	1.2	31.8	0.59	0.54	0.59	32.3
Approach		226	3.0	0.275	7.4	LOS A	1.2	31.8	0.59	0.54	0.59	32.8
East: Idaho Maryland Rd												
1	L2	367	3.0	0.364	7.4	LOS A	1.8	45.2	0.52	0.44	0.52	31.4
6	T1	261	3.0	0.461	8.9	LOS A	2.6	65.6	0.57	0.50	0.59	33.2
16	R2	206	3.0	0.461	8.9	LOS A	2.6	65.6	0.57	0.50	0.59	32.2
Approach		834	3.0	0.461	8.2	LOS A	2.6	65.6	0.55	0.48	0.56	32.1
North: Main St												
7	L2	115	3.0	0.475	11.4	LOS B	2.7	69.8	0.68	0.78	0.99	31.4
4	T1	245	3.0	0.475	11.4	LOS B	2.7	69.8	0.68	0.78	0.99	31.3
14	R2	333	3.0	0.205	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		693	3.0	0.475	5.9	LOS A	2.7	69.8	0.35	0.41	0.51	33.8
West: Main St												
5	L2	215	3.0	0.532	13.1	LOS B	3.4	86.2	0.72	0.86	1.14	30.1
2	T1	135	3.0	0.532	13.1	LOS B	3.4	86.2	0.72	0.86	1.14	30.1
12	R2	39	3.0	0.532	13.1	LOS B	3.4	86.2	0.72	0.86	1.14	29.3
Approach		389	3.0	0.532	13.1	LOS B	3.4	86.2	0.72	0.86	1.14	30.0
All Vehicles		2142	3.0	0.532	8.3	LOS A	3.4	86.2	0.52	0.53	0.65	32.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	208	4	0	0	0	0	65	66	118	235	0
Future Vol, veh/h	37	208	4	0	0	0	0	65	66	118	235	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	226	4	0	0	0	0	71	72	128	255	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	10.5	10	11.2
HCM LOS	B	A	B

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	26%	0%	100%	0%
Vol Thru, %	50%	74%	96%	0%	100%
Vol Right, %	50%	0%	4%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	131	141	108	118	235
LT Vol	0	37	0	118	0
Through Vol	65	104	104	0	235
RT Vol	66	0	4	0	0
Lane Flow Rate	142	153	117	128	255
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.215	0.254	0.19	0.212	0.386
Departure Headway (Hd)	5.441	5.977	5.819	5.948	5.444
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	654	596	612	599	656
Service Time	3.529	3.766	3.608	3.725	3.221
HCM Lane V/C Ratio	0.217	0.257	0.191	0.214	0.389
HCM Control Delay	10	10.8	10	10.3	11.6
HCM Lane LOS	A	B	A	B	B
HCM 95th-tile Q	0.8	1	0.7	0.8	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	130	28	23	284	73	107
Future Volume (veh/h)	130	28	23	284	73	107
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	141	30	25	309	79	116
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	277	59	57	740	345	655
Arrive On Green	0.18	0.18	0.22	0.22	0.19	0.19
Sat Flow, veh/h	1495	318	260	3468	1781	1585
Grp Volume(v), veh/h	0	171	179	155	79	116
Grp Sat Flow(s),veh/h/ln	0	1813	1857	1777	1781	1585
Q Serve(g_s), s	0.0	3.0	2.9	2.6	1.3	1.6
Cycle Q Clear(g_c), s	0.0	3.0	2.9	2.6	1.3	1.6
Prop In Lane		0.18	0.14		1.00	1.00
Lane Grp Cap(c), veh/h	0	335	407	390	345	655
V/C Ratio(X)	0.00	0.51	0.44	0.40	0.23	0.18
Avail Cap(c_a), veh/h	0	1307	1339	1281	1285	1491
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	12.9	11.8	11.7	11.9	6.5
Incr Delay (d2), s/veh	0.0	1.2	0.7	0.7	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.1	1.0	0.9	0.4	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	14.1	12.6	12.4	12.3	6.6
LnGrp LOS	A	B	B	B	B	A
Approach Vol, veh/h	171			334	195	
Approach Delay, s/veh	14.1			12.5	8.9	
Approach LOS	B			B	A	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	11.5	11.2	12.4
Change Period (Y+Rc), s	* 4.7	* 4.7	4.7
Max Green Setting (Gmax), s	* 25	* 25	25.3
Max Q Clear Time (g_c+I1), s	3.6	5.0	4.9
Green Ext Time (p_c), s	0.6	0.9	1.8

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.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	220	9	2	265	31	16
Future Volume (veh/h)	220	9	2	265	31	16
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	1900	1900
Adj Flow Rate, veh/h	239	10	2	288	34	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	727	30	5	782	193	97
Arrive On Green	0.21	0.21	0.22	0.22	0.17	0.17
Sat Flow, veh/h	3570	145	24	3715	1120	560
Grp Volume(v), veh/h	122	127	156	134	52	0
Grp Sat Flow(s),veh/h/ln	1777	1844	1869	1777	1714	0
Q Serve(g_s), s	2.0	2.0	2.5	2.2	0.9	0.0
Cycle Q Clear(g_c), s	2.0	2.0	2.5	2.2	0.9	0.0
Prop In Lane		0.08	0.01		0.65	0.33
Lane Grp Cap(c), veh/h	372	386	404	384	295	0
V/C Ratio(X)	0.33	0.33	0.39	0.35	0.18	0.00
Avail Cap(c_a), veh/h	2058	2136	1359	1292	463	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	11.7	11.7	11.7	11.6	12.3	0.0
Incr Delay (d2), s/veh	0.5	0.5	0.6	0.5	0.3	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	0.7	0.7	0.9	0.7	0.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.2	12.2	12.3	12.1	12.6	0.0
LnGrp LOS	B	B	B	B	B	A
Approach Vol, veh/h	249			290	52	
Approach Delay, s/veh	12.2			12.2	12.6	
Approach LOS	B			B	B	

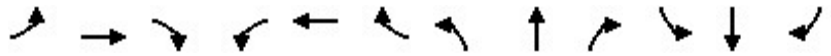
Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	10.6	12.0	12.2
Change Period (Y+Rc), s	4.6	* 4.7	4.7
Max Green Setting (Gmax), s	9.4	* 40	25.3
Max Q Clear Time (g_c+I1), s	2.9	4.0	4.5
Green Ext Time (p_c), s	0.0	1.5	1.6

Intersection Summary	
HCM 6th Ctrl Delay	12.2
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* 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)	1	34	116	26	16	50	61	230	36	100	288	1
Future Volume (veh/h)	1	34	116	26	16	50	61	230	36	100	288	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	37	126	28	17	54	66	250	39	109	313	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	6	214	306	108	65	151	134	362	56	149	862	3
Arrive On Green	0.12	0.12	0.12	0.10	0.10	0.10	0.08	0.23	0.23	0.08	0.24	0.24
Sat Flow, veh/h	49	1819	1585	1129	685	1585	1781	1580	246	1781	3634	12
Grp Volume(v), veh/h	38	0	126	45	0	54	66	0	289	109	153	161
Grp Sat Flow(s),veh/h/ln	1868	0	1585	1814	0	1585	1781	0	1826	1781	1777	1868
Q Serve(g_s), s	0.8	0.0	3.1	1.0	0.0	1.4	1.6	0.0	6.4	2.6	3.2	3.2
Cycle Q Clear(g_c), s	0.8	0.0	3.1	1.0	0.0	1.4	1.6	0.0	6.4	2.6	3.2	3.2
Prop In Lane	0.03		1.00	0.62		1.00	1.00		0.13	1.00		0.01
Lane Grp Cap(c), veh/h	220	0	306	173	0	151	134	0	418	149	421	443
V/C Ratio(X)	0.17	0.00	0.41	0.26	0.00	0.36	0.49	0.00	0.69	0.73	0.36	0.36
Avail Cap(c_a), veh/h	418	0	474	611	0	534	600	0	1333	278	976	1026
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.6	0.0	15.7	18.6	0.0	18.7	19.6	0.0	15.6	19.8	14.1	14.1
Incr Delay (d2), s/veh	0.4	0.0	0.9	0.8	0.0	1.4	2.8	0.0	2.0	6.8	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.0	0.4	0.0	0.5	0.7	0.0	2.5	1.3	1.1	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.0	0.0	16.5	19.4	0.0	20.2	22.4	0.0	17.7	26.6	14.6	14.6
LnGrp LOS	B	A	B	B	A	C	C	A	B	C	B	B
Approach Vol, veh/h		164			99			355			423	
Approach Delay, s/veh		16.9			19.8			18.6			17.7	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.8	15.8		10.3	8.4	16.2		9.3
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1
Max Green Setting (Gmax), s	6.9	32.3		9.9	14.9	24.3		14.9
Max Q Clear Time (g_c+I1), s	4.6	8.4		5.1	3.6	5.2		3.4
Green Ext Time (p_c), s	0.0	1.7		0.2	0.1	1.7		0.2

Intersection Summary		
HCM 6th Ctrl Delay		18.1
HCM 6th LOS		B

Notes

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

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	34	57	10	264	400	28
Future Vol, veh/h	34	57	10	264	400	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	62	11	287	435	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	759	233	465	0	-	0
Stage 1	450	-	-	-	-	-
Stage 2	309	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	358	770	1095	-	-	-
Stage 1	610	-	-	-	-	-
Stage 2	744	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	354	770	1095	-	-	-
Mov Cap-2 Maneuver	526	-	-	-	-	-
Stage 1	604	-	-	-	-	-
Stage 2	744	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1095	-	526	770	-	-
HCM Lane V/C Ratio	0.01	-	0.07	0.08	-	-
HCM Control Delay (s)	8.3	-	12.4	10.1	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	0.3	-	-

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	25	2	11	15	40	3	182	11	90	287	41
Future Vol, veh/h	14	25	2	11	15	40	3	182	11	90	287	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	27	2	12	16	43	3	198	12	98	312	45
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	9.1	8.9	10.3	11.7
HCM LOS	A	A	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	34%	17%	100%	0%
Vol Thru, %	0%	94%	61%	23%	0%	88%
Vol Right, %	0%	6%	5%	61%	0%	12%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	3	193	41	66	90	328
LT Vol	3	0	14	11	90	0
Through Vol	0	182	25	15	0	287
RT Vol	0	11	2	40	0	41
Lane Flow Rate	3	210	45	72	98	357
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.005	0.304	0.069	0.104	0.15	0.489
Departure Headway (Hd)	5.767	5.223	5.611	5.196	5.532	4.941
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	618	686	634	686	647	727
Service Time	3.523	2.979	3.682	3.259	3.278	2.688
HCM Lane V/C Ratio	0.005	0.306	0.071	0.105	0.151	0.491
HCM Control Delay	8.6	10.3	9.1	8.9	9.3	12.4
HCM Lane LOS	A	B	A	A	A	B
HCM 95th-tile Q	0	1.3	0.2	0.3	0.5	2.7

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	141	81	164	237	46
Future Vol, veh/h	25	141	81	164	237	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	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	27	153	88	178	258	50

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	88	0	-	0	295	88
Stage 1	-	-	-	-	88	-
Stage 2	-	-	-	-	207	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1508	-	-	0	696	970
Stage 1	-	-	-	0	935	-
Stage 2	-	-	-	0	828	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	1508	-	-	-	683	970
Mov Cap-2 Maneuver	-	-	-	-	683	-
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	828	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	12.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1508	-	-	683	970
HCM Lane V/C Ratio	0.018	-	-	0.377	0.052
HCM Control Delay (s)	7.4	-	-	13.4	8.9
HCM Lane LOS	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	1.8	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	105	41	3	90	47	12
Future Volume (veh/h)	105	41	3	90	47	12
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	1900	1900
Adj Flow Rate, veh/h	114	45	3	98	51	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	473	401	9	807	302	77
Arrive On Green	0.25	0.25	0.00	0.43	0.22	0.22
Sat Flow, veh/h	1870	1585	1781	1870	1365	348
Grp Volume(v), veh/h	114	45	3	98	65	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1739	0
Q Serve(g_s), s	1.3	0.6	0.0	0.9	0.8	0.0
Cycle Q Clear(g_c), s	1.3	0.6	0.0	0.9	0.8	0.0
Prop In Lane		1.00	1.00		0.78	0.20
Lane Grp Cap(c), veh/h	473	401	9	807	385	0
V/C Ratio(X)	0.24	0.11	0.34	0.12	0.17	0.00
Avail Cap(c_a), veh/h	2093	1774	480	1748	983	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	8.1	7.8	13.4	4.6	8.5	0.0
Incr Delay (d2), s/veh	0.3	0.1	21.3	0.1	0.2	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	0.4	0.1	0.1	0.2	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.3	7.9	34.7	4.7	8.7	0.0
LnGrp LOS	A	A	C	A	A	A
Approach Vol, veh/h	159			101	65	
Approach Delay, s/veh	8.2			5.6	8.7	
Approach LOS	A			A	A	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		10.7	4.8	11.5		16.4
Change Period (Y+Rc), s		* 4.7	* 4.7	* 4.7		* 4.7
Max Green Setting (Gmax), s		* 15	* 7.3	* 30		* 25
Max Q Clear Time (g_c+I1), s		2.8	2.0	3.3		2.9
Green Ext Time (p_c), s		0.1	0.0	0.7		0.4

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

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	81	37	22	27	35	74
Future Vol, veh/h	81	37	22	27	35	74
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	88	40	24	29	38	80
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	8.2	7.3	7.8
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	69%	0%	100%	0%
Vol Thru, %	31%	45%	0%	0%
Vol Right, %	0%	55%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	118	49	35	74
LT Vol	81	0	35	0
Through Vol	37	22	0	0
RT Vol	0	27	0	74
Lane Flow Rate	128	53	38	80
Geometry Grp	2	2	7	7
Degree of Util (X)	0.154	0.06	0.058	0.095
Departure Headway (Hd)	4.413	4.022	5.449	4.245
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	818	895	661	849
Service Time	2.413	2.028	3.149	1.945
HCM Lane V/C Ratio	0.156	0.059	0.057	0.094
HCM Control Delay	8.2	7.3	8.5	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.2	0.2	0.3

Intersection	
Intersection Delay, s/veh	10.4
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	82	78	155	153	120	50
Future Vol, veh/h	82	78	155	153	120	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	89	85	168	166	130	54
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	9.6	11.7	8.8
HCM LOS	A	B	A

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	50%	51%	0%	0%
Vol Thru, %	50%	0%	100%	0%
Vol Right, %	0%	49%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	308	160	120	50
LT Vol	155	82	0	0
Through Vol	153	0	120	0
RT Vol	0	78	0	50
Lane Flow Rate	335	174	130	54
Geometry Grp	5	2	7	7
Degree of Util (X)	0.446	0.239	0.191	0.069
Departure Headway (Hd)	4.793	4.954	5.273	4.567
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	750	722	678	780
Service Time	2.84	3.009	3.026	2.32
HCM Lane V/C Ratio	0.447	0.241	0.192	0.069
HCM Control Delay	11.7	9.6	9.3	7.7
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	2.3	0.9	0.7	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	43	25	212	24	112	372
Future Volume (veh/h)	43	25	212	24	112	372
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	47	27	230	26	122	404
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	134	286	499	423	187	1015
Arrive On Green	0.08	0.08	0.27	0.27	0.11	0.56
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	47	27	230	26	122	404
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	0.7	0.4	3.1	0.4	2.0	3.7
Cycle Q Clear(g_c), s	0.7	0.4	3.1	0.4	2.0	3.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	134	286	499	423	187	1015
V/C Ratio(X)	0.35	0.09	0.46	0.06	0.65	0.40
Avail Cap(c_a), veh/h	841	915	1891	1603	1187	3081
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	1.00
Uniform Delay (d), s/veh	12.8	9.9	8.8	7.8	12.5	3.7
Incr Delay (d2), s/veh	1.5	0.1	0.7	0.1	3.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	0.7	0.1	0.7	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.3	10.0	9.5	7.9	16.3	3.9
LnGrp LOS	B	A	A	A	B	A
Approach Vol, veh/h	74		256			526
Approach Delay, s/veh	12.7		9.3			6.8
Approach LOS	B		A			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	8.2	13.8			22.0	7.2
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	4.0	5.1			5.7	2.7
Green Ext Time (p_c), s	0.2	1.2			2.4	0.1

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

1: Tinloy St /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	21.3	5.6	11.7

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.8	0.0	0.2
Total Del/Veh (s)	4.5	7.6	18.7	9.0

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.5	2.1	1.1
Total Del/Veh (s)	17.7	7.3	11.1	11.0	9.8

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.5	2.9	0.7
Total Del/Veh (s)	8.4	12.6	13.4	36.2	16.1

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.4	4.5	23.5	8.9

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.6	1.5	0.0	0.5
Total Del/Veh (s)	9.8	17.3	14.2	3.8	10.7

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.8	2.9	1.4
Total Del/Veh (s)	10.3	10.8	5.9	8.7

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.0	0.0	0.1	0.3
Total Del/Veh (s)	7.6	8.4	8.9	8.2

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.3	0.2
Total Del/Veh (s)	6.6	8.0	1.0	4.4

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

Cumulative 1830-1930 PM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	38	3.0	0.106	4.9	LOS A	0.4	11.3	0.46	0.35	0.46	34.2
8	T1	43	3.0	0.106	4.9	LOS A	0.4	11.3	0.46	0.35	0.46	34.1
18	R2	18	3.0	0.106	4.9	LOS A	0.4	11.3	0.46	0.35	0.46	33.2
Approach		99	3.0	0.106	4.9	LOS A	0.4	11.3	0.46	0.35	0.46	34.0
East: Idaho Maryland Rd												
1	L2	163	3.0	0.151	4.7	LOS A	0.6	15.8	0.38	0.27	0.38	32.7
6	T1	200	3.0	0.269	5.9	LOS A	1.2	31.5	0.43	0.32	0.43	34.7
16	R2	92	3.0	0.269	5.9	LOS A	1.2	31.5	0.43	0.32	0.43	33.6
Approach		455	3.0	0.269	5.4	LOS A	1.2	31.5	0.41	0.30	0.41	33.7
North: Main St												
7	L2	65	3.0	0.238	6.1	LOS A	1.0	24.6	0.48	0.41	0.48	33.9
4	T1	165	3.0	0.238	6.1	LOS A	1.0	24.6	0.48	0.41	0.48	33.9
14	R2	225	3.0	0.138	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		456	3.0	0.238	3.1	LOS A	1.0	24.6	0.24	0.21	0.24	35.4
West: Main St												
5	L2	176	3.0	0.312	6.9	LOS A	1.3	34.4	0.50	0.44	0.50	32.7
2	T1	106	3.0	0.312	6.9	LOS A	1.3	34.4	0.50	0.44	0.50	32.6
12	R2	23	3.0	0.312	6.9	LOS A	1.3	34.4	0.50	0.44	0.50	31.8
Approach		305	3.0	0.312	6.9	LOS A	1.3	34.4	0.50	0.44	0.50	32.6
All Vehicles		1314	3.0	0.312	4.9	LOS A	1.3	34.4	0.38	0.31	0.38	34.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	33.8
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	76	348	8	0	0	0	0	212	302	166	253	0
Future Vol, veh/h	76	348	8	0	0	0	0	212	302	166	253	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	83	378	9	0	0	0	0	230	328	180	275	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	17.7	61.4	16.6
HCM LOS	C	F	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	30%	0%	100%	0%
Vol Thru, %	41%	70%	96%	0%	100%
Vol Right, %	59%	0%	4%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	514	250	182	166	253
LT Vol	0	76	0	166	0
Through Vol	212	174	174	0	253
RT Vol	302	0	8	0	0
Lane Flow Rate	559	272	198	180	275
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.992	0.566	0.402	0.378	0.536
Departure Headway (Hd)	6.39	7.499	7.312	7.535	7.022
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	564	478	489	475	509
Service Time	4.467	5.286	5.099	5.335	4.822
HCM Lane V/C Ratio	0.991	0.569	0.405	0.379	0.54
HCM Control Delay	61.4	19.7	15	14.9	17.7
HCM Lane LOS	F	C	B	B	C
HCM 95th-tile Q	14.1	3.5	1.9	1.7	3.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	331	42	58	401	255	546
Future Volume (veh/h)	331	42	58	401	255	546
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	356	45	62	431	274	587
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	425	54	87	638	587	839
Arrive On Green	0.26	0.26	0.20	0.20	0.33	0.33
Sat Flow, veh/h	1628	206	435	3284	1781	1585
Grp Volume(v), veh/h	0	401	263	230	274	587
Grp Sat Flow(s),veh/h/ln	0	1833	1849	1777	1781	1585
Q Serve(g_s), s	0.0	13.9	9.0	8.0	8.2	18.6
Cycle Q Clear(g_c), s	0.0	13.9	9.0	8.0	8.2	18.6
Prop In Lane		0.11	0.24		1.00	1.00
Lane Grp Cap(c), veh/h	0	479	370	355	587	839
V/C Ratio(X)	0.00	0.84	0.71	0.65	0.47	0.70
Avail Cap(c_a), veh/h	0	689	694	667	669	912
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	23.5	25.1	24.8	17.9	11.8
Incr Delay (d2), s/veh	0.0	6.1	2.6	2.0	0.6	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.4	4.0	3.4	3.2	9.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	29.7	27.7	26.7	18.5	14.0
LnGrp LOS	A	C	C	C	B	B
Approach Vol, veh/h	401			493	861	
Approach Delay, s/veh	29.7			27.2	15.4	
Approach LOS	C			C	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	26.9	22.3	18.2
Change Period (Y+Rc), s	* 4.7	* 4.7	4.7
Max Green Setting (Gmax), s	* 25	* 25	25.3
Max Q Clear Time (g_c+I1), s	20.6	15.9	11.0
Green Ext Time (p_c), s	1.5	1.7	2.5

Intersection Summary	
HCM 6th Ctrl Delay	22.0
HCM 6th LOS	C

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)	724	139	26	392	84	30
Future Volume (veh/h)	724	139	26	392	84	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	1900	1900
Adj Flow Rate, veh/h	762	146	27	413	88	32
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	1172	224	44	711	127	46
Arrive On Green	0.39	0.39	0.21	0.21	0.10	0.10
Sat Flow, veh/h	3068	570	213	3517	1255	456
Grp Volume(v), veh/h	455	453	236	204	121	0
Grp Sat Flow(s),veh/h/ln	1777	1768	1860	1777	1725	0
Q Serve(g_s), s	9.8	9.8	5.4	4.9	3.2	0.0
Cycle Q Clear(g_c), s	9.8	9.8	5.4	4.9	3.2	0.0
Prop In Lane		0.32	0.11		0.73	0.26
Lane Grp Cap(c), veh/h	700	696	387	369	175	0
V/C Ratio(X)	0.65	0.65	0.61	0.55	0.69	0.00
Avail Cap(c_a), veh/h	1519	1512	998	954	381	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	11.6	11.6	16.9	16.7	20.5	0.0
Incr Delay (d2), s/veh	1.0	1.0	1.6	1.3	4.9	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	3.3	3.3	2.2	1.9	1.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.7	12.7	18.5	18.0	25.3	0.0
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	908			440	121	
Approach Delay, s/veh	12.7			18.3	25.3	
Approach LOS	B			B	C	

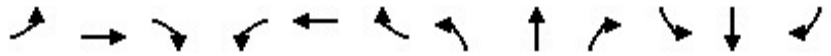
Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	9.4	23.3	14.5
Change Period (Y+Rc), s	4.6	* 4.7	4.7
Max Green Setting (Gmax), s	10.4	* 40	25.3
Max Q Clear Time (g_c+I1), s	5.2	11.8	7.4
Green Ext Time (p_c), s	0.1	6.7	2.4

Intersection Summary	
HCM 6th Ctrl Delay	15.4
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* 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	9	195	100	95	173	262	496	20	45	452	13
Future Volume (veh/h)	0	9	195	100	95	173	262	496	20	45	452	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	10	207	106	101	184	279	528	21	48	481	14
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	247	503	145	138	247	330	610	24	80	710	21
Arrive On Green	0.00	0.13	0.13	0.16	0.16	0.16	0.18	0.34	0.34	0.04	0.20	0.20
Sat Flow, veh/h	0	1870	1585	934	890	1585	1781	1787	71	1781	3526	103
Grp Volume(v), veh/h	0	10	207	207	0	184	279	0	549	48	242	253
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1824	0	1585	1781	0	1858	1781	1777	1852
Q Serve(g_s), s	0.0	0.3	6.6	7.0	0.0	7.1	9.8	0.0	17.8	1.7	8.1	8.1
Cycle Q Clear(g_c), s	0.0	0.3	6.6	7.0	0.0	7.1	9.8	0.0	17.8	1.7	8.1	8.1
Prop In Lane	0.00		1.00	0.51		1.00	1.00		0.04	1.00		0.06
Lane Grp Cap(c), veh/h	0	247	503	284	0	247	330	0	635	80	358	373
V/C Ratio(X)	0.00	0.04	0.41	0.73	0.00	0.75	0.85	0.00	0.86	0.60	0.68	0.68
Avail Cap(c_a), veh/h	0	287	537	421	0	366	412	0	844	191	670	698
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	24.4	17.3	25.9	0.0	26.0	25.4	0.0	19.8	30.2	23.8	23.8
Incr Delay (d2), s/veh	0.0	0.1	0.5	3.6	0.0	4.5	12.6	0.0	7.3	7.1	2.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	2.2	3.1	0.0	0.3	4.8	0.0	7.7	0.8	3.2	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	24.5	17.8	29.5	0.0	30.5	38.0	0.0	27.1	37.3	26.0	26.0
LnGrp LOS	A	C	B	C	A	C	D	A	C	D	C	C
Approach Vol, veh/h		217			391			828			543	
Approach Delay, s/veh		18.1			30.0			30.8			27.0	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	27.7		13.6	17.0	18.7		15.1
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1
Max Green Setting (Gmax), s	6.9	29.3		9.9	14.9	24.3		14.9
Max Q Clear Time (g_c+I1), s	3.7	19.8		8.6	11.8	10.1		9.1
Green Ext Time (p_c), s	0.0	2.2		0.1	0.2	2.2		0.9

Intersection Summary	
HCM 6th Ctrl Delay	28.2
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	33	55	113	748	535	195
Future Vol, veh/h	33	55	113	748	535	195
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	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	36	60	123	813	582	212

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1747	397	794	0	-	0
Stage 1	688	-	-	-	-	-
Stage 2	1059	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	85	603	825	-	-	-
Stage 1	461	-	-	-	-	-
Stage 2	332	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	72	603	825	-	-	-
Mov Cap-2 Maneuver	249	-	-	-	-	-
Stage 1	392	-	-	-	-	-
Stage 2	332	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.5	1.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	825	-	249	603	-	-
HCM Lane V/C Ratio	0.149	-	0.144	0.099	-	-
HCM Control Delay (s)	10.1	-	21.9	11.6	-	-
HCM Lane LOS	B	-	C	B	-	-
HCM 95th %tile Q(veh)	0.5	-	0.5	0.3	-	-

Intersection	
Intersection Delay, s/veh	55.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	58	22	25	25	48	181	27	560	12	52	286	29
Future Vol, veh/h	58	22	25	25	48	181	27	560	12	52	286	29
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	62	24	27	27	52	195	29	602	13	56	308	31
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	13.6	17.1	99.8	20.2
HCM LOS	B	C	F	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	55%	10%	100%	0%
Vol Thru, %	0%	98%	21%	19%	0%	91%
Vol Right, %	0%	2%	24%	71%	0%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	27	572	105	254	52	315
LT Vol	27	0	58	25	52	0
Through Vol	0	560	22	48	0	286
RT Vol	0	12	25	181	0	29
Lane Flow Rate	29	615	113	273	56	339
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.058	1.13	0.239	0.507	0.115	0.641
Departure Headway (Hd)	7.141	6.615	8.094	7.067	7.725	7.144
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	498	547	446	513	467	508
Service Time	4.939	4.412	6.094	5.067	5.425	4.844
HCM Lane V/C Ratio	0.058	1.124	0.253	0.532	0.12	0.667
HCM Control Delay	10.4	104	13.6	17.1	11.4	21.7
HCM Lane LOS	B	F	B	C	B	C
HCM 95th-tile Q	0.2	20.1	0.9	2.8	0.4	4.5

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	125	151	275	423	158	109
Future Vol, veh/h	125	151	275	423	158	109
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	133	161	293	450	168	116

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	293	0	-	0	720	293
Stage 1	-	-	-	-	293	-
Stage 2	-	-	-	-	427	-
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	1269	-	-	0	395	746
Stage 1	-	-	-	0	757	-
Stage 2	-	-	-	0	658	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1269	-	-	-	354	746
Mov Cap-2 Maneuver	-	-	-	-	354	-
Stage 1	-	-	-	-	678	-
Stage 2	-	-	-	-	658	-

Approach	EB	WB	SB
HCM Control Delay, s	3.7	0	18.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1269	-	-	354	746
HCM Lane V/C Ratio	0.105	-	-	0.475	0.155
HCM Control Delay (s)	8.2	-	-	24	10.7
HCM Lane LOS	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	-	-	2.5	0.5

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	15	22	545	241	95
Future Vol, veh/h	54	15	22	545	241	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	56	16	23	568	251	99

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	915	301	350	0	-	0
Stage 1	301	-	-	-	-	-
Stage 2	614	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	303	739	1209	-	-	-
Stage 1	751	-	-	-	-	-
Stage 2	540	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	297	739	1209	-	-	-
Mov Cap-2 Maneuver	475	-	-	-	-	-
Stage 1	737	-	-	-	-	-
Stage 2	540	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.1	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1209	-	515	-	-
HCM Lane V/C Ratio	0.019	-	0.14	-	-
HCM Control Delay (s)	8	-	13.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	95	0	0	105	0	10
Future Vol, veh/h	95	0	0	105	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	103	0	0	114	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	103	0	217	103
Stage 1	-	-	-	-	103	-
Stage 2	-	-	-	-	114	-
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	-	-	1489	-	771	952
Stage 1	-	-	-	-	921	-
Stage 2	-	-	-	-	911	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1489	-	771	952
Mov Cap-2 Maneuver	-	-	-	-	771	-
Stage 1	-	-	-	-	921	-
Stage 2	-	-	-	-	911	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	952	-	-	1489	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	8.8	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	420	0	8	112	0	0	0	8	2	0	0
Future Vol, veh/h	0	420	0	8	112	0	0	0	8	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	457	0	9	122	0	0	0	9	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	122	0	0	457	0	0	597	597	457	602	597	122
Stage 1	-	-	-	-	-	-	457	457	-	140	140	-
Stage 2	-	-	-	-	-	-	140	140	-	462	457	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1465	-	-	1104	-	-	415	416	604	412	416	929
Stage 1	-	-	-	-	-	-	583	568	-	863	781	-
Stage 2	-	-	-	-	-	-	863	781	-	580	568	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1465	-	-	1104	-	-	412	412	604	403	412	929
Mov Cap-2 Maneuver	-	-	-	-	-	-	412	412	-	403	412	-
Stage 1	-	-	-	-	-	-	583	568	-	863	774	-
Stage 2	-	-	-	-	-	-	855	774	-	572	568	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.6	11	14
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	604	1465	-	-	1104	-	-	403
HCM Lane V/C Ratio	0.014	-	-	-	0.008	-	-	0.005
HCM Control Delay (s)	11	0	-	-	8.3	0	-	14
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	242	343	23	250	79	12
Future Volume (veh/h)	242	343	23	250	79	12
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	1900	1900
Adj Flow Rate, veh/h	249	354	24	258	81	12
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	662	561	65	1041	167	25
Arrive On Green	0.35	0.35	0.04	0.56	0.11	0.11
Sat Flow, veh/h	1870	1585	1781	1870	1512	224
Grp Volume(v), veh/h	249	354	24	258	94	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1754	0
Q Serve(g_s), s	2.8	5.3	0.4	2.0	1.4	0.0
Cycle Q Clear(g_c), s	2.8	5.3	0.4	2.0	1.4	0.0
Prop In Lane		1.00	1.00		0.86	0.13
Lane Grp Cap(c), veh/h	662	561	65	1041	194	0
V/C Ratio(X)	0.38	0.63	0.37	0.25	0.48	0.00
Avail Cap(c_a), veh/h	2005	1699	460	1674	949	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	6.8	7.6	13.3	3.2	11.8	0.0
Incr Delay (d2), s/veh	0.4	1.2	3.5	0.1	1.9	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	0.7	1.2	0.2	0.2	0.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.2	8.8	16.8	3.3	13.7	0.0
LnGrp LOS	A	A	B	A	B	A
Approach Vol, veh/h	603			282	94	
Approach Delay, s/veh	8.1			4.5	13.7	
Approach LOS	A			A	B	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		7.8	5.7	14.7		20.4
Change Period (Y+Rc), s		* 4.7	* 4.7	* 4.7		* 4.7
Max Green Setting (Gmax), s		* 15	* 7.3	* 30		* 25
Max Q Clear Time (g_c+I1), s		3.4	2.4	7.3		4.0
Green Ext Time (p_c), s		0.2	0.0	2.8		1.4

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

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	117	128	156	138	50	121
Future Vol, veh/h	117	128	156	138	50	121
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	127	139	170	150	54	132
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	10.7	10.4	9.3
HCM LOS	B	B	A

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	48%	0%	100%	0%
Vol Thru, %	52%	53%	0%	0%
Vol Right, %	0%	47%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	245	294	50	121
LT Vol	117	0	50	0
Through Vol	128	156	0	0
RT Vol	0	138	0	121
Lane Flow Rate	266	320	54	132
Geometry Grp	2	2	7	7
Degree of Util (X)	0.36	0.396	0.096	0.188
Departure Headway (Hd)	4.87	4.461	6.349	5.136
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	735	802	561	693
Service Time	2.926	2.511	4.126	2.912
HCM Lane V/C Ratio	0.362	0.399	0.096	0.19
HCM Control Delay	10.7	10.4	9.8	9.1
HCM Lane LOS	B	B	A	A
HCM 95th-tile Q	1.6	1.9	0.3	0.7

Intersection	
Intersection Delay, s/veh	19.5
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	89	337	209	202	151	72
Future Vol, veh/h	89	337	209	202	151	72
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	97	366	227	220	164	78
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	20	23.5	11.3
HCM LOS	C	C	B

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	51%	21%	0%	0%
Vol Thru, %	49%	0%	100%	0%
Vol Right, %	0%	79%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	411	426	151	72
LT Vol	209	89	0	0
Through Vol	202	0	151	0
RT Vol	0	337	0	72
Lane Flow Rate	447	463	164	78
Geometry Grp	5	2	7	7
Degree of Util (X)	0.732	0.696	0.301	0.128
Departure Headway (Hd)	5.902	5.412	6.6	5.885
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	612	662	542	605
Service Time	3.964	3.479	4.381	3.665
HCM Lane V/C Ratio	0.73	0.699	0.303	0.129
HCM Control Delay	23.5	20	12.2	9.5
HCM Lane LOS	C	C	B	A
HCM 95th-tile Q	6.3	5.6	1.3	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	59	195	650	148	296	314
Future Volume (veh/h)	59	195	650	148	296	314
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	64	212	707	161	322	341
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	239	544	763	647	373	1290
Arrive On Green	0.14	0.14	0.42	0.42	0.21	0.71
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	64	212	707	161	322	341
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	2.3	7.1	25.2	4.6	12.2	4.6
Cycle Q Clear(g_c), s	2.3	7.1	25.2	4.6	12.2	4.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	239	544	763	647	373	1290
V/C Ratio(X)	0.27	0.39	0.93	0.25	0.86	0.26
Avail Cap(c_a), veh/h	358	650	804	682	505	1311
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	1.00
Uniform Delay (d), s/veh	26.5	16.7	18.9	13.0	26.0	3.6
Incr Delay (d2), s/veh	0.6	0.5	16.2	0.2	11.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.4	12.1	1.4	5.7	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.1	17.2	35.1	13.2	37.2	3.7
LnGrp LOS	C	B	D	B	D	A
Approach Vol, veh/h	276		868			663
Approach Delay, s/veh	19.5		31.0			20.0
Approach LOS	B		C			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	19.8	34.4			54.2	14.3
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	14.2	27.2			6.6	9.1
Green Ext Time (p_c), s	0.5	1.4			2.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	25.2
HCM 6th LOS	C

1: Tinloy St /Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.3	0.0	0.1
Total Del/Veh (s)	11.1	52.1	7.3	24.2

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.2	1.3	0.0	0.6
Total Del/Veh (s)	6.0	9.4	19.3	11.5

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.6	1.9	1.0
Total Del/Veh (s)	17.7	9.1	13.3	13.7	11.8

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.5	2.7	0.8
Total Del/Veh (s)	11.2	12.9	15.1	36.6	19.1

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.0	7.2	25.3	12.6

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.5	1.5	0.0	0.3
Total Del/Veh (s)	11.8	20.9	17.8	5.4	13.8

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	2.2	1.2
Total Del/Veh (s)	14.9	17.5	12.0	13.8

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.4	0.0	0.2	0.4
Total Del/Veh (s)	12.6	7.1	12.0	9.6

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.3	0.2
Total Del/Veh (s)	9.5	10.4	1.1	7.1

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

Cumulative plus Project AM Peak
To Centennial
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	30	3.0	0.276	8.8	LOS A	1.2	29.8	0.65	0.65	0.65	32.8
8	T1	63	3.0	0.276	8.8	LOS A	1.2	29.8	0.65	0.65	0.65	32.8
18	R2	90	3.0	0.276	8.8	LOS A	1.2	29.8	0.65	0.65	0.65	31.8
Approach		183	3.0	0.276	8.8	LOS A	1.2	29.8	0.65	0.65	0.65	32.3
East: Idaho Maryland Rd												
1	L2	264	3.0	0.283	6.8	LOS A	1.2	31.7	0.53	0.47	0.53	31.7
6	T1	163	3.0	0.458	9.3	LOS A	2.7	70.2	0.61	0.62	0.73	32.9
16	R2	264	3.0	0.458	9.3	LOS A	2.7	70.2	0.61	0.62	0.73	31.9
Approach		692	3.0	0.458	8.4	LOS A	2.7	70.2	0.58	0.56	0.65	32.0
North: Main St												
7	L2	143	3.0	0.368	8.0	LOS A	1.6	41.6	0.56	0.53	0.56	32.6
4	T1	197	3.0	0.368	8.0	LOS A	1.6	41.6	0.56	0.53	0.56	32.6
14	R2	209	3.0	0.128	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		549	3.0	0.368	5.0	LOS A	1.6	41.6	0.35	0.33	0.35	34.2
West: Main St												
5	L2	321	3.0	0.664	16.0	LOS B	6.2	159.5	0.78	1.02	1.47	28.9
2	T1	202	3.0	0.664	16.0	LOS B	6.2	159.5	0.78	1.02	1.47	28.9
12	R2	16	3.0	0.664	16.0	LOS B	6.2	159.5	0.78	1.02	1.47	28.2
Approach		539	3.0	0.664	16.0	LOS B	6.2	159.5	0.78	1.02	1.47	28.9
All Vehicles		1963	3.0	0.664	9.6	LOS A	6.2	159.5	0.58	0.63	0.79	31.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	21
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	79	324	5	0	0	0	0	132	168	177	389	0
Future Vol, veh/h	79	324	5	0	0	0	0	132	168	177	389	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	88	360	6	0	0	0	0	147	187	197	432	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	19.2	25.1
HCM LOS	C	C	D

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	33%	0%	100%	0%
Vol Thru, %	44%	67%	97%	0%	100%
Vol Right, %	56%	0%	3%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	300	241	167	177	389
LT Vol	0	79	0	177	0
Through Vol	132	162	162	0	389
RT Vol	168	0	5	0	0
Lane Flow Rate	333	268	186	197	432
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.605	0.542	0.366	0.388	0.791
Departure Headway (Hd)	6.531	7.292	7.103	7.098	6.589
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	550	493	505	505	549
Service Time	4.599	5.064	4.875	4.871	4.361
HCM Lane V/C Ratio	0.605	0.544	0.368	0.39	0.787
HCM Control Delay	19.2	18.4	14	14.3	30
HCM Lane LOS	C	C	B	B	D
HCM 95th-tile Q	4	3.2	1.7	1.8	7.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	267	38	80	840	150	266
Future Volume (veh/h)	267	38	80	840	150	266
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	297	42	89	933	167	296
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	376	53	110	1209	295	838
Arrive On Green	0.23	0.23	0.36	0.36	0.17	0.17
Sat Flow, veh/h	1603	227	302	3423	1781	1585
Grp Volume(v), veh/h	0	339	546	476	167	296
Grp Sat Flow(s),veh/h/ln	0	1830	1855	1777	1781	1585
Q Serve(g_s), s	0.0	10.4	15.8	13.9	5.1	6.4
Cycle Q Clear(g_c), s	0.0	10.4	15.8	13.9	5.1	6.4
Prop In Lane		0.12	0.16		1.00	1.00
Lane Grp Cap(c), veh/h	0	429	674	645	295	838
V/C Ratio(X)	0.00	0.79	0.81	0.74	0.57	0.35
Avail Cap(c_a), veh/h	0	778	789	755	757	1249
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	21.4	17.1	16.5	22.9	8.1
Incr Delay (d2), s/veh	0.0	3.3	5.6	3.2	1.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.5	7.0	5.5	2.1	4.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	24.7	22.7	19.7	24.6	8.4
LnGrp LOS	A	C	C	B	C	A
Approach Vol, veh/h	339			1022	463	
Approach Delay, s/veh	24.7			21.3	14.2	
Approach LOS	C			C	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	14.6	18.7	26.3
Change Period (Y+Rc), s	* 4.7	* 4.7	4.7
Max Green Setting (Gmax), s	* 25	* 25	25.3
Max Q Clear Time (g_c+I1), s	8.4	12.4	17.8
Green Ext Time (p_c), s	1.4	1.6	3.8

Intersection Summary	
HCM 6th Ctrl Delay	20.1
HCM 6th LOS	C

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)	513	77	26	809	108	35
Future Volume (veh/h)	513	77	26	809	108	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	1900	1900
Adj Flow Rate, veh/h	590	89	30	930	124	40
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	875	132	38	1237	166	54
Arrive On Green	0.28	0.28	0.35	0.35	0.13	0.13
Sat Flow, veh/h	3191	466	109	3626	1300	419
Grp Volume(v), veh/h	338	341	514	446	165	0
Grp Sat Flow(s),veh/h/ln	1777	1786	1865	1777	1730	0
Q Serve(g_s), s	9.8	9.9	14.5	12.7	5.4	0.0
Cycle Q Clear(g_c), s	9.8	9.9	14.5	12.7	5.4	0.0
Prop In Lane		0.26	0.06		0.75	0.24
Lane Grp Cap(c), veh/h	502	505	653	622	221	0
V/C Ratio(X)	0.67	0.68	0.79	0.72	0.75	0.00
Avail Cap(c_a), veh/h	1225	1232	807	769	278	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	18.6	18.6	17.0	16.5	24.6	0.0
Incr Delay (d2), s/veh	1.6	1.6	4.2	2.4	8.1	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	3.9	3.9	6.2	5.0	2.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.2	20.2	21.2	18.9	32.7	0.0
LnGrp LOS	C	C	C	B	C	A
Approach Vol, veh/h	679			960	165	
Approach Delay, s/veh	20.2			20.2	32.7	
Approach LOS	C			C	C	

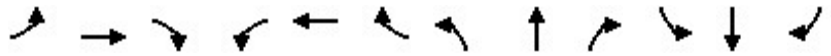
Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	12.1	21.2	25.2
Change Period (Y+Rc), s	4.6	* 4.7	4.7
Max Green Setting (Gmax), s	9.4	* 40	25.3
Max Q Clear Time (g_c+I1), s	7.4	11.9	16.5
Green Ext Time (p_c), s	0.1	4.6	4.0

Intersection Summary	
HCM 6th Ctrl Delay	21.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* 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)	3	71	254	28	34	106	273	607	77	147	526	15
Future Volume (veh/h)	3	71	254	28	34	106	273	607	77	147	526	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	73	262	29	35	109	281	626	79	152	542	15
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	10	233	492	79	95	151	322	666	84	161	1126	31
Arrive On Green	0.13	0.13	0.13	0.10	0.10	0.10	0.18	0.41	0.41	0.09	0.32	0.32
Sat Flow, veh/h	74	1793	1585	829	1000	1585	1781	1628	205	1781	3532	98
Grp Volume(v), veh/h	76	0	262	64	0	109	281	0	705	152	272	285
Grp Sat Flow(s),veh/h/ln	1867	0	1585	1829	0	1585	1781	0	1833	1781	1777	1853
Q Serve(g_s), s	2.8	0.0	9.9	2.5	0.0	5.1	11.7	0.0	28.2	6.5	9.4	9.4
Cycle Q Clear(g_c), s	2.8	0.0	9.9	2.5	0.0	5.1	11.7	0.0	28.2	6.5	9.4	9.4
Prop In Lane	0.04		1.00	0.45		1.00	1.00		0.11	1.00		0.05
Lane Grp Cap(c), veh/h	242	0	492	174	0	151	322	0	750	161	566	591
V/C Ratio(X)	0.31	0.00	0.53	0.37	0.00	0.72	0.87	0.00	0.94	0.94	0.48	0.48
Avail Cap(c_a), veh/h	242	0	492	357	0	310	348	0	777	161	566	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.1	0.0	21.7	32.3	0.0	33.5	30.4	0.0	21.6	34.5	20.9	20.9
Incr Delay (d2), s/veh	0.7	0.0	1.1	1.3	0.0	6.4	19.9	0.0	19.0	54.1	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	3.8	1.1	0.0	2.2	6.6	0.0	15.0	5.1	3.8	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.8	0.0	22.8	33.6	0.0	39.9	50.3	0.0	40.6	88.6	21.5	21.5
LnGrp LOS	C	A	C	C	A	D	D	A	D	F	C	C
Approach Vol, veh/h		338			173			986			709	
Approach Delay, s/veh		24.6			37.6			43.4			35.9	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	36.9		15.0	18.9	30.0		12.4
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1
Max Green Setting (Gmax), s	6.9	32.3		9.9	14.9	24.3		14.9
Max Q Clear Time (g_c+I1), s	8.5	30.2		11.9	13.7	11.4		7.1
Green Ext Time (p_c), s	0.0	1.0		0.0	0.1	2.8		0.4

Intersection Summary	
HCM 6th Ctrl Delay	37.6
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	193	99	37	762	715	87
Future Vol, veh/h	193	99	37	762	715	87
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	203	104	39	802	753	92

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1679	423	845	0	-	0
Stage 1	799	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	~ 95	580	789	-	-	-
Stage 1	404	-	-	-	-	-
Stage 2	404	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 90	580	789	-	-	-
Mov Cap-2 Maneuver	277	-	-	-	-	-
Stage 1	384	-	-	-	-	-
Stage 2	404	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	35.2	0.5	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	789	-	277	580	-	-
HCM Lane V/C Ratio	0.049	-	0.733	0.18	-	-
HCM Control Delay (s)	9.8	-	46.8	12.6	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.2	-	5.3	0.7	-	-

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

Intersection	
Intersection Delay, s/veh	49.2
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	24	27	23	40	79	22	406	34	151	574	77
Future Vol, veh/h	33	24	27	23	40	79	22	406	34	151	574	77
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	24	27	23	40	80	22	410	34	153	580	78
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	12	12.7	27.3	72.2
HCM LOS	B	B	D	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	39%	16%	100%	0%
Vol Thru, %	0%	92%	29%	28%	0%	88%
Vol Right, %	0%	8%	32%	56%	0%	12%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	22	440	84	142	151	651
LT Vol	22	0	33	23	151	0
Through Vol	0	406	24	40	0	574
RT Vol	0	34	27	79	0	77
Lane Flow Rate	22	444	85	143	153	658
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.042	0.777	0.17	0.272	0.277	1.088
Departure Headway (Hd)	7.049	6.485	7.515	7.07	6.549	5.957
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	511	560	480	512	548	612
Service Time	4.749	4.185	5.515	5.07	4.294	3.702
HCM Lane V/C Ratio	0.043	0.793	0.177	0.279	0.279	1.075
HCM Control Delay	10.1	28.2	12	12.7	11.8	86.2
HCM Lane LOS	B	D	B	B	B	F
HCM 95th-tile Q	0.1	7.1	0.6	1.1	1.1	19.3

Intersection	
Int Delay, s/veh	61.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	86	238	245	277	422	124
Future Vol, veh/h	86	238	245	277	422	124
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	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	93	259	266	301	459	135

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	266	0	-	0	711	266
Stage 1	-	-	-	-	266	-
Stage 2	-	-	-	-	445	-
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	1298	-	-	0	~ 400	773
Stage 1	-	-	-	0	779	-
Stage 2	-	-	-	0	646	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1298	-	-	-	~ 371	773
Mov Cap-2 Maneuver	-	-	-	-	~ 371	-
Stage 1	-	-	-	-	723	-
Stage 2	-	-	-	-	646	-

Approach	EB	WB	SB
HCM Control Delay, s	2.1	0	125
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1298	-	-	371	773
HCM Lane V/C Ratio	0.072	-	-	1.236	0.174
HCM Control Delay (s)	8	-	-	158.6	10.6
HCM Lane LOS	A	-	-	F	B
HCM 95th %tile Q(veh)	0.2	-	-	19.7	0.6

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

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	85	22	15	378	561	64
Future Vol, veh/h	85	22	15	378	561	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	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	92	24	16	411	610	70

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1088	645	680	0	-	0
Stage 1	645	-	-	-	-	-
Stage 2	443	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	239	472	912	-	-	-
Stage 1	522	-	-	-	-	-
Stage 2	647	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	235	472	912	-	-	-
Mov Cap-2 Maneuver	430	-	-	-	-	-
Stage 1	513	-	-	-	-	-
Stage 2	647	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.2	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	912	-	438	-	-
HCM Lane V/C Ratio	0.018	-	0.266	-	-
HCM Control Delay (s)	9	-	16.2	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.1	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	75	0	0	138	0	10
Future Vol, veh/h	75	0	0	138	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	82	0	0	150	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	82	0	232	82
Stage 1	-	-	-	-	82	-
Stage 2	-	-	-	-	150	-
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	-	-	1515	-	756	978
Stage 1	-	-	-	-	941	-
Stage 2	-	-	-	-	878	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1515	-	756	978
Mov Cap-2 Maneuver	-	-	-	-	756	-
Stage 1	-	-	-	-	941	-
Stage 2	-	-	-	-	878	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	978	-	-	1515	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	8.7	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	148	0	8	357	0	0	0	8	0	0	0
Future Vol, veh/h	0	148	0	8	357	0	0	0	8	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	197	0	11	476	0	0	0	11	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	476	0	0	197	0	0	695	695	197	701	695	476
Stage 1	-	-	-	-	-	-	197	197	-	498	498	-
Stage 2	-	-	-	-	-	-	498	498	-	203	197	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1086	-	-	1376	-	-	357	366	844	353	366	589
Stage 1	-	-	-	-	-	-	805	738	-	554	544	-
Stage 2	-	-	-	-	-	-	554	544	-	799	738	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1086	-	-	1376	-	-	354	362	844	346	362	589
Mov Cap-2 Maneuver	-	-	-	-	-	-	354	362	-	346	362	-
Stage 1	-	-	-	-	-	-	805	738	-	554	538	-
Stage 2	-	-	-	-	-	-	548	538	-	789	738	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	9.3	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	844	1086	-	-	1376	-	-	-
HCM Lane V/C Ratio	0.013	-	-	-	0.008	-	-	-
HCM Control Delay (s)	9.3	0	-	-	7.6	0	-	0
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	348	146	13	410	332	37
Future Volume (veh/h)	348	146	13	410	332	37
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	1900	1900
Adj Flow Rate, veh/h	435	182	16	512	415	46
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	617	523	43	874	485	54
Arrive On Green	0.33	0.33	0.02	0.47	0.31	0.31
Sat Flow, veh/h	1870	1585	1781	1870	1581	175
Grp Volume(v), veh/h	435	182	16	512	462	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1760	0
Q Serve(g_s), s	8.5	3.6	0.4	8.4	10.3	0.0
Cycle Q Clear(g_c), s	8.5	3.6	0.4	8.4	10.3	0.0
Prop In Lane		1.00	1.00		0.90	0.10
Lane Grp Cap(c), veh/h	617	523	43	874	540	0
V/C Ratio(X)	0.70	0.35	0.37	0.59	0.85	0.00
Avail Cap(c_a), veh/h	1361	1153	312	1136	646	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	12.2	10.6	20.0	8.1	13.6	0.0
Incr Delay (d2), s/veh	1.5	0.4	5.2	0.6	9.5	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	3.0	1.1	0.2	2.5	4.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.7	11.0	25.2	8.8	23.0	0.0
LnGrp LOS	B	B	C	A	C	A
Approach Vol, veh/h	617			528	462	
Approach Delay, s/veh	12.9			9.3	23.0	
Approach LOS	B			A	C	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		17.5	5.7	18.4		24.2
Change Period (Y+Rc), s		* 4.7	* 4.7	* 4.7		* 4.7
Max Green Setting (Gmax), s		* 15	* 7.3	* 30		* 25
Max Q Clear Time (g_c+I1), s		12.3	2.4	10.5		10.4
Green Ext Time (p_c), s		0.5	0.0	3.3		2.9

Intersection Summary	
HCM 6th Ctrl Delay	14.6
HCM 6th LOS	B

Notes

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

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Intersection Delay, s/veh	18.7
Intersection LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	244	140	208	100	163	230
Future Vol, veh/h	244	140	208	100	163	230
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	287	165	245	118	192	271
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	24.7	16.8	14.2
HCM LOS	C	C	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	64%	0%	100%	0%
Vol Thru, %	36%	68%	0%	0%
Vol Right, %	0%	32%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	384	308	163	230
LT Vol	244	0	163	0
Through Vol	140	208	0	0
RT Vol	0	100	0	230
Lane Flow Rate	452	362	192	271
Geometry Grp	2	2	7	7
Degree of Util (X)	0.748	0.585	0.388	0.456
Departure Headway (Hd)	5.963	5.814	7.292	6.068
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	605	616	491	590
Service Time	4.027	3.884	5.062	3.837
HCM Lane V/C Ratio	0.747	0.588	0.391	0.459
HCM Control Delay	24.7	16.8	14.7	13.9
HCM Lane LOS	C	C	B	B
HCM 95th-tile Q	6.6	3.8	1.8	2.4

Intersection	
Intersection Delay, s/veh	279.9
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	133	444	429	418	379	139
Future Vol, veh/h	133	444	429	418	379	139
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	160	535	517	504	457	167
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	163.7	495.2	57.2
HCM LOS	F	F	F

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	51%	23%	0%	0%
Vol Thru, %	49%	0%	100%	0%
Vol Right, %	0%	77%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	847	577	379	139
LT Vol	429	133	0	0
Through Vol	418	0	379	0
RT Vol	0	444	0	139
Lane Flow Rate	1020	695	457	167
Geometry Grp	5	2	7	7
Degree of Util (X)	2.042	1.272	0.968	0.322
Departure Headway (Hd)	8.031	8.061	10.052	9.313
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	459	459	365	389
Service Time	6.031	6.061	7.752	7.013
HCM Lane V/C Ratio	2.222	1.514	1.252	0.429
HCM Control Delay	495.2	163.7	72.1	16.4
HCM Lane LOS	F	F	F	C
HCM 95th-tile Q	63.8	24	10.7	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	157	363	470	48	132	627
Future Volume (veh/h)	157	363	470	48	132	627
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	171	395	511	52	143	682
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	446	564	625	530	187	995
Arrive On Green	0.26	0.26	0.34	0.34	0.11	0.54
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	171	395	511	52	143	682
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	4.4	11.7	13.8	1.2	4.3	14.6
Cycle Q Clear(g_c), s	4.4	11.7	13.8	1.2	4.3	14.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	446	564	625	530	187	995
V/C Ratio(X)	0.38	0.70	0.82	0.10	0.76	0.69
Avail Cap(c_a), veh/h	455	572	1023	867	642	1667
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	1.00
Uniform Delay (d), s/veh	16.5	14.6	16.2	12.1	23.4	8.9
Incr Delay (d2), s/veh	0.5	3.7	2.7	0.1	6.3	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	4.1	4.9	0.3	1.9	3.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.1	18.4	18.9	12.1	29.7	9.8
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	566		563			825
Approach Delay, s/veh	18.0		18.3			13.2
Approach LOS	B		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	10.9	24.3			35.2	18.7
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	6.3	15.8			16.6	13.7
Green Ext Time (p_c), s	0.3	2.7			4.7	0.1

Intersection Summary	
HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

1: Tinloy St /Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.1	0.3	0.0	0.1
Total Del/Veh (s)	17.2	136.3	15.3	48.8

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	1.0	0.0	0.4
Total Del/Veh (s)	6.3	9.0	27.7	14.0

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.6	2.1	1.2
Total Del/Veh (s)	21.5	12.0	18.8	19.8	16.5

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.5	2.7	0.7
Total Del/Veh (s)	15.2	15.1	22.3	36.7	21.0

10: Brunswick Rd & SR 49/20 EB On Ramp 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	9.9	29.7	14.5

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.6	1.7	0.0	0.6
Total Del/Veh (s)	21.7	42.1	47.7	15.9	32.2

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.8	2.7	1.0
Total Del/Veh (s)	13.8	14.0	19.0	15.2

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.6	0.1	0.2	0.7
Total Del/Veh (s)	22.9	13.7	21.4	18.6

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.5	0.3
Total Del/Veh (s)	15.5	11.1	2.0	9.7

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

Cumulative plus Project PM Peak
To Centennial
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	72	3.0	0.293	7.6	LOS A	1.3	34.4	0.59	0.55	0.59	33.1
8	T1	81	3.0	0.293	7.6	LOS A	1.3	34.4	0.59	0.55	0.59	33.0
18	R2	89	3.0	0.293	7.6	LOS A	1.3	34.4	0.59	0.55	0.59	32.1
Approach		242	3.0	0.293	7.6	LOS A	1.3	34.4	0.59	0.55	0.59	32.7
East: Idaho Maryland Rd												
1	L2	402	3.0	0.417	8.5	LOS A	2.1	53.3	0.58	0.52	0.58	31.0
6	T1	319	3.0	0.567	11.3	LOS B	4.9	126.7	0.67	0.74	0.97	32.0
16	R2	232	3.0	0.567	11.3	LOS B	4.9	126.7	0.67	0.74	0.97	31.1
Approach		953	3.0	0.567	10.1	LOS B	4.9	126.7	0.63	0.65	0.80	31.4
North: Main St												
7	L2	94	3.0	0.465	12.0	LOS B	2.5	63.7	0.70	0.80	1.02	31.2
4	T1	226	3.0	0.465	12.0	LOS B	2.5	63.7	0.70	0.80	1.02	31.1
14	R2	354	3.0	0.218	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		674	3.0	0.465	5.7	LOS A	2.5	63.7	0.33	0.38	0.48	34.0
West: Main St												
5	L2	229	3.0	0.543	13.3	LOS B	3.5	90.2	0.72	0.87	1.17	30.0
2	T1	136	3.0	0.543	13.3	LOS B	3.5	90.2	0.72	0.87	1.17	29.9
12	R2	33	3.0	0.543	13.3	LOS B	3.5	90.2	0.72	0.87	1.17	29.2
Approach		398	3.0	0.543	13.3	LOS B	3.5	90.2	0.72	0.87	1.17	29.9
All Vehicles		2266	3.0	0.567	9.1	LOS A	4.9	126.7	0.55	0.60	0.75	31.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	107	6	0	0	0	0	103	119	101	103	0
Future Vol, veh/h	20	107	6	0	0	0	0	103	119	101	103	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	116	7	0	0	0	0	112	129	110	112	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	9.2	10.3	9.2
HCM LOS	A	B	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	27%	0%	100%	0%
Vol Thru, %	46%	73%	90%	0%	100%
Vol Right, %	54%	0%	10%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	222	74	60	101	103
LT Vol	0	20	0	101	0
Through Vol	103	54	54	0	103
RT Vol	119	0	6	0	0
Lane Flow Rate	241	80	65	110	112
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.327	0.129	0.1	0.173	0.16
Departure Headway (Hd)	4.881	5.796	5.588	5.657	5.154
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	736	617	639	633	695
Service Time	2.919	3.549	3.34	3.397	2.894
HCM Lane V/C Ratio	0.327	0.13	0.102	0.174	0.161
HCM Control Delay	10.3	9.4	9	9.6	8.9
HCM Lane LOS	B	A	A	A	A
HCM 95th-tile Q	1.4	0.4	0.3	0.6	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	214	15	44	197	119	424
Future Volume (veh/h)	214	15	44	197	119	424
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	233	16	48	214	129	461
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	332	23	112	531	539	762
Arrive On Green	0.19	0.19	0.18	0.18	0.30	0.30
Sat Flow, veh/h	1730	119	630	3079	1781	1585
Grp Volume(v), veh/h	0	249	140	122	129	461
Grp Sat Flow(s),veh/h/ln	0	1849	1839	1777	1781	1585
Q Serve(g_s), s	0.0	5.4	2.9	2.6	2.3	9.2
Cycle Q Clear(g_c), s	0.0	5.4	2.9	2.6	2.3	9.2
Prop In Lane		0.06	0.34		1.00	1.00
Lane Grp Cap(c), veh/h	0	355	327	316	539	762
V/C Ratio(X)	0.00	0.70	0.43	0.39	0.24	0.61
Avail Cap(c_a), veh/h	0	1087	1081	1045	1047	1214
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	16.2	15.7	15.6	11.3	8.2
Incr Delay (d2), s/veh	0.0	2.5	0.9	0.8	0.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.2	1.1	1.0	0.8	3.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	18.8	16.6	16.4	11.5	9.0
LnGrp LOS	A	B	B	B	B	A
Approach Vol, veh/h	249			262	590	
Approach Delay, s/veh	18.8			16.5	9.5	
Approach LOS	B			B	A	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	17.7	13.0	12.4
Change Period (Y+Rc), s	* 4.7	* 4.7	4.7
Max Green Setting (Gmax), s	* 25	* 25	25.3
Max Q Clear Time (g_c+I1), s	11.2	7.4	4.9
Green Ext Time (p_c), s	1.9	1.3	1.4

Intersection Summary	
HCM 6th Ctrl Delay	13.3
HCM 6th LOS	B

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)	577	77	24	206	45	7
Future Volume (veh/h)	577	77	24	206	45	7
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	1900	1900
Adj Flow Rate, veh/h	627	84	26	224	49	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	1104	148	72	652	108	18
Arrive On Green	0.35	0.35	0.20	0.20	0.07	0.07
Sat Flow, veh/h	3244	421	360	3363	1481	242
Grp Volume(v), veh/h	353	358	134	116	58	0
Grp Sat Flow(s),veh/h/ln	1777	1795	1852	1777	1753	0
Q Serve(g_s), s	6.0	6.0	2.3	2.1	1.2	0.0
Cycle Q Clear(g_c), s	6.0	6.0	2.3	2.1	1.2	0.0
Prop In Lane		0.23	0.19		0.84	0.14
Lane Grp Cap(c), veh/h	622	629	369	354	128	0
V/C Ratio(X)	0.57	0.57	0.36	0.33	0.45	0.00
Avail Cap(c_a), veh/h	1931	1950	1264	1212	492	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	9.8	9.8	12.8	12.7	16.5	0.0
Incr Delay (d2), s/veh	0.8	0.8	0.6	0.5	2.5	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	1.8	1.8	0.8	0.7	0.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.6	10.6	13.4	13.3	19.0	0.0
LnGrp LOS	B	B	B	B	B	A
Approach Vol, veh/h	711			250	58	
Approach Delay, s/veh	10.6			13.3	19.0	
Approach LOS	B			B	B	

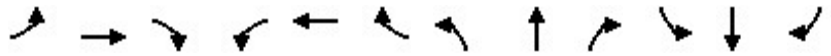
Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	7.3	17.7	12.1
Change Period (Y+Rc), s	4.6	* 4.7	4.7
Max Green Setting (Gmax), s	10.4	* 40	25.3
Max Q Clear Time (g_c+I1), s	3.2	8.0	4.3
Green Ext Time (p_c), s	0.1	5.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	11.7
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* 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	5	147	74	50	89	137	241	11	13	296	5
Future Volume (veh/h)	0	5	147	74	50	89	137	241	11	13	296	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	5	160	80	54	97	149	262	12	14	322	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	220	365	136	92	199	201	483	22	32	636	10
Arrive On Green	0.00	0.12	0.12	0.13	0.13	0.13	0.11	0.27	0.27	0.02	0.18	0.18
Sat Flow, veh/h	0	1870	1585	1084	732	1585	1781	1774	81	1781	3582	56
Grp Volume(v), veh/h	0	5	160	134	0	97	149	0	274	14	160	167
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1816	0	1585	1781	0	1856	1781	1777	1860
Q Serve(g_s), s	0.0	0.1	3.9	3.1	0.0	2.6	3.6	0.0	5.7	0.4	3.7	3.7
Cycle Q Clear(g_c), s	0.0	0.1	3.9	3.1	0.0	2.6	3.6	0.0	5.7	0.4	3.7	3.7
Prop In Lane	0.00		1.00	0.60		1.00	1.00		0.04	1.00		0.03
Lane Grp Cap(c), veh/h	0	220	365	229	0	199	201	0	505	32	316	330
V/C Ratio(X)	0.00	0.02	0.44	0.59	0.00	0.49	0.74	0.00	0.54	0.44	0.51	0.51
Avail Cap(c_a), veh/h	0	411	527	601	0	525	590	0	1208	273	959	1004
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	17.6	14.8	18.6	0.0	18.3	19.3	0.0	14.0	21.9	16.7	16.7
Incr Delay (d2), s/veh	0.0	0.0	0.8	2.4	0.0	1.8	5.4	0.0	0.9	9.3	1.3	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.2	1.3	0.0	0.9	1.5	0.0	1.9	0.2	1.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	17.6	15.7	21.0	0.0	20.2	24.7	0.0	14.9	31.2	18.0	17.9
LnGrp LOS	A	B	B	C	A	C	C	A	B	C	B	B
Approach Vol, veh/h		165			231			423			341	
Approach Delay, s/veh		15.7			20.6			18.3			18.5	
Approach LOS		B			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.9	18.0		10.4	10.2	13.7		10.8
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1
Max Green Setting (Gmax), s	6.9	29.3		9.9	14.9	24.3		14.9
Max Q Clear Time (g_c+I1), s	2.4	7.7		5.9	5.6	5.7		5.1
Green Ext Time (p_c), s	0.0	1.4		0.2	0.2	1.5		0.7

Intersection Summary	
HCM 6th Ctrl Delay	18.5
HCM 6th LOS	B

Notes

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

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	38	64	370	388	98
Future Vol, veh/h	20	38	64	370	388	98
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	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	22	41	70	402	422	107

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1018	265	529	0	-	0
Stage 1	476	-	-	-	-	-
Stage 2	542	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	248	734	1036	-	-	-
Stage 1	592	-	-	-	-	-
Stage 2	582	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	231	734	1036	-	-	-
Mov Cap-2 Maneuver	431	-	-	-	-	-
Stage 1	552	-	-	-	-	-
Stage 2	582	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.4	1.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1036	-	431	734	-	-
HCM Lane V/C Ratio	0.067	-	0.05	0.056	-	-
HCM Control Delay (s)	8.7	-	13.8	10.2	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.2	0.2	-	-

Intersection	
Intersection Delay, s/veh	13
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	10	21	28	25	80	23	361	6	25	186	12
Future Vol, veh/h	27	10	21	28	25	80	23	361	6	25	186	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	11	23	30	27	87	25	392	7	27	202	13
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	9.5	10.1	15.7	10.9
HCM LOS	A	B	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	47%	21%	100%	0%
Vol Thru, %	0%	98%	17%	19%	0%	94%
Vol Right, %	0%	2%	36%	60%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	23	367	58	133	25	198
LT Vol	23	0	27	28	25	0
Through Vol	0	361	10	25	0	186
RT Vol	0	6	21	80	0	12
Lane Flow Rate	25	399	63	145	27	215
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.041	0.603	0.102	0.22	0.046	0.334
Departure Headway (Hd)	5.957	5.441	5.838	5.47	6.137	5.588
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	605	666	613	656	585	644
Service Time	3.657	3.141	3.881	3.507	3.863	3.314
HCM Lane V/C Ratio	0.041	0.599	0.103	0.221	0.046	0.334
HCM Control Delay	8.9	16.1	9.5	10.1	9.2	11.1
HCM Lane LOS	A	C	A	B	A	B
HCM 95th-tile Q	0.1	4.1	0.3	0.8	0.1	1.5

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	122	49	133	258	129	48
Future Vol, veh/h	122	49	133	258	129	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	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	133	53	145	280	140	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	145	0	-	0	464	145
Stage 1	-	-	-	-	145	-
Stage 2	-	-	-	-	319	-
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	1437	-	-	0	556	902
Stage 1	-	-	-	0	882	-
Stage 2	-	-	-	0	737	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1437	-	-	-	504	902
Mov Cap-2 Maneuver	-	-	-	-	504	-
Stage 1	-	-	-	-	800	-
Stage 2	-	-	-	-	737	-

Approach	EB	WB	SB
HCM Control Delay, s	5.5	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1437	-	-	504	902
HCM Lane V/C Ratio	0.092	-	-	0.278	0.058
HCM Control Delay (s)	7.8	-	-	14.9	9.2
HCM Lane LOS	A	-	-	B	A
HCM 95th %tile Q(veh)	0.3	-	-	1.1	0.2

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	15	22	336	141	95
Future Vol, veh/h	54	15	22	336	141	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	59	16	24	365	153	103

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	618	205	256	0	-	0
Stage 1	205	-	-	-	-	-
Stage 2	413	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	453	836	1309	-	-	-
Stage 1	829	-	-	-	-	-
Stage 2	668	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	445	836	1309	-	-	-
Mov Cap-2 Maneuver	595	-	-	-	-	-
Stage 1	814	-	-	-	-	-
Stage 2	668	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.4	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1309	-	635	-	-
HCM Lane V/C Ratio	0.018	-	0.118	-	-
HCM Control Delay (s)	7.8	-	11.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	49	0	0	61	0	10
Future Vol, veh/h	49	0	0	61	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	53	0	0	66	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	53	0	119	53
Stage 1	-	-	-	-	53	-
Stage 2	-	-	-	-	66	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1553	-	877	1014
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	957	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1553	-	877	1014
Mov Cap-2 Maneuver	-	-	-	-	877	-
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	957	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1014	-	-	1553	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	242	0	8	72	0	8
Future Vol, veh/h	242	0	8	72	0	8
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	263	0	9	78	0	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	263	0	359	263
Stage 1	-	-	-	-	263	-
Stage 2	-	-	-	-	96	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1301	-	640	776
Stage 1	-	-	-	-	781	-
Stage 2	-	-	-	-	928	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1301	-	636	776
Mov Cap-2 Maneuver	-	-	-	-	668	-
Stage 1	-	-	-	-	781	-
Stage 2	-	-	-	-	922	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	776	-	-	1301	-
HCM Lane V/C Ratio	0.011	-	-	0.007	-
HCM Control Delay (s)	9.7	-	-	7.8	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	176	251	7	149	41	5
Future Volume (veh/h)	176	251	7	149	41	5
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	1900	1900
Adj Flow Rate, veh/h	191	273	8	162	45	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	613	520	23	1004	112	12
Arrive On Green	0.33	0.33	0.01	0.54	0.07	0.07
Sat Flow, veh/h	1870	1585	1781	1870	1554	173
Grp Volume(v), veh/h	191	273	8	162	51	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1762	0
Q Serve(g_s), s	1.8	3.4	0.1	1.1	0.7	0.0
Cycle Q Clear(g_c), s	1.8	3.4	0.1	1.1	0.7	0.0
Prop In Lane		1.00	1.00		0.88	0.10
Lane Grp Cap(c), veh/h	613	520	23	1004	127	0
V/C Ratio(X)	0.31	0.53	0.35	0.16	0.40	0.00
Avail Cap(c_a), veh/h	2359	1999	541	1970	1122	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	6.0	6.6	11.8	2.8	10.6	0.0
Incr Delay (d2), s/veh	0.3	0.8	8.6	0.1	2.0	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	0.4	0.6	0.1	0.1	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.3	7.4	20.4	2.9	12.7	0.0
LnGrp LOS	A	A	C	A	B	A
Approach Vol, veh/h	464			170	51	
Approach Delay, s/veh	6.9			3.7	12.7	
Approach LOS	A			A	B	

Timer - Assigned Phs	2	3	4	8
Phs Duration (G+Y+Rc), s	6.4	5.0	12.6	17.6
Change Period (Y+Rc), s	* 4.7	* 4.7	* 4.7	* 4.7
Max Green Setting (Gmax), s	* 15	* 7.3	* 30	* 25
Max Q Clear Time (g_c+I1), s	2.7	2.1	5.4	3.1
Green Ext Time (p_c), s	0.1	0.0	2.1	0.8

Intersection Summary	
HCM 6th Ctrl Delay	6.6
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	50	113	106	68	32	54
Future Vol, veh/h	50	113	106	68	32	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	123	115	74	35	59
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	8.7	8.3	8.1
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	31%	0%	100%	0%
Vol Thru, %	69%	61%	0%	0%
Vol Right, %	0%	39%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	163	174	32	54
LT Vol	50	0	32	0
Through Vol	113	106	0	0
RT Vol	0	68	0	54
Lane Flow Rate	177	189	35	59
Geometry Grp	2	2	7	7
Degree of Util (X)	0.218	0.217	0.056	0.075
Departure Headway (Hd)	4.424	4.129	5.835	4.627
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	815	872	615	775
Service Time	2.436	2.14	3.559	2.351
HCM Lane V/C Ratio	0.217	0.217	0.057	0.076
HCM Control Delay	8.7	8.3	8.9	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.8	0.8	0.2	0.2

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	28	172	119	82	73	43
Future Vol, veh/h	28	172	119	82	73	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	187	129	89	79	47
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8.8	9.8	8.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	59%	14%	0%	0%
Vol Thru, %	41%	0%	100%	0%
Vol Right, %	0%	86%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	201	200	73	43
LT Vol	119	28	0	0
Through Vol	82	0	73	0
RT Vol	0	172	0	43
Lane Flow Rate	218	217	79	47
Geometry Grp	5	2	7	7
Degree of Util (X)	0.29	0.258	0.115	0.059
Departure Headway (Hd)	4.786	4.267	5.217	4.512
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	749	841	686	792
Service Time	2.823	2.294	2.957	2.251
HCM Lane V/C Ratio	0.291	0.258	0.115	0.059
HCM Control Delay	9.8	8.8	8.6	7.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.2	1	0.4	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	30	79	340	127	209	195
Future Volume (veh/h)	30	79	340	127	209	195
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	33	86	370	138	227	212
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	167	416	545	462	301	1116
Arrive On Green	0.10	0.10	0.30	0.30	0.17	0.61
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	33	86	370	138	227	212
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	0.6	1.6	6.5	2.5	4.5	1.9
Cycle Q Clear(g_c), s	0.6	1.6	6.5	2.5	4.5	1.9
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	167	416	545	462	301	1116
V/C Ratio(X)	0.20	0.21	0.68	0.30	0.75	0.19
Avail Cap(c_a), veh/h	671	865	1508	1278	947	2457
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	1.00
Uniform Delay (d), s/veh	15.2	10.3	11.3	9.9	14.4	3.1
Incr Delay (d2), s/veh	0.6	0.2	1.5	0.4	3.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.4	1.9	0.6	1.6	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.8	10.6	12.8	10.2	18.2	3.2
LnGrp LOS	B	B	B	B	B	A
Approach Vol, veh/h	119		508			439
Approach Delay, s/veh	12.0		12.1			11.0
Approach LOS	B		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	11.4	16.7			28.1	8.4
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	6.5	8.5			3.9	3.6
Green Ext Time (p_c), s	0.5	2.4			1.1	0.2

Intersection Summary	
HCM 6th Ctrl Delay	11.6
HCM 6th LOS	B

1: Tinloy St /Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.0	0.1
Total Del/Veh (s)	3.5	14.6	4.4	6.9

2: SR 49 On-Ramp/Tinloy St & Auburn 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)	3.7	6.2	12.9	7.1

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.4	2.0	1.0
Total Del/Veh (s)	12.7	4.4	8.1	7.2	6.2

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	1.0	2.9	1.0
Total Del/Veh (s)	5.0	9.0	22.4	39.5	18.1

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.6	3.8	20.2	8.4

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.4	1.4	0.0	0.2
Total Del/Veh (s)	5.6	8.7	10.6	0.9	5.2

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.4	2.1	1.3
Total Del/Veh (s)	11.9	12.7	5.9	8.6

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.9	0.0	0.1	0.3
Total Del/Veh (s)	6.2	4.8	6.8	5.5

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.1
Total Del/Veh (s)	5.6	7.8	0.5	4.1

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

Cumulative plus Project 0630-0730 AM
To Centennial
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	13	3.0	0.093	5.0	LOS A	0.4	9.7	0.49	0.39	0.49	34.8
8	T1	21	3.0	0.093	5.0	LOS A	0.4	9.7	0.49	0.39	0.49	34.7
18	R2	48	3.0	0.093	5.0	LOS A	0.4	9.7	0.49	0.39	0.49	33.7
Approach		82	3.0	0.093	5.0	LOS A	0.4	9.7	0.49	0.39	0.49	34.1
East: Idaho Maryland Rd												
1	L2	149	3.0	0.131	4.3	LOS A	0.5	13.8	0.34	0.22	0.34	32.8
6	T1	71	3.0	0.165	4.6	LOS A	0.7	17.7	0.35	0.23	0.35	35.3
16	R2	116	3.0	0.165	4.6	LOS A	0.7	17.7	0.35	0.23	0.35	34.2
Approach		336	3.0	0.165	4.5	LOS A	0.7	17.7	0.34	0.22	0.34	33.8
North: Main St												
7	L2	77	3.0	0.215	5.2	LOS A	0.9	22.7	0.37	0.26	0.37	34.3
4	T1	165	3.0	0.215	5.2	LOS A	0.9	22.7	0.37	0.26	0.37	34.2
14	R2	78	3.0	0.048	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		319	3.0	0.215	3.9	LOS A	0.9	22.7	0.28	0.19	0.28	34.9
West: Main St												
5	L2	173	3.0	0.357	7.5	LOS A	1.6	40.9	0.52	0.47	0.52	32.6
2	T1	152	3.0	0.357	7.5	LOS A	1.6	40.9	0.52	0.47	0.52	32.6
12	R2	25	3.0	0.357	7.5	LOS A	1.6	40.9	0.52	0.47	0.52	31.7
Approach		349	3.0	0.357	7.5	LOS A	1.6	40.9	0.52	0.47	0.52	32.6
All Vehicles		1087	3.0	0.357	5.3	LOS A	1.6	40.9	0.39	0.30	0.39	33.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	18.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	378	5	0	0	0	0	104	170	168	360	0
Future Vol, veh/h	62	378	5	0	0	0	0	104	170	168	360	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	67	411	5	0	0	0	0	113	185	183	391	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	16.2	16.8	20.9
HCM LOS	C	C	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	25%	0%	100%	0%
Vol Thru, %	38%	75%	97%	0%	100%
Vol Right, %	62%	0%	3%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	274	251	194	168	360
LT Vol	0	62	0	168	0
Through Vol	104	189	189	0	360
RT Vol	170	0	5	0	0
Lane Flow Rate	298	273	211	183	391
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.535	0.535	0.405	0.359	0.714
Departure Headway (Hd)	6.465	7.059	6.915	7.078	6.568
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	557	510	519	506	548
Service Time	4.53	4.825	4.68	4.844	4.335
HCM Lane V/C Ratio	0.535	0.535	0.407	0.362	0.714
HCM Control Delay	16.8	17.7	14.3	13.8	24.2
HCM Lane LOS	C	C	B	B	C
HCM 95th-tile Q	3.1	3.1	1.9	1.6	5.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	342	50	70	681	180	259
Future Volume (veh/h)	342	50	70	681	180	259
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	364	53	74	724	191	276
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	447	65	99	1018	301	756
Arrive On Green	0.28	0.28	0.31	0.31	0.17	0.17
Sat Flow, veh/h	1596	232	322	3403	1781	1585
Grp Volume(v), veh/h	0	417	426	372	191	276
Grp Sat Flow(s),veh/h/ln	0	1829	1854	1777	1781	1585
Q Serve(g_s), s	0.0	12.3	12.0	10.6	5.8	6.4
Cycle Q Clear(g_c), s	0.0	12.3	12.0	10.6	5.8	6.4
Prop In Lane		0.13	0.17		1.00	1.00
Lane Grp Cap(c), veh/h	0	512	570	547	301	756
V/C Ratio(X)	0.00	0.81	0.75	0.68	0.63	0.37
Avail Cap(c_a), veh/h	0	797	808	775	777	1179
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	19.5	18.1	17.6	22.4	9.6
Incr Delay (d2), s/veh	0.0	3.7	2.4	1.5	2.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.2	4.9	4.1	2.4	3.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	23.2	20.4	19.1	24.6	9.9
LnGrp LOS	A	C	C	B	C	A
Approach Vol, veh/h	417			798	467	
Approach Delay, s/veh	23.2			19.8	15.9	
Approach LOS	C			B	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	14.5	21.0	22.6
Change Period (Y+Rc), s	* 4.7	* 4.7	4.7
Max Green Setting (Gmax), s	* 25	* 25	25.3
Max Q Clear Time (g_c+I1), s	8.4	14.3	14.0
Green Ext Time (p_c), s	1.4	1.9	3.9

Intersection Summary	
HCM 6th Ctrl Delay	19.6
HCM 6th LOS	B

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)	500	94	35	649	124	57
Future Volume (veh/h)	500	94	35	649	124	57
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	1900	1900
Adj Flow Rate, veh/h	543	102	38	705	135	62
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	842	158	54	1043	176	81
Arrive On Green	0.28	0.28	0.30	0.30	0.15	0.15
Sat Flow, veh/h	3081	559	178	3554	1169	537
Grp Volume(v), veh/h	322	323	398	345	198	0
Grp Sat Flow(s),veh/h/ln	1777	1770	1861	1777	1715	0
Q Serve(g_s), s	8.4	8.4	10.0	8.9	5.8	0.0
Cycle Q Clear(g_c), s	8.4	8.4	10.0	8.9	5.8	0.0
Prop In Lane		0.32	0.10		0.68	0.31
Lane Grp Cap(c), veh/h	501	499	561	536	258	0
V/C Ratio(X)	0.64	0.65	0.71	0.64	0.77	0.00
Avail Cap(c_a), veh/h	1361	1355	895	854	306	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	16.6	16.6	16.3	15.9	21.5	0.0
Incr Delay (d2), s/veh	1.4	1.4	1.7	1.3	9.4	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	3.2	3.2	4.0	3.3	2.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.0	18.0	18.0	17.2	30.8	0.0
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	645			743	198	
Approach Delay, s/veh	18.0			17.6	30.8	
Approach LOS	B			B	C	

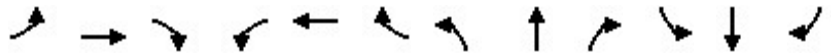
Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	12.5	19.5	20.6
Change Period (Y+Rc), s	4.6	* 4.7	4.7
Max Green Setting (Gmax), s	9.4	* 40	25.3
Max Q Clear Time (g_c+I1), s	7.8	10.4	12.0
Green Ext Time (p_c), s	0.1	4.4	3.9

Intersection Summary	
HCM 6th Ctrl Delay	19.4
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* 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)	3	65	217	32	31	69	191	582	70	137	479	14
Future Volume (veh/h)	3	65	217	32	31	69	191	582	70	137	479	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	69	231	34	33	73	203	619	74	146	510	15
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	10	241	434	71	69	122	247	671	80	167	1283	38
Arrive On Green	0.13	0.13	0.13	0.08	0.08	0.08	0.14	0.41	0.41	0.09	0.36	0.36
Sat Flow, veh/h	78	1789	1585	926	898	1585	1781	1639	196	1781	3525	104
Grp Volume(v), veh/h	72	0	231	67	0	73	203	0	693	146	257	268
Grp Sat Flow(s),veh/h/ln	1866	0	1585	1824	0	1585	1781	0	1835	1781	1777	1852
Q Serve(g_s), s	2.6	0.0	9.1	2.6	0.0	3.3	8.1	0.0	26.4	5.9	7.9	7.9
Cycle Q Clear(g_c), s	2.6	0.0	9.1	2.6	0.0	3.3	8.1	0.0	26.4	5.9	7.9	7.9
Prop In Lane	0.04		1.00	0.51		1.00	1.00		0.11	1.00		0.06
Lane Grp Cap(c), veh/h	251	0	434	140	0	122	247	0	751	167	647	674
V/C Ratio(X)	0.29	0.00	0.53	0.48	0.00	0.60	0.82	0.00	0.92	0.87	0.40	0.40
Avail Cap(c_a), veh/h	251	0	434	370	0	321	361	0	806	167	647	674
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.6	0.0	22.7	32.5	0.0	32.8	30.8	0.0	20.6	32.9	17.4	17.4
Incr Delay (d2), s/veh	0.6	0.0	1.3	2.5	0.0	4.6	9.4	0.0	15.5	36.4	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	3.4	1.2	0.0	1.4	4.0	0.0	13.5	4.2	3.1	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.3	0.0	24.0	35.0	0.0	37.5	40.1	0.0	36.1	69.3	17.8	17.8
LnGrp LOS	C	A	C	D	A	D	D	A	D	E	B	B
Approach Vol, veh/h		303			140			896			671	
Approach Delay, s/veh		25.2			36.3			37.0			29.0	
Approach LOS		C			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	35.8		15.0	15.3	32.5		10.8
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1
Max Green Setting (Gmax), s	6.9	32.3		9.9	14.9	24.3		14.9
Max Q Clear Time (g_c+I1), s	7.9	28.4		11.1	10.1	9.9		5.3
Green Ext Time (p_c), s	0.0	1.7		0.0	0.2	2.7		0.3

Intersection Summary	
HCM 6th Ctrl Delay	32.5
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	141	126	57	677	640	70
Future Vol, veh/h	141	126	57	677	640	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	145	130	59	698	660	72

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1512	366	732	0	-	0
Stage 1	696	-	-	-	-	-
Stage 2	816	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	~ 121	632	870	-	-	-
Stage 1	457	-	-	-	-	-
Stage 2	434	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 113	632	870	-	-	-
Mov Cap-2 Maneuver	308	-	-	-	-	-
Stage 1	426	-	-	-	-	-
Stage 2	434	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.9	0.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	870	-	308	632	-	-
HCM Lane V/C Ratio	0.068	-	0.472	0.206	-	-
HCM Control Delay (s)	9.4	-	26.7	12.2	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.2	-	2.4	0.8	-	-

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

Intersection	
Intersection Delay, s/veh	27.2
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	33	10	16	25	77	13	376	23	129	465	62
Future Vol, veh/h	38	33	10	16	25	77	13	376	23	129	465	62
Peak Hour Factor	0.94	0.90	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	37	11	17	27	82	14	400	24	137	495	66
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	11.8	11.7	23.2	34.4
HCM LOS	B	B	C	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	47%	14%	100%	0%
Vol Thru, %	0%	94%	41%	21%	0%	88%
Vol Right, %	0%	6%	12%	65%	0%	12%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	13	399	81	118	129	527
LT Vol	13	0	38	16	129	0
Through Vol	0	376	33	25	0	465
RT Vol	0	23	10	77	0	62
Lane Flow Rate	14	424	88	126	137	561
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.026	0.725	0.176	0.234	0.243	0.902
Departure Headway (Hd)	6.698	6.149	7.225	6.709	6.38	5.789
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	531	582	499	539	560	622
Service Time	4.487	3.937	5.234	4.709	4.158	3.567
HCM Lane V/C Ratio	0.026	0.729	0.176	0.234	0.245	0.902
HCM Control Delay	9.7	23.6	11.8	11.7	11.2	40.1
HCM Lane LOS	A	C	B	B	B	E
HCM 95th-tile Q	0.1	6.1	0.6	0.9	0.9	11.1

Intersection	
Int Delay, s/veh	24.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	91	216	191	285	350	117
Future Vol, veh/h	91	216	191	285	350	117
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	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	99	235	208	310	380	127

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	208	0	-	0	641	208
Stage 1	-	-	-	-	208	-
Stage 2	-	-	-	-	433	-
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	1363	-	-	0	439	832
Stage 1	-	-	-	0	827	-
Stage 2	-	-	-	0	654	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1363	-	-	-	407	832
Mov Cap-2 Maneuver	-	-	-	-	407	-
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	654	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	48.9
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1363	-	-	407	832
HCM Lane V/C Ratio	0.073	-	-	0.935	0.153
HCM Control Delay (s)	7.8	-	-	61.9	10.1
HCM Lane LOS	A	-	-	F	B
HCM 95th %tile Q(veh)	0.2	-	-	10.4	0.5

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	32	9	1	380	482	10
Future Vol, veh/h	32	9	1	380	482	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	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	10	1	413	524	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	945	530	535	0	-	0
Stage 1	530	-	-	-	-	-
Stage 2	415	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	291	549	1033	-	-	-
Stage 1	590	-	-	-	-	-
Stage 2	666	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	291	549	1033	-	-	-
Mov Cap-2 Maneuver	485	-	-	-	-	-
Stage 1	589	-	-	-	-	-
Stage 2	666	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1033	-	498	-	-
HCM Lane V/C Ratio	0.001	-	0.089	-	-
HCM Control Delay (s)	8.5	-	12.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	70	0	0	95	0	10
Future Vol, veh/h	70	0	0	95	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	76	0	0	103	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	76	0	179	76
Stage 1	-	-	-	-	76	-
Stage 2	-	-	-	-	103	-
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	-	-	1523	-	811	985
Stage 1	-	-	-	-	947	-
Stage 2	-	-	-	-	921	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1523	-	811	985
Mov Cap-2 Maneuver	-	-	-	-	811	-
Stage 1	-	-	-	-	947	-
Stage 2	-	-	-	-	921	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	985	-	-	1523	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	8.7	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	140	0	8	238	0	8
Future Vol, veh/h	140	0	8	238	0	8
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	152	0	9	259	0	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	152	0	429	152
Stage 1	-	-	-	-	152	-
Stage 2	-	-	-	-	277	-
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	-	-	1429	-	583	894
Stage 1	-	-	-	-	876	-
Stage 2	-	-	-	-	770	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1429	-	579	894
Mov Cap-2 Maneuver	-	-	-	-	633	-
Stage 1	-	-	-	-	876	-
Stage 2	-	-	-	-	765	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	894	-	-	1429	-
HCM Lane V/C Ratio	0.01	-	-	0.006	-
HCM Control Delay (s)	9.1	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	322	146	13	384	332	37
Future Volume (veh/h)	322	146	13	384	332	37
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	1900	1900
Adj Flow Rate, veh/h	350	159	14	417	361	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	550	466	39	838	454	50
Arrive On Green	0.29	0.29	0.02	0.45	0.29	0.29
Sat Flow, veh/h	1870	1585	1781	1870	1580	175
Grp Volume(v), veh/h	350	159	14	417	402	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1760	0
Q Serve(g_s), s	5.8	2.8	0.3	5.6	7.5	0.0
Cycle Q Clear(g_c), s	5.8	2.8	0.3	5.6	7.5	0.0
Prop In Lane		1.00	1.00		0.90	0.10
Lane Grp Cap(c), veh/h	550	466	39	838	505	0
V/C Ratio(X)	0.64	0.34	0.36	0.50	0.80	0.00
Avail Cap(c_a), veh/h	1596	1353	366	1333	758	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	10.9	9.8	17.1	7.0	11.7	0.0
Incr Delay (d2), s/veh	1.2	0.4	5.5	0.5	3.5	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	1.9	0.8	0.2	1.5	2.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.1	10.3	22.7	7.4	15.2	0.0
LnGrp LOS	B	B	C	A	B	A
Approach Vol, veh/h	509			431	402	
Approach Delay, s/veh	11.5			7.9	15.2	
Approach LOS	B			A	B	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		14.9	5.5	15.1		20.6
Change Period (Y+Rc), s		* 4.7	* 4.7	* 4.7		* 4.7
Max Green Setting (Gmax), s		* 15	* 7.3	* 30		* 25
Max Q Clear Time (g_c+I1), s		9.5	2.3	7.8		7.6
Green Ext Time (p_c), s		0.7	0.0	2.7		2.4

Intersection Summary	
HCM 6th Ctrl Delay	11.5
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	14.5
Intersection LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	244	114	182	95	158	230
Future Vol, veh/h	244	114	182	95	158	230
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	265	124	198	103	172	250
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	17.5	13.2	12.6
HCM LOS	C	B	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	68%	0%	100%	0%
Vol Thru, %	32%	66%	0%	0%
Vol Right, %	0%	34%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	358	277	158	230
LT Vol	244	0	158	0
Through Vol	114	182	0	0
RT Vol	0	95	0	230
Lane Flow Rate	389	301	172	250
Geometry Grp	2	2	7	7
Degree of Util (X)	0.616	0.461	0.33	0.396
Departure Headway (Hd)	5.696	5.515	6.916	5.696
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	634	650	520	630
Service Time	3.741	3.564	4.662	3.442
HCM Lane V/C Ratio	0.614	0.463	0.331	0.397
HCM Control Delay	17.5	13.2	13.1	12.2
HCM Lane LOS	C	B	B	B
HCM 95th-tile Q	4.2	2.4	1.4	1.9

Intersection	
Intersection Delay, s/veh	214.3
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	133	441	426	418	379	139
Future Vol, veh/h	133	441	426	418	379	139
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	145	479	463	454	412	151
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	108.4	393.1	40.5
HCM LOS	F	F	E

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	50%	23%	0%	0%
Vol Thru, %	50%	0%	100%	0%
Vol Right, %	0%	77%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	844	574	379	139
LT Vol	426	133	0	0
Through Vol	418	0	379	0
RT Vol	0	441	0	139
Lane Flow Rate	917	624	412	151
Geometry Grp	5	2	7	7
Degree of Util (X)	1.814	1.128	0.872	0.291
Departure Headway (Hd)	7.589	7.712	9.241	8.508
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	486	474	395	426
Service Time	5.589	5.712	6.941	6.208
HCM Lane V/C Ratio	1.887	1.316	1.043	0.354
HCM Control Delay	393.1	108.4	49.9	14.7
HCM Lane LOS	F	F	E	B
HCM 95th-tile Q	54.2	18.3	8.6	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	183	349	412	78	182	460
Future Volume (veh/h)	183	349	412	78	182	460
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	199	379	448	85	198	500
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	424	604	566	480	255	1010
Arrive On Green	0.24	0.24	0.31	0.31	0.15	0.55
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	199	379	448	85	198	500
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	5.2	10.4	11.8	2.1	5.8	8.9
Cycle Q Clear(g_c), s	5.2	10.4	11.8	2.1	5.8	8.9
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	424	604	566	480	255	1010
V/C Ratio(X)	0.47	0.63	0.79	0.18	0.78	0.49
Avail Cap(c_a), veh/h	465	641	1046	887	657	1704
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	1.00
Uniform Delay (d), s/veh	17.0	13.0	16.6	13.3	21.7	7.2
Incr Delay (d2), s/veh	0.8	1.8	2.5	0.2	5.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	3.3	4.3	0.6	2.3	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.8	14.8	19.2	13.4	26.7	7.6
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	578		533			698
Approach Delay, s/veh	15.8		18.2			13.0
Approach LOS	B		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.8	22.1			35.0	17.7
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	7.8	13.8			10.9	12.4
Green Ext Time (p_c), s	0.4	2.5			3.1	0.4

Intersection Summary	
HCM 6th Ctrl Delay	15.5
HCM 6th LOS	B

1: Tinloy St /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)	11.5	14.6	5.7	9.0

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	1.0	0.9	0.6
Total Del/Veh (s)	5.1	8.1	15.9	9.5

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.7	2.1	1.1
Total Del/Veh (s)	20.5	10.2	17.3	16.7	14.2

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.5	2.8	0.5
Total Del/Veh (s)	12.7	13.4	16.8	34.5	17.2

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	10.3	10.6	28.4	14.8

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.6	1.6	0.0	0.6
Total Del/Veh (s)	20.2	40.6	44.6	13.7	30.2

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.8	2.7	1.0
Total Del/Veh (s)	13.9	13.9	18.2	15.0

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.6	0.0	0.2	0.7
Total Del/Veh (s)	19.3	13.4	20.3	16.9

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.4	0.3
Total Del/Veh (s)	11.6	9.6	1.8	7.6

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

Centennial plus Project 1530-1630 PM
To Centennial
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	57	3.0	0.275	7.4	LOS A	1.2	31.8	0.59	0.54	0.59	33.3
8	T1	63	3.0	0.275	7.4	LOS A	1.2	31.8	0.59	0.54	0.59	33.2
18	R2	106	3.0	0.275	7.4	LOS A	1.2	31.8	0.59	0.54	0.59	32.3
Approach		226	3.0	0.275	7.4	LOS A	1.2	31.8	0.59	0.54	0.59	32.8
East: Idaho Maryland Rd												
1	L2	382	3.0	0.379	7.6	LOS A	1.9	47.8	0.53	0.45	0.53	31.4
6	T1	266	3.0	0.465	8.9	LOS A	2.6	67.5	0.58	0.51	0.60	33.1
16	R2	206	3.0	0.465	8.9	LOS A	2.6	67.5	0.58	0.51	0.60	32.1
Approach		854	3.0	0.465	8.3	LOS A	2.6	67.5	0.56	0.48	0.57	32.1
North: Main St												
7	L2	115	3.0	0.483	11.7	LOS B	2.8	71.6	0.69	0.80	1.02	31.2
4	T1	245	3.0	0.483	11.7	LOS B	2.8	71.6	0.69	0.80	1.02	31.2
14	R2	333	3.0	0.205	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		693	3.0	0.483	6.1	LOS A	2.8	71.6	0.36	0.41	0.53	33.8
West: Main St												
5	L2	215	3.0	0.539	13.4	LOS B	3.4	87.8	0.72	0.87	1.17	30.0
2	T1	135	3.0	0.539	13.4	LOS B	3.4	87.8	0.72	0.87	1.17	29.9
12	R2	39	3.0	0.539	13.4	LOS B	3.4	87.8	0.72	0.87	1.17	29.2
Approach		389	3.0	0.539	13.4	LOS B	3.4	87.8	0.72	0.87	1.17	29.9
All Vehicles		2161	3.0	0.539	8.4	LOS A	3.4	87.8	0.53	0.54	0.67	32.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	208	6	0	0	0	0	67	66	118	237	0
Future Vol, veh/h	37	208	6	0	0	0	0	67	66	118	237	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	226	7	0	0	0	0	73	72	128	258	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	10.4	10.1	11.3
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	26%	0%	100%	0%
Vol Thru, %	50%	74%	95%	0%	100%
Vol Right, %	50%	0%	5%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	133	141	110	118	237
LT Vol	0	37	0	118	0
Through Vol	67	104	104	0	237
RT Vol	66	0	6	0	0
Lane Flow Rate	145	153	120	128	258
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.219	0.255	0.193	0.212	0.39
Departure Headway (Hd)	5.454	5.99	5.819	5.956	5.452
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	652	595	611	599	654
Service Time	3.544	3.779	3.608	3.735	3.231
HCM Lane V/C Ratio	0.222	0.257	0.196	0.214	0.394
HCM Control Delay	10.1	10.8	10	10.4	11.7
HCM Lane LOS	B	B	A	B	B
HCM 95th-tile Q	0.8	1	0.7	0.8	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	135	28	23	310	73	128
Future Volume (veh/h)	135	28	23	310	73	128
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	147	30	25	337	79	139
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	280	57	52	743	354	662
Arrive On Green	0.19	0.19	0.22	0.22	0.20	0.20
Sat Flow, veh/h	1507	308	240	3489	1781	1585
Grp Volume(v), veh/h	0	177	194	168	79	139
Grp Sat Flow(s),veh/h/ln	0	1815	1858	1777	1781	1585
Q Serve(g_s), s	0.0	3.1	3.2	2.9	1.3	2.0
Cycle Q Clear(g_c), s	0.0	3.1	3.2	2.9	1.3	2.0
Prop In Lane		0.17	0.13		1.00	1.00
Lane Grp Cap(c), veh/h	0	337	406	389	354	662
V/C Ratio(X)	0.00	0.52	0.48	0.43	0.22	0.21
Avail Cap(c_a), veh/h	0	1292	1322	1264	1268	1475
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	13.1	12.1	12.0	11.9	6.6
Incr Delay (d2), s/veh	0.0	1.3	0.9	0.8	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.1	1.1	1.0	0.4	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	14.3	13.0	12.7	12.3	6.8
LnGrp LOS	A	B	B	B	B	A
Approach Vol, veh/h	177			362	218	
Approach Delay, s/veh	14.3			12.9	8.8	
Approach LOS	B			B	A	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	11.8	11.3	12.5
Change Period (Y+Rc), s	* 4.7	* 4.7	4.7
Max Green Setting (Gmax), s	* 25	* 25	25.3
Max Q Clear Time (g_c+I1), s	4.0	5.1	5.2
Green Ext Time (p_c), s	0.6	0.9	2.0

Intersection Summary	
HCM 6th Ctrl Delay	12.0
HCM 6th LOS	B

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)	246	9	2	291	31	16
Future Volume (veh/h)	246	9	2	291	31	16
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	1900	1900
Adj Flow Rate, veh/h	267	10	2	316	34	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	743	28	5	789	192	96
Arrive On Green	0.21	0.21	0.22	0.22	0.17	0.17
Sat Flow, veh/h	3587	130	22	3718	1120	560
Grp Volume(v), veh/h	135	142	171	147	52	0
Grp Sat Flow(s),veh/h/ln	1777	1847	1869	1777	1714	0
Q Serve(g_s), s	2.3	2.3	2.8	2.5	0.9	0.0
Cycle Q Clear(g_c), s	2.3	2.3	2.8	2.5	0.9	0.0
Prop In Lane		0.07	0.01		0.65	0.33
Lane Grp Cap(c), veh/h	378	393	407	387	293	0
V/C Ratio(X)	0.36	0.36	0.42	0.38	0.18	0.00
Avail Cap(c_a), veh/h	2040	2120	1347	1281	459	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	11.8	11.8	11.8	11.7	12.4	0.0
Incr Delay (d2), s/veh	0.6	0.6	0.7	0.6	0.3	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	0.8	0.8	1.0	0.8	0.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.4	12.3	12.5	12.3	12.7	0.0
LnGrp LOS	B	B	B	B	B	A
Approach Vol, veh/h	277			318	52	
Approach Delay, s/veh	12.3			12.4	12.7	
Approach LOS	B			B	B	

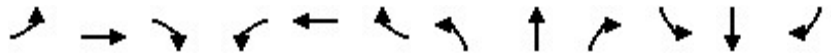
Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	10.6	12.2	12.3
Change Period (Y+Rc), s	4.6	* 4.7	4.7
Max Green Setting (Gmax), s	9.4	* 40	25.3
Max Q Clear Time (g_c+I1), s	2.9	4.3	4.8
Green Ext Time (p_c), s	0.0	1.7	1.7

Intersection Summary	
HCM 6th Ctrl Delay	12.4
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* 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)	1	34	147	26	16	50	92	247	36	100	305	1
Future Volume (veh/h)	1	34	147	26	16	50	92	247	36	100	305	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	37	160	28	17	54	100	268	39	109	332	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	6	228	349	106	64	149	168	380	55	146	820	2
Arrive On Green	0.13	0.13	0.13	0.09	0.09	0.09	0.09	0.24	0.24	0.08	0.23	0.23
Sat Flow, veh/h	49	1819	1585	1129	685	1585	1781	1596	232	1781	3634	11
Grp Volume(v), veh/h	38	0	160	45	0	54	100	0	307	109	162	171
Grp Sat Flow(s),veh/h/ln	1868	0	1585	1814	0	1585	1781	0	1829	1781	1777	1868
Q Serve(g_s), s	0.8	0.0	4.0	1.1	0.0	1.5	2.5	0.0	7.0	2.7	3.6	3.6
Cycle Q Clear(g_c), s	0.8	0.0	4.0	1.1	0.0	1.5	2.5	0.0	7.0	2.7	3.6	3.6
Prop In Lane	0.03		1.00	0.62		1.00	1.00		0.13	1.00		0.01
Lane Grp Cap(c), veh/h	234	0	349	171	0	149	168	0	435	146	401	421
V/C Ratio(X)	0.16	0.00	0.46	0.26	0.00	0.36	0.59	0.00	0.71	0.75	0.40	0.41
Avail Cap(c_a), veh/h	405	0	494	593	0	518	582	0	1295	269	947	995
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.8	0.0	15.4	19.2	0.0	19.4	19.8	0.0	15.9	20.5	15.1	15.1
Incr Delay (d2), s/veh	0.3	0.0	0.9	0.8	0.0	1.5	3.3	0.0	2.1	7.3	0.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.3	0.4	0.0	0.5	1.1	0.0	2.8	1.3	1.3	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.1	0.0	16.4	20.0	0.0	20.9	23.1	0.0	18.0	27.8	15.7	15.7
LnGrp LOS	B	A	B	C	A	C	C	A	B	C	B	B
Approach Vol, veh/h		198			99			407			442	
Approach Delay, s/veh		16.7			20.5			19.3			18.7	
Approach LOS		B			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.8	16.6		10.8	9.4	16.0		9.4
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1
Max Green Setting (Gmax), s	6.9	32.3		9.9	14.9	24.3		14.9
Max Q Clear Time (g_c+I1), s	4.7	9.0		6.0	4.5	5.6		3.5
Green Ext Time (p_c), s	0.0	1.8		0.2	0.1	1.8		0.2

Intersection Summary	
HCM 6th Ctrl Delay	18.7
HCM 6th LOS	B

Notes

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

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	34	65	18	312	448	28
Future Vol, veh/h	34	65	18	312	448	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	71	20	339	487	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	881	259	517	0	-	0
Stage 1	502	-	-	-	-	-
Stage 2	379	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	301	741	1047	-	-	-
Stage 1	574	-	-	-	-	-
Stage 2	691	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	295	741	1047	-	-	-
Mov Cap-2 Maneuver	480	-	-	-	-	-
Stage 1	563	-	-	-	-	-
Stage 2	691	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.3	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1047	-	480	741	-	-
HCM Lane V/C Ratio	0.019	-	0.077	0.095	-	-
HCM Control Delay (s)	8.5	-	13.1	10.4	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	0.3	-	-

Intersection	
Intersection Delay, s/veh	12.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	25	10	11	15	40	11	228	11	90	343	41
Future Vol, veh/h	24	25	10	11	15	40	11	228	11	90	343	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	27	11	12	16	43	12	248	12	98	373	45
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	9.6	9.3	11.5	14
HCM LOS	A	A	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	41%	17%	100%	0%
Vol Thru, %	0%	95%	42%	23%	0%	89%
Vol Right, %	0%	5%	17%	61%	0%	11%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	11	239	59	66	90	384
LT Vol	11	0	24	11	90	0
Through Vol	0	228	25	15	0	343
RT Vol	0	11	10	40	0	41
Lane Flow Rate	12	260	64	72	98	417
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.02	0.388	0.106	0.112	0.154	0.59
Departure Headway (Hd)	5.912	5.375	5.94	5.616	5.666	5.087
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	600	662	607	642	628	701
Service Time	3.704	3.167	3.943	3.619	3.446	2.867
HCM Lane V/C Ratio	0.02	0.393	0.105	0.112	0.156	0.595
HCM Control Delay	8.8	11.6	9.6	9.3	9.5	15
HCM Lane LOS	A	B	A	A	A	B
HCM 95th-tile Q	0.1	1.8	0.4	0.4	0.5	3.9

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	29	141	81	175	248	50
Future Vol, veh/h	29	141	81	175	248	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	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	32	153	88	190	270	54

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	88	0	-	0	305	88
Stage 1	-	-	-	-	88	-
Stage 2	-	-	-	-	217	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1508	-	-	0	687	970
Stage 1	-	-	-	0	935	-
Stage 2	-	-	-	0	819	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	1508	-	-	-	673	970
Mov Cap-2 Maneuver	-	-	-	-	673	-
Stage 1	-	-	-	-	915	-
Stage 2	-	-	-	-	819	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	13.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1508	-	-	673	970
HCM Lane V/C Ratio	0.021	-	-	0.401	0.056
HCM Control Delay (s)	7.4	-	-	13.9	8.9
HCM Lane LOS	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	1.9	0.2

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	14	14	334	300	64
Future Vol, veh/h	54	14	14	334	300	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	59	15	15	363	326	70

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	754	361	396	0	-	0
Stage 1	361	-	-	-	-	-
Stage 2	393	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	377	684	1163	-	-	-
Stage 1	705	-	-	-	-	-
Stage 2	682	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	372	684	1163	-	-	-
Mov Cap-2 Maneuver	554	-	-	-	-	-
Stage 1	696	-	-	-	-	-
Stage 2	682	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.2	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1163	-	577	-	-
HCM Lane V/C Ratio	0.013	-	0.128	-	-
HCM Control Delay (s)	8.1	-	12.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	48	0	0	63	0	10
Future Vol, veh/h	48	0	0	63	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	52	0	0	68	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	52	0	120	52
Stage 1	-	-	-	-	52	-
Stage 2	-	-	-	-	68	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1554	-	876	1016
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	955	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1554	-	876	1016
Mov Cap-2 Maneuver	-	-	-	-	876	-
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	955	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1016	-	-	1554	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	72	0	8	75	0	8
Future Vol, veh/h	72	0	8	75	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	78	0	9	82	0	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	78	0	178	78
Stage 1	-	-	-	-	78	-
Stage 2	-	-	-	-	100	-
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	-	-	1520	-	812	983
Stage 1	-	-	-	-	945	-
Stage 2	-	-	-	-	924	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1520	-	807	983
Mov Cap-2 Maneuver	-	-	-	-	793	-
Stage 1	-	-	-	-	945	-
Stage 2	-	-	-	-	918	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	983	-	-	1520	-
HCM Lane V/C Ratio	0.009	-	-	0.006	-
HCM Control Delay (s)	8.7	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	131	41	3	116	47	12
Future Volume (veh/h)	131	41	3	116	47	12
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	1900	1900
Adj Flow Rate, veh/h	142	45	3	126	51	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	494	419	9	823	298	76
Arrive On Green	0.26	0.26	0.00	0.44	0.22	0.22
Sat Flow, veh/h	1870	1585	1781	1870	1365	348
Grp Volume(v), veh/h	142	45	3	126	65	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1739	0
Q Serve(g_s), s	1.7	0.6	0.0	1.1	0.8	0.0
Cycle Q Clear(g_c), s	1.7	0.6	0.0	1.1	0.8	0.0
Prop In Lane		1.00	1.00		0.78	0.20
Lane Grp Cap(c), veh/h	494	419	9	823	379	0
V/C Ratio(X)	0.29	0.11	0.34	0.15	0.17	0.00
Avail Cap(c_a), veh/h	2061	1746	473	1720	968	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	8.1	7.7	13.6	4.6	8.7	0.0
Incr Delay (d2), s/veh	0.3	0.1	21.3	0.1	0.2	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	0.5	0.1	0.1	0.2	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.4	7.8	34.9	4.7	8.9	0.0
LnGrp LOS	A	A	C	A	A	A
Approach Vol, veh/h	187			129	65	
Approach Delay, s/veh	8.2			5.4	8.9	
Approach LOS	A			A	A	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		10.7	4.8	12.0		16.8
Change Period (Y+Rc), s		* 4.7	* 4.7	* 4.7		* 4.7
Max Green Setting (Gmax), s		* 15	* 7.3	* 30		* 25
Max Q Clear Time (g_c+I1), s		2.8	2.0	3.7		3.1
Green Ext Time (p_c), s		0.1	0.0	0.9		0.6

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

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	81	63	48	32	40	74
Future Vol, veh/h	81	63	48	32	40	74
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	88	68	52	35	43	80
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	8.5	7.6	8
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	56%	0%	100%	0%
Vol Thru, %	44%	60%	0%	0%
Vol Right, %	0%	40%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	144	80	40	74
LT Vol	81	0	40	0
Through Vol	63	48	0	0
RT Vol	0	32	0	74
Lane Flow Rate	157	87	43	80
Geometry Grp	2	2	7	7
Degree of Util (X)	0.193	0.101	0.067	0.098
Departure Headway (Hd)	4.436	4.164	5.583	4.378
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	812	863	643	820
Service Time	2.447	2.176	3.3	2.095
HCM Lane V/C Ratio	0.193	0.101	0.067	0.098
HCM Control Delay	8.5	7.6	8.7	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.3	0.2	0.3

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	82	81	158	153	120	50
Future Vol, veh/h	82	81	158	153	120	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	89	88	172	166	130	54
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	9.6	11.8	8.8
HCM LOS	A	B	A

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	51%	50%	0%	0%
Vol Thru, %	49%	0%	100%	0%
Vol Right, %	0%	50%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	311	163	120	50
LT Vol	158	82	0	0
Through Vol	153	0	120	0
RT Vol	0	81	0	50
Lane Flow Rate	338	177	130	54
Geometry Grp	5	2	7	7
Degree of Util (X)	0.451	0.244	0.191	0.069
Departure Headway (Hd)	4.803	4.957	5.285	4.579
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	747	721	676	778
Service Time	2.851	3.01	3.041	2.335
HCM Lane V/C Ratio	0.452	0.245	0.192	0.069
HCM Control Delay	11.8	9.6	9.3	7.7
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	2.4	1	0.7	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	43	25	268	24	112	428
Future Volume (veh/h)	43	25	268	24	112	428
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	47	27	291	26	122	465
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	134	286	500	423	187	1015
Arrive On Green	0.08	0.08	0.27	0.27	0.11	0.56
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	47	27	291	26	122	465
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	0.7	0.4	4.0	0.4	2.0	4.4
Cycle Q Clear(g_c), s	0.7	0.4	4.0	0.4	2.0	4.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	134	286	500	423	187	1015
V/C Ratio(X)	0.35	0.09	0.58	0.06	0.65	0.46
Avail Cap(c_a), veh/h	840	914	1890	1601	1186	3078
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	1.00
Uniform Delay (d), s/veh	12.8	9.9	9.2	7.8	12.5	3.9
Incr Delay (d2), s/veh	1.5	0.1	1.1	0.1	3.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	0.9	0.1	0.7	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.3	10.0	10.2	7.9	16.3	4.2
LnGrp LOS	B	B	B	A	B	A
Approach Vol, veh/h	74		317			587
Approach Delay, s/veh	12.7		10.0			6.7
Approach LOS	B		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	8.2	13.8			22.0	7.2
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	4.0	6.0			6.4	2.7
Green Ext Time (p_c), s	0.2	1.6			2.9	0.1

Intersection Summary	
HCM 6th Ctrl Delay	8.2
HCM 6th LOS	A

1: Tinloy St /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)	12.5	21.5	5.8	12.2

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.9	0.0	0.2
Total Del/Veh (s)	4.7	7.6	18.8	9.1

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.5	2.1	1.1
Total Del/Veh (s)	17.5	7.2	11.0	10.9	9.7

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.4	2.8	0.7
Total Del/Veh (s)	8.5	13.1	13.5	36.8	16.4

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.3	4.4	23.3	8.7

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.7	1.5	0.0	0.5
Total Del/Veh (s)	9.8	16.5	13.9	3.5	10.5

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.7	3.0	1.4
Total Del/Veh (s)	10.8	11.1	5.7	8.9

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.0	0.0	0.1	0.3
Total Del/Veh (s)	7.9	8.6	8.5	8.4

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.3	0.2
Total Del/Veh (s)	6.7	8.0	1.1	4.5

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

Cumulative plus Project 1830-1930 PM
To Centennial
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	38	3.0	0.107	4.9	LOS A	0.4	11.4	0.47	0.36	0.47	34.2
8	T1	43	3.0	0.107	4.9	LOS A	0.4	11.4	0.47	0.36	0.47	34.1
18	R2	18	3.0	0.107	4.9	LOS A	0.4	11.4	0.47	0.36	0.47	33.2
Approach		99	3.0	0.107	4.9	LOS A	0.4	11.4	0.47	0.36	0.47	34.0
East: Idaho Maryland Rd												
1	L2	190	3.0	0.176	4.9	LOS A	0.7	18.9	0.39	0.28	0.39	32.5
6	T1	207	3.0	0.275	6.0	LOS A	1.3	32.5	0.43	0.32	0.43	34.7
16	R2	92	3.0	0.275	6.0	LOS A	1.3	32.5	0.43	0.32	0.43	33.6
Approach		489	3.0	0.275	5.5	LOS A	1.3	32.5	0.41	0.30	0.41	33.6
North: Main St												
7	L2	65	3.0	0.245	6.3	LOS A	1.0	25.2	0.50	0.44	0.50	33.8
4	T1	165	3.0	0.245	6.3	LOS A	1.0	25.2	0.50	0.44	0.50	33.7
14	R2	225	3.0	0.138	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		456	3.0	0.245	3.2	LOS A	1.0	25.2	0.25	0.22	0.25	35.3
West: Main St												
5	L2	176	3.0	0.326	7.2	LOS A	1.4	36.0	0.52	0.47	0.52	32.6
2	T1	112	3.0	0.326	7.2	LOS A	1.4	36.0	0.52	0.47	0.52	32.5
12	R2	23	3.0	0.326	7.2	LOS A	1.4	36.0	0.52	0.47	0.52	31.6
Approach		311	3.0	0.326	7.2	LOS A	1.4	36.0	0.52	0.47	0.52	32.5
All Vehicles		1355	3.0	0.326	5.1	LOS A	1.4	36.0	0.39	0.32	0.39	33.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	33.8
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	76	348	8	0	0	0	0	212	302	166	253	0
Future Vol, veh/h	76	348	8	0	0	0	0	212	302	166	253	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	83	378	9	0	0	0	0	230	328	180	275	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	17.7	61.4	16.6
HCM LOS	C	F	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	30%	0%	100%	0%
Vol Thru, %	41%	70%	96%	0%	100%
Vol Right, %	59%	0%	4%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	514	250	182	166	253
LT Vol	0	76	0	166	0
Through Vol	212	174	174	0	253
RT Vol	302	0	8	0	0
Lane Flow Rate	559	272	198	180	275
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.992	0.566	0.402	0.378	0.536
Departure Headway (Hd)	6.39	7.499	7.312	7.535	7.022
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	564	478	489	475	509
Service Time	4.467	5.286	5.099	5.335	4.822
HCM Lane V/C Ratio	0.991	0.569	0.405	0.379	0.54
HCM Control Delay	61.4	19.7	15	14.9	17.7
HCM Lane LOS	F	C	B	B	C
HCM 95th-tile Q	14.1	3.5	1.9	1.7	3.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	331	42	58	401	255	546
Future Volume (veh/h)	331	42	58	401	255	546
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	356	45	62	431	274	587
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	425	54	87	638	587	839
Arrive On Green	0.26	0.26	0.20	0.20	0.33	0.33
Sat Flow, veh/h	1628	206	435	3284	1781	1585
Grp Volume(v), veh/h	0	401	263	230	274	587
Grp Sat Flow(s),veh/h/ln	0	1833	1849	1777	1781	1585
Q Serve(g_s), s	0.0	13.9	9.0	8.0	8.2	18.6
Cycle Q Clear(g_c), s	0.0	13.9	9.0	8.0	8.2	18.6
Prop In Lane		0.11	0.24		1.00	1.00
Lane Grp Cap(c), veh/h	0	479	370	355	587	839
V/C Ratio(X)	0.00	0.84	0.71	0.65	0.47	0.70
Avail Cap(c_a), veh/h	0	689	694	667	669	912
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	23.5	25.1	24.8	17.9	11.8
Incr Delay (d2), s/veh	0.0	6.1	2.6	2.0	0.6	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.4	4.0	3.4	3.2	9.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	29.7	27.7	26.7	18.5	14.0
LnGrp LOS	A	C	C	C	B	B
Approach Vol, veh/h	401			493	861	
Approach Delay, s/veh	29.7			27.2	15.4	
Approach LOS	C			C	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	26.9	22.3	18.2
Change Period (Y+Rc), s	* 4.7	* 4.7	4.7
Max Green Setting (Gmax), s	* 25	* 25	25.3
Max Q Clear Time (g_c+I1), s	20.6	15.9	11.0
Green Ext Time (p_c), s	1.5	1.7	2.5

Intersection Summary	
HCM 6th Ctrl Delay	22.0
HCM 6th LOS	C

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)	724	139	26	392	84	30
Future Volume (veh/h)	724	139	26	392	84	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	1900	1900
Adj Flow Rate, veh/h	762	146	27	413	88	32
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	1172	224	44	711	127	46
Arrive On Green	0.39	0.39	0.21	0.21	0.10	0.10
Sat Flow, veh/h	3068	570	213	3517	1255	456
Grp Volume(v), veh/h	455	453	236	204	121	0
Grp Sat Flow(s),veh/h/ln	1777	1768	1860	1777	1725	0
Q Serve(g_s), s	9.8	9.8	5.4	4.9	3.2	0.0
Cycle Q Clear(g_c), s	9.8	9.8	5.4	4.9	3.2	0.0
Prop In Lane		0.32	0.11		0.73	0.26
Lane Grp Cap(c), veh/h	700	696	387	369	175	0
V/C Ratio(X)	0.65	0.65	0.61	0.55	0.69	0.00
Avail Cap(c_a), veh/h	1519	1512	998	954	381	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	11.6	11.6	16.9	16.7	20.5	0.0
Incr Delay (d2), s/veh	1.0	1.0	1.6	1.3	4.9	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	3.3	3.3	2.2	1.9	1.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.7	12.7	18.5	18.0	25.3	0.0
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	908			440	121	
Approach Delay, s/veh	12.7			18.3	25.3	
Approach LOS	B			B	C	

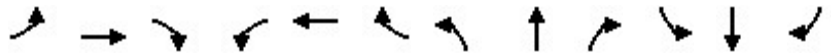
Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	9.4	23.3	14.5
Change Period (Y+Rc), s	4.6	* 4.7	4.7
Max Green Setting (Gmax), s	10.4	* 40	25.3
Max Q Clear Time (g_c+I1), s	5.2	11.8	7.4
Green Ext Time (p_c), s	0.1	6.7	2.4

Intersection Summary	
HCM 6th Ctrl Delay	15.4
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* 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	9	195	100	95	173	262	504	20	45	460	13
Future Volume (veh/h)	0	9	195	100	95	173	262	504	20	45	460	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	10	207	106	101	184	279	536	21	48	489	14
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	247	502	145	138	246	329	617	24	79	723	21
Arrive On Green	0.00	0.13	0.13	0.16	0.16	0.16	0.18	0.35	0.35	0.04	0.20	0.20
Sat Flow, veh/h	0	1870	1585	934	890	1585	1781	1788	70	1781	3528	101
Grp Volume(v), veh/h	0	10	207	207	0	184	279	0	557	48	246	257
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1824	0	1585	1781	0	1858	1781	1777	1852
Q Serve(g_s), s	0.0	0.3	6.7	7.0	0.0	7.2	9.8	0.0	18.2	1.7	8.3	8.3
Cycle Q Clear(g_c), s	0.0	0.3	6.7	7.0	0.0	7.2	9.8	0.0	18.2	1.7	8.3	8.3
Prop In Lane	0.00		1.00	0.51		1.00	1.00		0.04	1.00		0.05
Lane Grp Cap(c), veh/h	0	247	502	283	0	246	329	0	641	79	364	380
V/C Ratio(X)	0.00	0.04	0.41	0.73	0.00	0.75	0.85	0.00	0.87	0.60	0.68	0.68
Avail Cap(c_a), veh/h	0	285	534	418	0	363	408	0	837	189	664	692
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	24.6	17.4	26.2	0.0	26.2	25.6	0.0	19.9	30.5	23.8	23.9
Incr Delay (d2), s/veh	0.0	0.1	0.5	3.6	0.0	4.7	12.9	0.0	7.8	7.2	2.2	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	2.3	3.1	0.0	2.8	4.9	0.0	7.9	0.8	3.3	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	24.7	18.0	29.8	0.0	31.0	38.5	0.0	27.7	37.7	26.0	26.0
LnGrp LOS	A	C	B	C	A	C	D	A	C	D	C	C
Approach Vol, veh/h		217			391			836			551	
Approach Delay, s/veh		18.3			30.3			31.3			27.0	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	28.1		13.7	17.1	19.0		15.2
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1
Max Green Setting (Gmax), s	6.9	29.3		9.9	14.9	24.3		14.9
Max Q Clear Time (g_c+I1), s	3.7	20.2		8.7	11.8	10.3		9.2
Green Ext Time (p_c), s	0.0	2.2		0.1	0.2	2.2		0.9

Intersection Summary	
HCM 6th Ctrl Delay	28.5
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	33	47	105	756	543	195
Future Vol, veh/h	33	47	105	756	543	195
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	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	36	51	114	822	590	212

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1746	401	802	0	-	0
Stage 1	696	-	-	-	-	-
Stage 2	1050	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	86	600	819	-	-	-
Stage 1	457	-	-	-	-	-
Stage 2	336	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	74	600	819	-	-	-
Mov Cap-2 Maneuver	252	-	-	-	-	-
Stage 1	393	-	-	-	-	-
Stage 2	336	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.7	1.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	819	-	252	600	-	-
HCM Lane V/C Ratio	0.139	-	0.142	0.085	-	-
HCM Control Delay (s)	10.1	-	21.6	11.6	-	-
HCM Lane LOS	B	-	C	B	-	-
HCM 95th %tile Q(veh)	0.5	-	0.5	0.3	-	-

Intersection	
Intersection Delay, s/veh	55.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	58	22	25	25	48	181	27	560	12	52	286	29
Future Vol, veh/h	58	22	25	25	48	181	27	560	12	52	286	29
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	62	24	27	27	52	195	29	602	13	56	308	31
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	13.6	17.1	99.8	20.2
HCM LOS	B	C	F	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	55%	10%	100%	0%
Vol Thru, %	0%	98%	21%	19%	0%	91%
Vol Right, %	0%	2%	24%	71%	0%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	27	572	105	254	52	315
LT Vol	27	0	58	25	52	0
Through Vol	0	560	22	48	0	286
RT Vol	0	12	25	181	0	29
Lane Flow Rate	29	615	113	273	56	339
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.058	1.13	0.239	0.507	0.115	0.641
Departure Headway (Hd)	7.141	6.615	8.094	7.067	7.725	7.144
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	498	547	446	513	467	508
Service Time	4.939	4.412	6.094	5.067	5.425	4.844
HCM Lane V/C Ratio	0.058	1.124	0.253	0.532	0.12	0.667
HCM Control Delay	10.4	104	13.6	17.1	11.4	21.7
HCM Lane LOS	B	F	B	C	B	C
HCM 95th-tile Q	0.2	20.1	0.9	2.8	0.4	4.5

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	125	151	275	423	158	109
Future Vol, veh/h	125	151	275	423	158	109
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	133	161	293	450	168	116

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	293	0	-	0	720	293
Stage 1	-	-	-	-	293	-
Stage 2	-	-	-	-	427	-
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	1269	-	-	0	395	746
Stage 1	-	-	-	0	757	-
Stage 2	-	-	-	0	658	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1269	-	-	-	354	746
Mov Cap-2 Maneuver	-	-	-	-	354	-
Stage 1	-	-	-	-	678	-
Stage 2	-	-	-	-	658	-

Approach	EB	WB	SB
HCM Control Delay, s	3.7	0	18.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1269	-	-	354	746
HCM Lane V/C Ratio	0.105	-	-	0.475	0.155
HCM Control Delay (s)	8.2	-	-	24	10.7
HCM Lane LOS	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	-	-	2.5	0.5

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	15	22	545	241	95
Future Vol, veh/h	54	15	22	545	241	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	56	16	23	568	251	99

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	915	301	350	0	-	0
Stage 1	301	-	-	-	-	-
Stage 2	614	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	303	739	1209	-	-	-
Stage 1	751	-	-	-	-	-
Stage 2	540	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	297	739	1209	-	-	-
Mov Cap-2 Maneuver	475	-	-	-	-	-
Stage 1	737	-	-	-	-	-
Stage 2	540	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.1	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1209	-	515	-	-
HCM Lane V/C Ratio	0.019	-	0.14	-	-
HCM Control Delay (s)	8	-	13.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	95	0	0	105	0	10
Future Vol, veh/h	95	0	0	105	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	103	0	0	114	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	103	0	217	103
Stage 1	-	-	-	-	103	-
Stage 2	-	-	-	-	114	-
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	-	-	1489	-	771	952
Stage 1	-	-	-	-	921	-
Stage 2	-	-	-	-	911	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1489	-	771	952
Mov Cap-2 Maneuver	-	-	-	-	771	-
Stage 1	-	-	-	-	921	-
Stage 2	-	-	-	-	911	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	952	-	-	1489	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	8.8	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	242	343	23	250	79	12
Future Volume (veh/h)	242	343	23	250	79	12
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	1900	1900
Adj Flow Rate, veh/h	249	354	24	258	81	12
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	662	561	65	1041	167	25
Arrive On Green	0.35	0.35	0.04	0.56	0.11	0.11
Sat Flow, veh/h	1870	1585	1781	1870	1512	224
Grp Volume(v), veh/h	249	354	24	258	94	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1754	0
Q Serve(g_s), s	2.8	5.3	0.4	2.0	1.4	0.0
Cycle Q Clear(g_c), s	2.8	5.3	0.4	2.0	1.4	0.0
Prop In Lane		1.00	1.00		0.86	0.13
Lane Grp Cap(c), veh/h	662	561	65	1041	194	0
V/C Ratio(X)	0.38	0.63	0.37	0.25	0.48	0.00
Avail Cap(c_a), veh/h	2005	1699	460	1674	949	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	6.8	7.6	13.3	3.2	11.8	0.0
Incr Delay (d2), s/veh	0.4	1.2	3.5	0.1	1.9	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	0.7	1.2	0.2	0.2	0.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.2	8.8	16.8	3.3	13.7	0.0
LnGrp LOS	A	A	B	A	B	A
Approach Vol, veh/h	603			282	94	
Approach Delay, s/veh	8.1			4.5	13.7	
Approach LOS	A			A	B	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		7.8	5.7	14.7		20.4
Change Period (Y+Rc), s		* 4.7	* 4.7	* 4.7		* 4.7
Max Green Setting (Gmax), s		* 15	* 7.3	* 30		* 25
Max Q Clear Time (g_c+I1), s		3.4	2.4	7.3		4.0
Green Ext Time (p_c), s		0.2	0.0	2.8		1.4

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

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	117	128	156	138	50	121
Future Vol, veh/h	117	128	156	138	50	121
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	127	139	170	150	54	132
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	10.7	10.4	9.3
HCM LOS	B	B	A

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	48%	0%	100%	0%
Vol Thru, %	52%	53%	0%	0%
Vol Right, %	0%	47%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	245	294	50	121
LT Vol	117	0	50	0
Through Vol	128	156	0	0
RT Vol	0	138	0	121
Lane Flow Rate	266	320	54	132
Geometry Grp	2	2	7	7
Degree of Util (X)	0.36	0.396	0.096	0.188
Departure Headway (Hd)	4.87	4.461	6.349	5.136
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	735	802	561	693
Service Time	2.926	2.511	4.126	2.912
HCM Lane V/C Ratio	0.362	0.399	0.096	0.19
HCM Control Delay	10.7	10.4	9.8	9.1
HCM Lane LOS	B	B	A	A
HCM 95th-tile Q	1.6	1.9	0.3	0.7

Intersection	
Intersection Delay, s/veh	19.5
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	89	337	209	202	151	72
Future Vol, veh/h	89	337	209	202	151	72
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	97	366	227	220	164	78
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	20	23.5	11.3
HCM LOS	C	C	B

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	51%	21%	0%	0%
Vol Thru, %	49%	0%	100%	0%
Vol Right, %	0%	79%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	411	426	151	72
LT Vol	209	89	0	0
Through Vol	202	0	151	0
RT Vol	0	337	0	72
Lane Flow Rate	447	463	164	78
Geometry Grp	5	2	7	7
Degree of Util (X)	0.732	0.696	0.301	0.128
Departure Headway (Hd)	5.902	5.412	6.6	5.885
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	612	662	542	605
Service Time	3.964	3.479	4.381	3.665
HCM Lane V/C Ratio	0.73	0.699	0.303	0.129
HCM Control Delay	23.5	20	12.2	9.5
HCM Lane LOS	C	C	B	A
HCM 95th-tile Q	6.3	5.6	1.3	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	59	195	650	148	296	314
Future Volume (veh/h)	59	195	650	148	296	314
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	64	212	707	161	322	341
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	239	544	763	647	373	1290
Arrive On Green	0.14	0.14	0.42	0.42	0.21	0.71
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	64	212	707	161	322	341
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	2.3	7.1	25.2	4.6	12.2	4.6
Cycle Q Clear(g_c), s	2.3	7.1	25.2	4.6	12.2	4.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	239	544	763	647	373	1290
V/C Ratio(X)	0.27	0.39	0.93	0.25	0.86	0.26
Avail Cap(c_a), veh/h	358	650	804	682	505	1311
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	1.00
Uniform Delay (d), s/veh	26.5	16.7	18.9	13.0	26.0	3.6
Incr Delay (d2), s/veh	0.6	0.5	16.2	0.2	11.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.4	12.1	1.4	5.7	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.1	17.2	35.1	13.2	37.2	3.7
LnGrp LOS	C	B	D	B	D	A
Approach Vol, veh/h	276		868			663
Approach Delay, s/veh	19.5		31.0			20.0
Approach LOS	B		C			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	19.8	34.4			54.2	14.3
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	14.2	27.2			6.6	9.1
Green Ext Time (p_c), s	0.5	1.4			2.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	25.2
HCM 6th LOS	C

1: Tinloy St /Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.3	0.0	0.1
Total Del/Veh (s)	11.1	37.9	7.6	19.2

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.1	1.3	0.0	0.5
Total Del/Veh (s)	5.5	8.9	18.2	10.9

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.5	1.9	0.9
Total Del/Veh (s)	17.1	8.9	12.5	13.3	11.3

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.5	2.7	0.8
Total Del/Veh (s)	11.2	12.9	15.3	36.3	19.2

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.8	7.4	25.5	12.6

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.5	1.4	0.0	0.3
Total Del/Veh (s)	12.0	20.8	18.3	5.1	13.9

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	2.2	1.2
Total Del/Veh (s)	14.6	18.2	12.0	13.9

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.4	0.0	0.2	0.5
Total Del/Veh (s)	12.7	7.0	12.2	9.6

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.3	0.2
Total Del/Veh (s)	9.4	10.3	1.1	7.1

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

Cumulative plus Project AM Peak
To SR 49
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	30	3.0	0.275	8.8	LOS A	1.2	29.8	0.65	0.65	0.65	32.8
8	T1	63	3.0	0.275	8.8	LOS A	1.2	29.8	0.65	0.65	0.65	32.8
18	R2	90	3.0	0.275	8.8	LOS A	1.2	29.8	0.65	0.65	0.65	31.9
Approach		183	3.0	0.275	8.8	LOS A	1.2	29.8	0.65	0.65	0.65	32.3
East: Idaho Maryland Rd												
1	L2	264	3.0	0.283	6.8	LOS A	1.2	31.7	0.53	0.47	0.53	31.7
6	T1	163	3.0	0.458	9.3	LOS A	2.7	70.2	0.61	0.62	0.73	32.9
16	R2	264	3.0	0.458	9.3	LOS A	2.7	70.2	0.61	0.62	0.73	31.9
Approach		692	3.0	0.458	8.4	LOS A	2.7	70.2	0.58	0.56	0.65	32.0
North: Main St												
7	L2	143	3.0	0.368	8.0	LOS A	1.6	41.6	0.56	0.53	0.56	32.6
4	T1	197	3.0	0.368	8.0	LOS A	1.6	41.6	0.56	0.53	0.56	32.6
14	R2	209	3.0	0.128	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		549	3.0	0.368	5.0	LOS A	1.6	41.6	0.35	0.33	0.35	34.2
West: Main St												
5	L2	321	3.0	0.662	16.0	LOS B	6.2	158.7	0.78	1.02	1.46	28.9
2	T1	201	3.0	0.662	16.0	LOS B	6.2	158.7	0.78	1.02	1.46	28.9
12	R2	16	3.0	0.662	16.0	LOS B	6.2	158.7	0.78	1.02	1.46	28.2
Approach		538	3.0	0.662	16.0	LOS B	6.2	158.7	0.78	1.02	1.46	28.9
All Vehicles		1962	3.0	0.662	9.5	LOS A	6.2	158.7	0.58	0.63	0.79	31.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	21
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	79	324	5	0	0	0	0	132	168	177	389	0
Future Vol, veh/h	79	324	5	0	0	0	0	132	168	177	389	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	88	360	6	0	0	0	0	147	187	197	432	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	19.2	25.1
HCM LOS	C	C	D

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	33%	0%	100%	0%
Vol Thru, %	44%	67%	97%	0%	100%
Vol Right, %	56%	0%	3%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	300	241	167	177	389
LT Vol	0	79	0	177	0
Through Vol	132	162	162	0	389
RT Vol	168	0	5	0	0
Lane Flow Rate	333	268	186	197	432
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.605	0.542	0.366	0.388	0.791
Departure Headway (Hd)	6.531	7.292	7.103	7.098	6.589
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	550	493	505	505	549
Service Time	4.599	5.064	4.875	4.871	4.361
HCM Lane V/C Ratio	0.605	0.544	0.368	0.39	0.787
HCM Control Delay	19.2	18.4	14	14.3	30
HCM Lane LOS	C	C	B	B	D
HCM 95th-tile Q	4	3.2	1.7	1.8	7.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	267	38	80	840	150	266
Future Volume (veh/h)	267	38	80	840	150	266
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	297	42	89	933	167	296
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	376	53	110	1209	295	838
Arrive On Green	0.23	0.23	0.36	0.36	0.17	0.17
Sat Flow, veh/h	1603	227	302	3423	1781	1585
Grp Volume(v), veh/h	0	339	546	476	167	296
Grp Sat Flow(s),veh/h/ln	0	1830	1855	1777	1781	1585
Q Serve(g_s), s	0.0	10.4	15.8	13.9	5.1	6.4
Cycle Q Clear(g_c), s	0.0	10.4	15.8	13.9	5.1	6.4
Prop In Lane		0.12	0.16		1.00	1.00
Lane Grp Cap(c), veh/h	0	429	674	645	295	838
V/C Ratio(X)	0.00	0.79	0.81	0.74	0.57	0.35
Avail Cap(c_a), veh/h	0	778	789	755	757	1249
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	21.4	17.1	16.5	22.9	8.1
Incr Delay (d2), s/veh	0.0	3.3	5.6	3.2	1.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.5	7.0	5.5	2.1	4.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	24.7	22.7	19.7	24.6	8.4
LnGrp LOS	A	C	C	B	C	A
Approach Vol, veh/h	339			1022	463	
Approach Delay, s/veh	24.7			21.3	14.2	
Approach LOS	C			C	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	14.6	18.7	26.3
Change Period (Y+Rc), s	* 4.7	* 4.7	4.7
Max Green Setting (Gmax), s	* 25	* 25	25.3
Max Q Clear Time (g_c+I1), s	8.4	12.4	17.8
Green Ext Time (p_c), s	1.4	1.6	3.8

Intersection Summary	
HCM 6th Ctrl Delay	20.1
HCM 6th LOS	C

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)	513	77	26	809	108	35
Future Volume (veh/h)	513	77	26	809	108	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	1900	1900
Adj Flow Rate, veh/h	590	89	30	930	124	40
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	875	132	38	1237	166	54
Arrive On Green	0.28	0.28	0.35	0.35	0.13	0.13
Sat Flow, veh/h	3191	466	109	3626	1300	419
Grp Volume(v), veh/h	338	341	514	446	165	0
Grp Sat Flow(s),veh/h/ln	1777	1786	1865	1777	1730	0
Q Serve(g_s), s	9.8	9.9	14.5	12.7	5.4	0.0
Cycle Q Clear(g_c), s	9.8	9.9	14.5	12.7	5.4	0.0
Prop In Lane		0.26	0.06		0.75	0.24
Lane Grp Cap(c), veh/h	502	505	653	622	221	0
V/C Ratio(X)	0.67	0.68	0.79	0.72	0.75	0.00
Avail Cap(c_a), veh/h	1225	1232	807	769	278	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	18.6	18.6	17.0	16.5	24.6	0.0
Incr Delay (d2), s/veh	1.6	1.6	4.2	2.4	8.1	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	3.9	3.9	6.2	5.0	2.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.2	20.2	21.2	18.9	32.7	0.0
LnGrp LOS	C	C	C	B	C	A
Approach Vol, veh/h	679			960	165	
Approach Delay, s/veh	20.2			20.2	32.7	
Approach LOS	C			C	C	

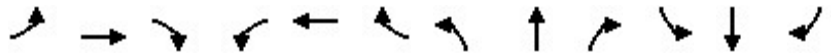
Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	12.1	21.2	25.2
Change Period (Y+Rc), s	4.6	* 4.7	4.7
Max Green Setting (Gmax), s	9.4	* 40	25.3
Max Q Clear Time (g_c+I1), s	7.4	11.9	16.5
Green Ext Time (p_c), s	0.1	4.6	4.0

Intersection Summary	
HCM 6th Ctrl Delay	21.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* 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)	3	71	254	28	34	106	273	615	77	147	534	15
Future Volume (veh/h)	3	71	254	28	34	106	273	615	77	147	534	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	73	262	29	35	109	281	634	79	152	551	15
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	10	232	491	79	95	151	322	670	84	161	1133	31
Arrive On Green	0.13	0.13	0.13	0.10	0.10	0.10	0.18	0.41	0.41	0.09	0.32	0.32
Sat Flow, veh/h	74	1793	1585	829	1000	1585	1781	1631	203	1781	3534	96
Grp Volume(v), veh/h	76	0	262	64	0	109	281	0	713	152	277	289
Grp Sat Flow(s),veh/h/ln	1867	0	1585	1829	0	1585	1781	0	1834	1781	1777	1853
Q Serve(g_s), s	2.8	0.0	9.9	2.5	0.0	5.1	11.8	0.0	28.7	6.5	9.6	9.6
Cycle Q Clear(g_c), s	2.8	0.0	9.9	2.5	0.0	5.1	11.8	0.0	28.7	6.5	9.6	9.6
Prop In Lane	0.04		1.00	0.45		1.00	1.00		0.11	1.00		0.05
Lane Grp Cap(c), veh/h	241	0	491	174	0	151	322	0	754	161	570	594
V/C Ratio(X)	0.31	0.00	0.53	0.37	0.00	0.72	0.87	0.00	0.95	0.95	0.49	0.49
Avail Cap(c_a), veh/h	241	0	491	356	0	308	347	0	774	161	570	594
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	21.8	32.5	0.0	33.7	30.5	0.0	21.7	34.7	20.9	20.9
Incr Delay (d2), s/veh	0.7	0.0	1.1	1.3	0.0	6.4	20.1	0.0	20.0	55.3	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	3.9	1.1	0.0	2.2	6.7	0.0	15.4	5.2	3.9	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.0	0.0	23.0	33.8	0.0	40.0	50.6	0.0	41.8	90.0	21.6	21.6
LnGrp LOS	C	A	C	C	A	D	D	A	D	F	C	C
Approach Vol, veh/h		338			173			994			718	
Approach Delay, s/veh		24.8			37.7			44.3			36.0	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	37.2		15.0	18.9	30.3		12.4
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1
Max Green Setting (Gmax), s	6.9	32.3		9.9	14.9	24.3		14.9
Max Q Clear Time (g_c+I1), s	8.5	30.7		11.9	13.8	11.6		7.1
Green Ext Time (p_c), s	0.0	0.8		0.0	0.1	2.8		0.4

Intersection Summary		
HCM 6th Ctrl Delay		38.1
HCM 6th LOS		D

Notes

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

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	193	91	29	770	723	87
Future Vol, veh/h	193	91	29	770	723	87
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	203	96	31	811	761	92

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1680	427	853	0	-	0
Stage 1	807	-	-	-	-	-
Stage 2	873	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	~ 94	577	784	-	-	-
Stage 1	400	-	-	-	-	-
Stage 2	408	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 90	577	784	-	-	-
Mov Cap-2 Maneuver	279	-	-	-	-	-
Stage 1	384	-	-	-	-	-
Stage 2	408	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	35.3	0.4	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	784	-	279	577	-	-
HCM Lane V/C Ratio	0.039	-	0.728	0.166	-	-
HCM Control Delay (s)	9.8	-	46	12.5	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.1	-	5.2	0.6	-	-

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

Intersection	
Intersection Delay, s/veh	49.2
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	24	27	23	40	79	22	406	34	151	574	77
Future Vol, veh/h	33	24	27	23	40	79	22	406	34	151	574	77
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	24	27	23	40	80	22	410	34	153	580	78
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	12	12.7	27.3	72.2
HCM LOS	B	B	D	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	39%	16%	100%	0%
Vol Thru, %	0%	92%	29%	28%	0%	88%
Vol Right, %	0%	8%	32%	56%	0%	12%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	22	440	84	142	151	651
LT Vol	22	0	33	23	151	0
Through Vol	0	406	24	40	0	574
RT Vol	0	34	27	79	0	77
Lane Flow Rate	22	444	85	143	153	658
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.042	0.777	0.17	0.272	0.277	1.088
Departure Headway (Hd)	7.049	6.485	7.515	7.07	6.549	5.957
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	511	560	480	512	548	612
Service Time	4.749	4.185	5.515	5.07	4.294	3.702
HCM Lane V/C Ratio	0.043	0.793	0.177	0.279	0.279	1.075
HCM Control Delay	10.1	28.2	12	12.7	11.8	86.2
HCM Lane LOS	B	D	B	B	B	F
HCM 95th-tile Q	0.1	7.1	0.6	1.1	1.1	19.3

Intersection	
Int Delay, s/veh	61.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	86	238	245	277	422	124
Future Vol, veh/h	86	238	245	277	422	124
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	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	93	259	266	301	459	135

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	266	0	-	0	711	266
Stage 1	-	-	-	-	266	-
Stage 2	-	-	-	-	445	-
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	1298	-	-	0	~ 400	773
Stage 1	-	-	-	0	779	-
Stage 2	-	-	-	0	646	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1298	-	-	-	~ 371	773
Mov Cap-2 Maneuver	-	-	-	-	~ 371	-
Stage 1	-	-	-	-	723	-
Stage 2	-	-	-	-	646	-

Approach	EB	WB	SB
HCM Control Delay, s	2.1	0	125
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1298	-	-	371	773
HCM Lane V/C Ratio	0.072	-	-	1.236	0.174
HCM Control Delay (s)	8	-	-	158.6	10.6
HCM Lane LOS	A	-	-	F	B
HCM 95th %tile Q(veh)	0.2	-	-	19.7	0.6

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

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	85	22	15	378	561	64
Future Vol, veh/h	85	22	15	378	561	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	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	92	24	16	411	610	70

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1088	645	680	0	-	0
Stage 1	645	-	-	-	-	-
Stage 2	443	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	239	472	912	-	-	-
Stage 1	522	-	-	-	-	-
Stage 2	647	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	235	472	912	-	-	-
Mov Cap-2 Maneuver	430	-	-	-	-	-
Stage 1	513	-	-	-	-	-
Stage 2	647	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.2	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	912	-	438	-	-
HCM Lane V/C Ratio	0.018	-	0.266	-	-
HCM Control Delay (s)	9	-	16.2	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.1	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	75	0	0	138	0	10
Future Vol, veh/h	75	0	0	138	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	82	0	0	150	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	82	0	232	82
Stage 1	-	-	-	-	82	-
Stage 2	-	-	-	-	150	-
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	-	-	1515	-	756	978
Stage 1	-	-	-	-	941	-
Stage 2	-	-	-	-	878	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1515	-	756	978
Mov Cap-2 Maneuver	-	-	-	-	756	-
Stage 1	-	-	-	-	941	-
Stage 2	-	-	-	-	878	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	978	-	-	1515	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	8.7	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	348	146	13	410	332	37
Future Volume (veh/h)	348	146	13	410	332	37
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	1900	1900
Adj Flow Rate, veh/h	435	182	16	512	415	46
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	617	523	43	874	485	54
Arrive On Green	0.33	0.33	0.02	0.47	0.31	0.31
Sat Flow, veh/h	1870	1585	1781	1870	1581	175
Grp Volume(v), veh/h	435	182	16	512	462	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1760	0
Q Serve(g_s), s	8.5	3.6	0.4	8.4	10.3	0.0
Cycle Q Clear(g_c), s	8.5	3.6	0.4	8.4	10.3	0.0
Prop In Lane		1.00	1.00		0.90	0.10
Lane Grp Cap(c), veh/h	617	523	43	874	540	0
V/C Ratio(X)	0.70	0.35	0.37	0.59	0.85	0.00
Avail Cap(c_a), veh/h	1361	1153	312	1136	646	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	12.2	10.6	20.0	8.1	13.6	0.0
Incr Delay (d2), s/veh	1.5	0.4	5.2	0.6	9.5	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	3.0	1.1	0.2	2.5	4.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.7	11.0	25.2	8.8	23.0	0.0
LnGrp LOS	B	B	C	A	C	A
Approach Vol, veh/h	617			528	462	
Approach Delay, s/veh	12.9			9.3	23.0	
Approach LOS	B			A	C	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		17.5	5.7	18.4		24.2
Change Period (Y+Rc), s		* 4.7	* 4.7	* 4.7		* 4.7
Max Green Setting (Gmax), s		* 15	* 7.3	* 30		* 25
Max Q Clear Time (g_c+I1), s		12.3	2.4	10.5		10.4
Green Ext Time (p_c), s		0.5	0.0	3.3		2.9

Intersection Summary	
HCM 6th Ctrl Delay	14.6
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	18.7
Intersection LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	244	140	208	100	163	230
Future Vol, veh/h	244	140	208	100	163	230
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	287	165	245	118	192	271
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	24.7	16.8	14.2
HCM LOS	C	C	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	64%	0%	100%	0%
Vol Thru, %	36%	68%	0%	0%
Vol Right, %	0%	32%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	384	308	163	230
LT Vol	244	0	163	0
Through Vol	140	208	0	0
RT Vol	0	100	0	230
Lane Flow Rate	452	362	192	271
Geometry Grp	2	2	7	7
Degree of Util (X)	0.748	0.585	0.388	0.456
Departure Headway (Hd)	5.963	5.814	7.292	6.068
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	605	616	491	590
Service Time	4.027	3.884	5.062	3.837
HCM Lane V/C Ratio	0.747	0.588	0.391	0.459
HCM Control Delay	24.7	16.8	14.7	13.9
HCM Lane LOS	C	C	B	B
HCM 95th-tile Q	6.6	3.8	1.8	2.4

Intersection	
Intersection Delay, s/veh	279.9
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	133	444	429	418	379	139
Future Vol, veh/h	133	444	429	418	379	139
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	160	535	517	504	457	167
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	163.7	495.2	57.2
HCM LOS	F	F	F

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	51%	23%	0%	0%
Vol Thru, %	49%	0%	100%	0%
Vol Right, %	0%	77%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	847	577	379	139
LT Vol	429	133	0	0
Through Vol	418	0	379	0
RT Vol	0	444	0	139
Lane Flow Rate	1020	695	457	167
Geometry Grp	5	2	7	7
Degree of Util (X)	2.042	1.272	0.968	0.322
Departure Headway (Hd)	8.031	8.061	10.052	9.313
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	459	459	365	389
Service Time	6.031	6.061	7.752	7.013
HCM Lane V/C Ratio	2.222	1.514	1.252	0.429
HCM Control Delay	495.2	163.7	72.1	16.4
HCM Lane LOS	F	F	F	C
HCM 95th-tile Q	63.8	24	10.7	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	157	363	470	48	132	627
Future Volume (veh/h)	157	363	470	48	132	627
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	171	395	511	52	143	682
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	446	564	625	530	187	995
Arrive On Green	0.26	0.26	0.34	0.34	0.11	0.54
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	171	395	511	52	143	682
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	4.4	11.7	13.8	1.2	4.3	14.6
Cycle Q Clear(g_c), s	4.4	11.7	13.8	1.2	4.3	14.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	446	564	625	530	187	995
V/C Ratio(X)	0.38	0.70	0.82	0.10	0.76	0.69
Avail Cap(c_a), veh/h	455	572	1023	867	642	1667
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	1.00
Uniform Delay (d), s/veh	16.5	14.6	16.2	12.1	23.4	8.9
Incr Delay (d2), s/veh	0.5	3.7	2.7	0.1	6.3	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	4.1	4.9	0.3	1.9	3.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.1	18.4	18.9	12.1	29.7	9.8
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	566		563			825
Approach Delay, s/veh	18.0		18.3			13.2
Approach LOS	B		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	10.9	24.3			35.2	18.7
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	6.3	15.8			16.6	13.7
Green Ext Time (p_c), s	0.3	2.7			4.7	0.1

Intersection Summary	
HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

1: Tinloy St /Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.2	0.3	0.0	0.1
Total Del/Veh (s)	16.5	63.9	10.3	26.9

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	1.0	0.0	0.4
Total Del/Veh (s)	6.5	9.3	25.9	13.6

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.7	2.1	1.2
Total Del/Veh (s)	22.6	12.1	19.5	21.1	17.2

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.5	2.7	0.7
Total Del/Veh (s)	16.0	14.0	21.1	38.2	21.1

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.2	9.9	28.7	14.3

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.6	1.6	0.0	0.6
Total Del/Veh (s)	20.7	41.6	48.0	16.0	31.8

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.8	2.7	1.0
Total Del/Veh (s)	12.6	13.5	19.5	14.7

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.6	0.1	0.2	0.7
Total Del/Veh (s)	25.4	13.8	21.6	19.6

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.5	0.3
Total Del/Veh (s)	15.5	11.1	2.0	9.7

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

Cumulative plus Project PM Peak
To SR 49
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	72	3.0	0.293	7.6	LOS A	1.3	34.4	0.59	0.55	0.59	33.1
8	T1	81	3.0	0.293	7.6	LOS A	1.3	34.4	0.59	0.55	0.59	33.0
18	R2	89	3.0	0.293	7.6	LOS A	1.3	34.4	0.59	0.55	0.59	32.1
Approach		242	3.0	0.293	7.6	LOS A	1.3	34.4	0.59	0.55	0.59	32.7
East: Idaho Maryland Rd												
1	L2	400	3.0	0.415	8.4	LOS A	2.1	53.0	0.58	0.51	0.58	31.0
6	T1	318	3.0	0.566	11.3	LOS B	4.9	126.0	0.67	0.74	0.97	32.0
16	R2	232	3.0	0.566	11.3	LOS B	4.9	126.0	0.67	0.74	0.97	31.1
Approach		949	3.0	0.566	10.1	LOS B	4.9	126.0	0.63	0.65	0.80	31.4
North: Main St												
7	L2	94	3.0	0.463	11.9	LOS B	2.5	63.5	0.69	0.80	1.01	31.2
4	T1	226	3.0	0.463	11.9	LOS B	2.5	63.5	0.69	0.80	1.01	31.1
14	R2	354	3.0	0.218	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		674	3.0	0.463	5.7	LOS A	2.5	63.5	0.33	0.38	0.48	34.0
West: Main St												
5	L2	229	3.0	0.542	13.3	LOS B	3.5	89.9	0.72	0.87	1.16	30.0
2	T1	136	3.0	0.542	13.3	LOS B	3.5	89.9	0.72	0.87	1.16	29.9
12	R2	33	3.0	0.542	13.3	LOS B	3.5	89.9	0.72	0.87	1.16	29.2
Approach		398	3.0	0.542	13.3	LOS B	3.5	89.9	0.72	0.87	1.16	29.9
All Vehicles		2263	3.0	0.566	9.1	LOS A	4.9	126.0	0.55	0.59	0.75	32.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	107	6	0	0	0	0	103	119	101	103	0
Future Vol, veh/h	20	107	6	0	0	0	0	103	119	101	103	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	116	7	0	0	0	0	112	129	110	112	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	9.2	10.3	9.2
HCM LOS	A	B	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	27%	0%	100%	0%
Vol Thru, %	46%	73%	90%	0%	100%
Vol Right, %	54%	0%	10%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	222	74	60	101	103
LT Vol	0	20	0	101	0
Through Vol	103	54	54	0	103
RT Vol	119	0	6	0	0
Lane Flow Rate	241	80	65	110	112
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.327	0.129	0.1	0.173	0.16
Departure Headway (Hd)	4.881	5.796	5.588	5.657	5.154
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	736	617	639	633	695
Service Time	2.919	3.549	3.34	3.397	2.894
HCM Lane V/C Ratio	0.327	0.13	0.102	0.174	0.161
HCM Control Delay	10.3	9.4	9	9.6	8.9
HCM Lane LOS	B	A	A	A	A
HCM 95th-tile Q	1.4	0.4	0.3	0.6	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	214	15	44	197	119	424
Future Volume (veh/h)	214	15	44	197	119	424
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	233	16	48	214	129	461
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	332	23	112	531	539	762
Arrive On Green	0.19	0.19	0.18	0.18	0.30	0.30
Sat Flow, veh/h	1730	119	630	3079	1781	1585
Grp Volume(v), veh/h	0	249	140	122	129	461
Grp Sat Flow(s),veh/h/ln	0	1849	1839	1777	1781	1585
Q Serve(g_s), s	0.0	5.4	2.9	2.6	2.3	9.2
Cycle Q Clear(g_c), s	0.0	5.4	2.9	2.6	2.3	9.2
Prop In Lane		0.06	0.34		1.00	1.00
Lane Grp Cap(c), veh/h	0	355	327	316	539	762
V/C Ratio(X)	0.00	0.70	0.43	0.39	0.24	0.61
Avail Cap(c_a), veh/h	0	1087	1081	1045	1047	1214
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	16.2	15.7	15.6	11.3	8.2
Incr Delay (d2), s/veh	0.0	2.5	0.9	0.8	0.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.2	1.1	1.0	0.8	3.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	18.8	16.6	16.4	11.5	9.0
LnGrp LOS	A	B	B	B	B	A
Approach Vol, veh/h	249			262	590	
Approach Delay, s/veh	18.8			16.5	9.5	
Approach LOS	B			B	A	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	17.7	13.0	12.4
Change Period (Y+Rc), s	* 4.7	* 4.7	4.7
Max Green Setting (Gmax), s	* 25	* 25	25.3
Max Q Clear Time (g_c+I1), s	11.2	7.4	4.9
Green Ext Time (p_c), s	1.9	1.3	1.4

Intersection Summary	
HCM 6th Ctrl Delay	13.3
HCM 6th LOS	B

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)	577	77	24	206	45	7
Future Volume (veh/h)	577	77	24	206	45	7
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	1900	1900
Adj Flow Rate, veh/h	627	84	26	224	49	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	1104	148	72	652	108	18
Arrive On Green	0.35	0.35	0.20	0.20	0.07	0.07
Sat Flow, veh/h	3244	421	360	3363	1481	242
Grp Volume(v), veh/h	353	358	134	116	58	0
Grp Sat Flow(s),veh/h/ln	1777	1795	1852	1777	1753	0
Q Serve(g_s), s	6.0	6.0	2.3	2.1	1.2	0.0
Cycle Q Clear(g_c), s	6.0	6.0	2.3	2.1	1.2	0.0
Prop In Lane		0.23	0.19		0.84	0.14
Lane Grp Cap(c), veh/h	622	629	369	354	128	0
V/C Ratio(X)	0.57	0.57	0.36	0.33	0.45	0.00
Avail Cap(c_a), veh/h	1931	1950	1264	1212	492	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	9.8	9.8	12.8	12.7	16.5	0.0
Incr Delay (d2), s/veh	0.8	0.8	0.6	0.5	2.5	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	1.8	1.8	0.8	0.7	0.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.6	10.6	13.4	13.3	19.0	0.0
LnGrp LOS	B	B	B	B	B	A
Approach Vol, veh/h	711			250	58	
Approach Delay, s/veh	10.6			13.3	19.0	
Approach LOS	B			B	B	

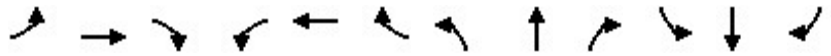
Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	7.3	17.7	12.1
Change Period (Y+Rc), s	4.6	* 4.7	4.7
Max Green Setting (Gmax), s	10.4	* 40	25.3
Max Q Clear Time (g_c+I1), s	3.2	8.0	4.3
Green Ext Time (p_c), s	0.1	5.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	11.7
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* 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	5	147	74	50	89	137	249	11	13	304	5
Future Volume (veh/h)	0	5	147	74	50	89	137	249	11	13	304	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	5	160	80	54	97	149	271	12	14	330	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	220	365	136	92	199	201	484	21	32	636	10
Arrive On Green	0.00	0.12	0.12	0.13	0.13	0.13	0.11	0.27	0.27	0.02	0.18	0.18
Sat Flow, veh/h	0	1870	1585	1084	732	1585	1781	1777	79	1781	3583	54
Grp Volume(v), veh/h	0	5	160	134	0	97	149	0	283	14	163	172
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1816	0	1585	1781	0	1856	1781	1777	1861
Q Serve(g_s), s	0.0	0.1	3.9	3.1	0.0	2.6	3.6	0.0	5.9	0.4	3.8	3.8
Cycle Q Clear(g_c), s	0.0	0.1	3.9	3.1	0.0	2.6	3.6	0.0	5.9	0.4	3.8	3.8
Prop In Lane	0.00		1.00	0.60		1.00	1.00		0.04	1.00		0.03
Lane Grp Cap(c), veh/h	0	220	365	229	0	199	201	0	506	32	316	330
V/C Ratio(X)	0.00	0.02	0.44	0.59	0.00	0.49	0.74	0.00	0.56	0.44	0.52	0.52
Avail Cap(c_a), veh/h	0	411	527	601	0	525	590	0	1208	273	959	1004
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	17.6	14.8	18.6	0.0	18.3	19.3	0.0	14.1	21.9	16.8	16.8
Incr Delay (d2), s/veh	0.0	0.0	0.8	2.4	0.0	1.8	5.4	0.0	1.0	9.3	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.2	1.3	0.0	0.9	1.5	0.0	2.0	0.2	1.3	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	17.6	15.7	21.0	0.0	20.2	24.7	0.0	15.0	31.2	18.1	18.0
LnGrp LOS	A	B	B	C	A	C	C	A	B	C	B	B
Approach Vol, veh/h		165			231			432			349	
Approach Delay, s/veh		15.7			20.6			18.4			18.6	
Approach LOS		B			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.9	18.0		10.4	10.2	13.7		10.8
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1
Max Green Setting (Gmax), s	6.9	29.3		9.9	14.9	24.3		14.9
Max Q Clear Time (g_c+I1), s	2.4	7.9		5.9	5.6	5.8		5.1
Green Ext Time (p_c), s	0.0	1.4		0.2	0.2	1.6		0.7

Intersection Summary	
HCM 6th Ctrl Delay	18.5
HCM 6th LOS	B

Notes

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

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	30	56	378	396	98
Future Vol, veh/h	20	30	56	378	396	98
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	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	22	33	61	411	430	107

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1017	269	537	0	-	0
Stage 1	484	-	-	-	-	-
Stage 2	533	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	248	730	1029	-	-	-
Stage 1	586	-	-	-	-	-
Stage 2	587	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	233	730	1029	-	-	-
Mov Cap-2 Maneuver	433	-	-	-	-	-
Stage 1	551	-	-	-	-	-
Stage 2	587	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.6	1.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1029	-	433	730	-	-
HCM Lane V/C Ratio	0.059	-	0.05	0.045	-	-
HCM Control Delay (s)	8.7	-	13.8	10.2	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.2	0.1	-	-

Intersection	
Intersection Delay, s/veh	13
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	10	21	28	25	80	23	361	6	25	186	12
Future Vol, veh/h	27	10	21	28	25	80	23	361	6	25	186	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	11	23	30	27	87	25	392	7	27	202	13
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	9.5	10.1	15.7	10.9
HCM LOS	A	B	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	47%	21%	100%	0%
Vol Thru, %	0%	98%	17%	19%	0%	94%
Vol Right, %	0%	2%	36%	60%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	23	367	58	133	25	198
LT Vol	23	0	27	28	25	0
Through Vol	0	361	10	25	0	186
RT Vol	0	6	21	80	0	12
Lane Flow Rate	25	399	63	145	27	215
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.041	0.603	0.102	0.22	0.046	0.334
Departure Headway (Hd)	5.957	5.441	5.838	5.47	6.137	5.588
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	605	666	613	656	585	644
Service Time	3.657	3.141	3.881	3.507	3.863	3.314
HCM Lane V/C Ratio	0.041	0.599	0.103	0.221	0.046	0.334
HCM Control Delay	8.9	16.1	9.5	10.1	9.2	11.1
HCM Lane LOS	A	C	A	B	A	B
HCM 95th-tile Q	0.1	4.1	0.3	0.8	0.1	1.5

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	122	49	133	258	129	48
Future Vol, veh/h	122	49	133	258	129	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	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	133	53	145	280	140	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	145	0	-	0	464	145
Stage 1	-	-	-	-	145	-
Stage 2	-	-	-	-	319	-
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	1437	-	-	0	556	902
Stage 1	-	-	-	0	882	-
Stage 2	-	-	-	0	737	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1437	-	-	-	504	902
Mov Cap-2 Maneuver	-	-	-	-	504	-
Stage 1	-	-	-	-	800	-
Stage 2	-	-	-	-	737	-

Approach	EB	WB	SB
HCM Control Delay, s	5.5	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1437	-	-	504	902
HCM Lane V/C Ratio	0.092	-	-	0.278	0.058
HCM Control Delay (s)	7.8	-	-	14.9	9.2
HCM Lane LOS	A	-	-	B	A
HCM 95th %tile Q(veh)	0.3	-	-	1.1	0.2

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	15	22	336	141	95
Future Vol, veh/h	54	15	22	336	141	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	59	16	24	365	153	103

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	618	205	256	0	-	0
Stage 1	205	-	-	-	-	-
Stage 2	413	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	453	836	1309	-	-	-
Stage 1	829	-	-	-	-	-
Stage 2	668	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	445	836	1309	-	-	-
Mov Cap-2 Maneuver	595	-	-	-	-	-
Stage 1	814	-	-	-	-	-
Stage 2	668	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.4	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1309	-	635	-	-
HCM Lane V/C Ratio	0.018	-	0.118	-	-
HCM Control Delay (s)	7.8	-	11.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	49	0	0	61	0	10
Future Vol, veh/h	49	0	0	61	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	53	0	0	66	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	53	0	119	53
Stage 1	-	-	-	-	53	-
Stage 2	-	-	-	-	66	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1553	-	877	1014
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	957	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1553	-	877	1014
Mov Cap-2 Maneuver	-	-	-	-	877	-
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	957	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1014	-	-	1553	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	176	251	7	149	41	5
Future Volume (veh/h)	176	251	7	149	41	5
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	1900	1900
Adj Flow Rate, veh/h	191	273	8	162	45	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	613	520	23	1004	112	12
Arrive On Green	0.33	0.33	0.01	0.54	0.07	0.07
Sat Flow, veh/h	1870	1585	1781	1870	1554	173
Grp Volume(v), veh/h	191	273	8	162	51	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1762	0
Q Serve(g_s), s	1.8	3.4	0.1	1.1	0.7	0.0
Cycle Q Clear(g_c), s	1.8	3.4	0.1	1.1	0.7	0.0
Prop In Lane		1.00	1.00		0.88	0.10
Lane Grp Cap(c), veh/h	613	520	23	1004	127	0
V/C Ratio(X)	0.31	0.53	0.35	0.16	0.40	0.00
Avail Cap(c_a), veh/h	2359	1999	541	1970	1122	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	6.0	6.6	11.8	2.8	10.6	0.0
Incr Delay (d2), s/veh	0.3	0.8	8.6	0.1	2.0	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	0.4	0.6	0.1	0.1	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.3	7.4	20.4	2.9	12.7	0.0
LnGrp LOS	A	A	C	A	B	A
Approach Vol, veh/h	464			170	51	
Approach Delay, s/veh	6.9			3.7	12.7	
Approach LOS	A			A	B	

Timer - Assigned Phs	2	3	4	8
Phs Duration (G+Y+Rc), s	6.4	5.0	12.6	17.6
Change Period (Y+Rc), s	* 4.7	* 4.7	* 4.7	* 4.7
Max Green Setting (Gmax), s	* 15	* 7.3	* 30	* 25
Max Q Clear Time (g_c+I1), s	2.7	2.1	5.4	3.1
Green Ext Time (p_c), s	0.1	0.0	2.1	0.8

Intersection Summary	
HCM 6th Ctrl Delay	6.6
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	50	113	106	68	32	54
Future Vol, veh/h	50	113	106	68	32	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	123	115	74	35	59
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	8.7	8.3	8.1
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	31%	0%	100%	0%
Vol Thru, %	69%	61%	0%	0%
Vol Right, %	0%	39%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	163	174	32	54
LT Vol	50	0	32	0
Through Vol	113	106	0	0
RT Vol	0	68	0	54
Lane Flow Rate	177	189	35	59
Geometry Grp	2	2	7	7
Degree of Util (X)	0.218	0.217	0.056	0.075
Departure Headway (Hd)	4.424	4.129	5.835	4.627
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	815	872	615	775
Service Time	2.436	2.14	3.559	2.351
HCM Lane V/C Ratio	0.217	0.217	0.057	0.076
HCM Control Delay	8.7	8.3	8.9	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.8	0.8	0.2	0.2

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	28	172	119	82	73	43
Future Vol, veh/h	28	172	119	82	73	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	187	129	89	79	47
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8.8	9.8	8.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	59%	14%	0%	0%
Vol Thru, %	41%	0%	100%	0%
Vol Right, %	0%	86%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	201	200	73	43
LT Vol	119	28	0	0
Through Vol	82	0	73	0
RT Vol	0	172	0	43
Lane Flow Rate	218	217	79	47
Geometry Grp	5	2	7	7
Degree of Util (X)	0.29	0.258	0.115	0.059
Departure Headway (Hd)	4.786	4.267	5.217	4.512
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	749	841	686	792
Service Time	2.823	2.294	2.957	2.251
HCM Lane V/C Ratio	0.291	0.258	0.115	0.059
HCM Control Delay	9.8	8.8	8.6	7.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.2	1	0.4	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	30	79	340	127	209	195
Future Volume (veh/h)	30	79	340	127	209	195
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	33	86	370	138	227	212
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	167	416	545	462	301	1116
Arrive On Green	0.10	0.10	0.30	0.30	0.17	0.61
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	33	86	370	138	227	212
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	0.6	1.6	6.5	2.5	4.5	1.9
Cycle Q Clear(g_c), s	0.6	1.6	6.5	2.5	4.5	1.9
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	167	416	545	462	301	1116
V/C Ratio(X)	0.20	0.21	0.68	0.30	0.75	0.19
Avail Cap(c_a), veh/h	671	865	1508	1278	947	2457
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	1.00
Uniform Delay (d), s/veh	15.2	10.3	11.3	9.9	14.4	3.1
Incr Delay (d2), s/veh	0.6	0.2	1.5	0.4	3.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.4	1.9	0.6	1.6	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.8	10.6	12.8	10.2	18.2	3.2
LnGrp LOS	B	B	B	B	B	A
Approach Vol, veh/h	119		508			439
Approach Delay, s/veh	12.0		12.1			11.0
Approach LOS	B		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	11.4	16.7			28.1	8.4
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	6.5	8.5			3.9	3.6
Green Ext Time (p_c), s	0.5	2.4			1.1	0.2

Intersection Summary	
HCM 6th Ctrl Delay	11.6
HCM 6th LOS	B

1: Tinloy St /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)	3.8	15.3	4.4	7.2

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	1.2	0.0	0.4
Total Del/Veh (s)	3.7	6.3	13.1	7.2

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.3	2.1	1.0
Total Del/Veh (s)	14.8	4.8	8.5	7.1	6.5

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.8	2.9	0.9
Total Del/Veh (s)	4.5	9.0	16.1	39.4	17.7

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.4	3.6	19.9	8.2

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.3	1.5	0.0	0.2
Total Del/Veh (s)	5.7	8.8	10.2	1.0	5.3

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.3	2.1	1.3
Total Del/Veh (s)	12.0	13.5	5.9	8.7

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.9	0.0	0.1	0.3
Total Del/Veh (s)	7.0	5.0	6.5	5.8

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.1
Total Del/Veh (s)	5.6	7.7	0.4	4.0

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

Cumulative plus Project 0630-0730 AM
To SR 49
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	13	3.0	0.093	5.0	LOS A	0.4	9.7	0.49	0.39	0.49	34.8
8	T1	21	3.0	0.093	5.0	LOS A	0.4	9.7	0.49	0.39	0.49	34.7
18	R2	48	3.0	0.093	5.0	LOS A	0.4	9.7	0.49	0.39	0.49	33.7
Approach		82	3.0	0.093	5.0	LOS A	0.4	9.7	0.49	0.39	0.49	34.1
East: Idaho Maryland Rd												
1	L2	149	3.0	0.131	4.3	LOS A	0.5	13.8	0.34	0.22	0.34	32.8
6	T1	71	3.0	0.165	4.6	LOS A	0.7	17.7	0.35	0.23	0.35	35.3
16	R2	116	3.0	0.165	4.6	LOS A	0.7	17.7	0.35	0.23	0.35	34.2
Approach		336	3.0	0.165	4.5	LOS A	0.7	17.7	0.34	0.22	0.34	33.8
North: Main St												
7	L2	77	3.0	0.215	5.2	LOS A	0.9	22.7	0.37	0.26	0.37	34.3
4	T1	165	3.0	0.215	5.2	LOS A	0.9	22.7	0.37	0.26	0.37	34.2
14	R2	78	3.0	0.048	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		319	3.0	0.215	3.9	LOS A	0.9	22.7	0.28	0.19	0.28	34.9
West: Main St												
5	L2	173	3.0	0.355	7.5	LOS A	1.6	40.7	0.52	0.46	0.52	32.7
2	T1	151	3.0	0.355	7.5	LOS A	1.6	40.7	0.52	0.46	0.52	32.6
12	R2	25	3.0	0.355	7.5	LOS A	1.6	40.7	0.52	0.46	0.52	31.7
Approach		348	3.0	0.355	7.5	LOS A	1.6	40.7	0.52	0.46	0.52	32.6
All Vehicles		1086	3.0	0.355	5.3	LOS A	1.6	40.7	0.39	0.30	0.39	33.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	18.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	378	5	0	0	0	0	104	170	168	360	0
Future Vol, veh/h	62	378	5	0	0	0	0	104	170	168	360	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	67	411	5	0	0	0	0	113	185	183	391	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	16.2	16.8	20.9
HCM LOS	C	C	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	25%	0%	100%	0%
Vol Thru, %	38%	75%	97%	0%	100%
Vol Right, %	62%	0%	3%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	274	251	194	168	360
LT Vol	0	62	0	168	0
Through Vol	104	189	189	0	360
RT Vol	170	0	5	0	0
Lane Flow Rate	298	273	211	183	391
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.535	0.535	0.405	0.359	0.714
Departure Headway (Hd)	6.465	7.059	6.915	7.078	6.568
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	557	510	519	506	548
Service Time	4.53	4.825	4.68	4.844	4.335
HCM Lane V/C Ratio	0.535	0.535	0.407	0.362	0.714
HCM Control Delay	16.8	17.7	14.3	13.8	24.2
HCM Lane LOS	C	C	B	B	C
HCM 95th-tile Q	3.1	3.1	1.9	1.6	5.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	342	50	70	681	180	259
Future Volume (veh/h)	342	50	70	681	180	259
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	364	53	74	724	191	276
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	447	65	99	1018	301	756
Arrive On Green	0.28	0.28	0.31	0.31	0.17	0.17
Sat Flow, veh/h	1596	232	322	3403	1781	1585
Grp Volume(v), veh/h	0	417	426	372	191	276
Grp Sat Flow(s),veh/h/ln	0	1829	1854	1777	1781	1585
Q Serve(g_s), s	0.0	12.3	12.0	10.6	5.8	6.4
Cycle Q Clear(g_c), s	0.0	12.3	12.0	10.6	5.8	6.4
Prop In Lane		0.13	0.17		1.00	1.00
Lane Grp Cap(c), veh/h	0	512	570	547	301	756
V/C Ratio(X)	0.00	0.81	0.75	0.68	0.63	0.37
Avail Cap(c_a), veh/h	0	797	808	775	777	1179
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	19.5	18.1	17.6	22.4	9.6
Incr Delay (d2), s/veh	0.0	3.7	2.4	1.5	2.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.2	4.9	4.1	2.4	3.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	23.2	20.4	19.1	24.6	9.9
LnGrp LOS	A	C	C	B	C	A
Approach Vol, veh/h	417			798	467	
Approach Delay, s/veh	23.2			19.8	15.9	
Approach LOS	C			B	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	14.5	21.0	22.6
Change Period (Y+Rc), s	* 4.7	* 4.7	4.7
Max Green Setting (Gmax), s	* 25	* 25	25.3
Max Q Clear Time (g_c+I1), s	8.4	14.3	14.0
Green Ext Time (p_c), s	1.4	1.9	3.9

Intersection Summary	
HCM 6th Ctrl Delay	19.6
HCM 6th LOS	B

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)	500	94	35	649	124	57
Future Volume (veh/h)	500	94	35	649	124	57
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	1900	1900
Adj Flow Rate, veh/h	543	102	38	705	135	62
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	842	158	54	1043	176	81
Arrive On Green	0.28	0.28	0.30	0.30	0.15	0.15
Sat Flow, veh/h	3081	559	178	3554	1169	537
Grp Volume(v), veh/h	322	323	398	345	198	0
Grp Sat Flow(s),veh/h/ln	1777	1770	1861	1777	1715	0
Q Serve(g_s), s	8.4	8.4	10.0	8.9	5.8	0.0
Cycle Q Clear(g_c), s	8.4	8.4	10.0	8.9	5.8	0.0
Prop In Lane		0.32	0.10		0.68	0.31
Lane Grp Cap(c), veh/h	501	499	561	536	258	0
V/C Ratio(X)	0.64	0.65	0.71	0.64	0.77	0.00
Avail Cap(c_a), veh/h	1361	1355	895	854	306	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	16.6	16.6	16.3	15.9	21.5	0.0
Incr Delay (d2), s/veh	1.4	1.4	1.7	1.3	9.4	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	3.2	3.2	4.0	3.3	2.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.0	18.0	18.0	17.2	30.8	0.0
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	645			743	198	
Approach Delay, s/veh	18.0			17.6	30.8	
Approach LOS	B			B	C	

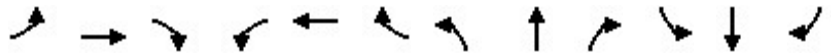
Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	12.5	19.5	20.6
Change Period (Y+Rc), s	4.6	* 4.7	4.7
Max Green Setting (Gmax), s	9.4	* 40	25.3
Max Q Clear Time (g_c+I1), s	7.8	10.4	12.0
Green Ext Time (p_c), s	0.1	4.4	3.9

Intersection Summary	
HCM 6th Ctrl Delay	19.4
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* 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)	3	65	217	32	31	69	191	590	70	137	487	14
Future Volume (veh/h)	3	65	217	32	31	69	191	590	70	137	487	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	69	231	34	33	73	203	628	74	146	518	15
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	10	240	432	71	69	121	247	676	80	166	1293	37
Arrive On Green	0.13	0.13	0.13	0.08	0.08	0.08	0.14	0.41	0.41	0.09	0.37	0.37
Sat Flow, veh/h	78	1789	1585	926	898	1585	1781	1642	193	1781	3527	102
Grp Volume(v), veh/h	72	0	231	67	0	73	203	0	702	146	261	272
Grp Sat Flow(s),veh/h/ln	1866	0	1585	1824	0	1585	1781	0	1836	1781	1777	1852
Q Serve(g_s), s	2.6	0.0	9.2	2.6	0.0	3.3	8.2	0.0	26.9	6.0	8.1	8.1
Cycle Q Clear(g_c), s	2.6	0.0	9.2	2.6	0.0	3.3	8.2	0.0	26.9	6.0	8.1	8.1
Prop In Lane	0.04		1.00	0.51		1.00	1.00		0.11	1.00		0.06
Lane Grp Cap(c), veh/h	250	0	432	140	0	121	247	0	756	166	651	679
V/C Ratio(X)	0.29	0.00	0.53	0.48	0.00	0.60	0.82	0.00	0.93	0.88	0.40	0.40
Avail Cap(c_a), veh/h	250	0	432	368	0	320	359	0	802	166	651	679
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.8	0.0	22.9	32.7	0.0	33.0	30.9	0.0	20.7	33.1	17.4	17.4
Incr Delay (d2), s/veh	0.6	0.0	1.3	2.5	0.0	4.7	9.5	0.0	16.4	37.4	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	3.4	1.2	0.0	1.4	4.0	0.0	13.9	4.2	3.2	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.5	0.0	24.2	35.2	0.0	37.7	40.5	0.0	37.1	70.5	17.8	17.8
LnGrp LOS	C	A	C	D	A	D	D	A	D	E	B	B
Approach Vol, veh/h		303			140			905			679	
Approach Delay, s/veh		25.4			36.5			37.9			29.1	
Approach LOS		C			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	36.1		15.0	15.4	32.8		10.8
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1
Max Green Setting (Gmax), s	6.9	32.3		9.9	14.9	24.3		14.9
Max Q Clear Time (g_c+I1), s	8.3	28.9		11.2	10.2	10.1		5.3
Green Ext Time (p_c), s	0.0	1.5		0.0	0.2	2.7		0.3

Intersection Summary	
HCM 6th Ctrl Delay	33.0
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	141	118	49	685	648	70
Future Vol, veh/h	141	118	49	685	648	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	145	122	51	706	668	72

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1512	370	740	0	-	0
Stage 1	704	-	-	-	-	-
Stage 2	808	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	~ 121	628	864	-	-	-
Stage 1	453	-	-	-	-	-
Stage 2	437	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 114	628	864	-	-	-
Mov Cap-2 Maneuver	309	-	-	-	-	-
Stage 1	426	-	-	-	-	-
Stage 2	437	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20	0.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	864	-	309	628	-	-
HCM Lane V/C Ratio	0.058	-	0.47	0.194	-	-
HCM Control Delay (s)	9.4	-	26.6	12.1	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.2	-	2.4	0.7	-	-

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

Intersection	
Intersection Delay, s/veh	27.2
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	33	10	16	25	77	13	376	23	129	465	62
Future Vol, veh/h	38	33	10	16	25	77	13	376	23	129	465	62
Peak Hour Factor	0.94	0.90	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	37	11	17	27	82	14	400	24	137	495	66
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	11.8	11.7	23.2	34.4
HCM LOS	B	B	C	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	47%	14%	100%	0%
Vol Thru, %	0%	94%	41%	21%	0%	88%
Vol Right, %	0%	6%	12%	65%	0%	12%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	13	399	81	118	129	527
LT Vol	13	0	38	16	129	0
Through Vol	0	376	33	25	0	465
RT Vol	0	23	10	77	0	62
Lane Flow Rate	14	424	88	126	137	561
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.026	0.725	0.176	0.234	0.243	0.902
Departure Headway (Hd)	6.698	6.149	7.225	6.709	6.38	5.789
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	531	582	499	539	560	622
Service Time	4.487	3.937	5.234	4.709	4.158	3.567
HCM Lane V/C Ratio	0.026	0.729	0.176	0.234	0.245	0.902
HCM Control Delay	9.7	23.6	11.8	11.7	11.2	40.1
HCM Lane LOS	A	C	B	B	B	E
HCM 95th-tile Q	0.1	6.1	0.6	0.9	0.9	11.1

Intersection	
Int Delay, s/veh	24.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	91	216	191	285	350	117
Future Vol, veh/h	91	216	191	285	350	117
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	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	99	235	208	310	380	127

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	208	0	-	0	641	208
Stage 1	-	-	-	-	208	-
Stage 2	-	-	-	-	433	-
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	1363	-	-	0	439	832
Stage 1	-	-	-	0	827	-
Stage 2	-	-	-	0	654	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1363	-	-	-	407	832
Mov Cap-2 Maneuver	-	-	-	-	407	-
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	654	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	48.9
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1363	-	-	407	832
HCM Lane V/C Ratio	0.073	-	-	0.935	0.153
HCM Control Delay (s)	7.8	-	-	61.9	10.1
HCM Lane LOS	A	-	-	F	B
HCM 95th %tile Q(veh)	0.2	-	-	10.4	0.5

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	32	9	1	380	482	10
Future Vol, veh/h	32	9	1	380	482	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	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	10	1	413	524	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	945	530	535	0	-	0
Stage 1	530	-	-	-	-	-
Stage 2	415	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	291	549	1033	-	-	-
Stage 1	590	-	-	-	-	-
Stage 2	666	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	291	549	1033	-	-	-
Mov Cap-2 Maneuver	485	-	-	-	-	-
Stage 1	589	-	-	-	-	-
Stage 2	666	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1033	-	498	-	-
HCM Lane V/C Ratio	0.001	-	0.089	-	-
HCM Control Delay (s)	8.5	-	12.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	70	0	0	95	0	10
Future Vol, veh/h	70	0	0	95	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	76	0	0	103	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	76	0	179	76
Stage 1	-	-	-	-	76	-
Stage 2	-	-	-	-	103	-
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	-	-	1523	-	811	985
Stage 1	-	-	-	-	947	-
Stage 2	-	-	-	-	921	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1523	-	811	985
Mov Cap-2 Maneuver	-	-	-	-	811	-
Stage 1	-	-	-	-	947	-
Stage 2	-	-	-	-	921	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	985	-	-	1523	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	8.7	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	322	146	13	384	332	37
Future Volume (veh/h)	322	146	13	384	332	37
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	1900	1900
Adj Flow Rate, veh/h	350	159	14	417	361	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	550	466	39	838	454	50
Arrive On Green	0.29	0.29	0.02	0.45	0.29	0.29
Sat Flow, veh/h	1870	1585	1781	1870	1580	175
Grp Volume(v), veh/h	350	159	14	417	402	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1760	0
Q Serve(g_s), s	5.8	2.8	0.3	5.6	7.5	0.0
Cycle Q Clear(g_c), s	5.8	2.8	0.3	5.6	7.5	0.0
Prop In Lane		1.00	1.00		0.90	0.10
Lane Grp Cap(c), veh/h	550	466	39	838	505	0
V/C Ratio(X)	0.64	0.34	0.36	0.50	0.80	0.00
Avail Cap(c_a), veh/h	1596	1353	366	1333	758	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	10.9	9.8	17.1	7.0	11.7	0.0
Incr Delay (d2), s/veh	1.2	0.4	5.5	0.5	3.5	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	1.9	0.8	0.2	1.5	2.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.1	10.3	22.7	7.4	15.2	0.0
LnGrp LOS	B	B	C	A	B	A
Approach Vol, veh/h	509			431	402	
Approach Delay, s/veh	11.5			7.9	15.2	
Approach LOS	B			A	B	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		14.9	5.5	15.1		20.6
Change Period (Y+Rc), s		* 4.7	* 4.7	* 4.7		* 4.7
Max Green Setting (Gmax), s		* 15	* 7.3	* 30		* 25
Max Q Clear Time (g_c+I1), s		9.5	2.3	7.8		7.6
Green Ext Time (p_c), s		0.7	0.0	2.7		2.4

Intersection Summary	
HCM 6th Ctrl Delay	11.5
HCM 6th LOS	B

Notes

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

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Intersection Delay, s/veh	14.5
Intersection LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	244	114	182	95	158	230
Future Vol, veh/h	244	114	182	95	158	230
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	265	124	198	103	172	250
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	17.5	13.2	12.6
HCM LOS	C	B	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	68%	0%	100%	0%
Vol Thru, %	32%	66%	0%	0%
Vol Right, %	0%	34%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	358	277	158	230
LT Vol	244	0	158	0
Through Vol	114	182	0	0
RT Vol	0	95	0	230
Lane Flow Rate	389	301	172	250
Geometry Grp	2	2	7	7
Degree of Util (X)	0.616	0.461	0.33	0.396
Departure Headway (Hd)	5.696	5.515	6.916	5.696
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	634	650	520	630
Service Time	3.741	3.564	4.662	3.442
HCM Lane V/C Ratio	0.614	0.463	0.331	0.397
HCM Control Delay	17.5	13.2	13.1	12.2
HCM Lane LOS	C	B	B	B
HCM 95th-tile Q	4.2	2.4	1.4	1.9

Intersection	
Intersection Delay, s/veh	214.3
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	133	441	426	418	379	139
Future Vol, veh/h	133	441	426	418	379	139
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	145	479	463	454	412	151
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	108.4	393.1	40.5
HCM LOS	F	F	E

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	50%	23%	0%	0%
Vol Thru, %	50%	0%	100%	0%
Vol Right, %	0%	77%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	844	574	379	139
LT Vol	426	133	0	0
Through Vol	418	0	379	0
RT Vol	0	441	0	139
Lane Flow Rate	917	624	412	151
Geometry Grp	5	2	7	7
Degree of Util (X)	1.814	1.128	0.872	0.291
Departure Headway (Hd)	7.589	7.712	9.241	8.508
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	486	474	395	426
Service Time	5.589	5.712	6.941	6.208
HCM Lane V/C Ratio	1.887	1.316	1.043	0.354
HCM Control Delay	393.1	108.4	49.9	14.7
HCM Lane LOS	F	F	E	B
HCM 95th-tile Q	54.2	18.3	8.6	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	183	349	412	78	182	460
Future Volume (veh/h)	183	349	412	78	182	460
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	199	379	448	85	198	500
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	424	604	566	480	255	1010
Arrive On Green	0.24	0.24	0.31	0.31	0.15	0.55
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	199	379	448	85	198	500
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	5.2	10.4	11.8	2.1	5.8	8.9
Cycle Q Clear(g_c), s	5.2	10.4	11.8	2.1	5.8	8.9
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	424	604	566	480	255	1010
V/C Ratio(X)	0.47	0.63	0.79	0.18	0.78	0.49
Avail Cap(c_a), veh/h	465	641	1046	887	657	1704
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	1.00
Uniform Delay (d), s/veh	17.0	13.0	16.6	13.3	21.7	7.2
Incr Delay (d2), s/veh	0.8	1.8	2.5	0.2	5.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	3.3	4.3	0.6	2.3	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.8	14.8	19.2	13.4	26.7	7.6
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	578		533			698
Approach Delay, s/veh	15.8		18.2			13.0
Approach LOS	B		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.8	22.1			35.0	17.7
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	7.8	13.8			10.9	12.4
Green Ext Time (p_c), s	0.4	2.5			3.1	0.4

Intersection Summary	
HCM 6th Ctrl Delay	15.5
HCM 6th LOS	B

1: Tinloy St /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)	12.6	16.4	5.7	9.7

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	1.0	1.0	0.6
Total Del/Veh (s)	5.0	8.4	17.3	10.0

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.7	2.2	1.2
Total Del/Veh (s)	20.6	10.4	17.3	16.7	14.3

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.6	2.8	0.6
Total Del/Veh (s)	13.5	14.3	17.6	33.8	17.8

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	10.1	10.3	29.1	14.9

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.6	1.6	0.0	0.5
Total Del/Veh (s)	20.2	40.9	43.2	14.3	30.0

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.8	2.7	1.0
Total Del/Veh (s)	13.8	14.6	18.6	15.3

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.6	0.0	0.2	0.7
Total Del/Veh (s)	21.1	13.3	20.4	17.6

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.4	0.3
Total Del/Veh (s)	11.7	9.6	1.8	7.6

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

Cumulative plus Project 1530-1630 PM
To SR 49
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	57	3.0	0.275	7.4	LOS A	1.2	31.8	0.59	0.54	0.59	33.3
8	T1	63	3.0	0.275	7.4	LOS A	1.2	31.8	0.59	0.54	0.59	33.2
18	R2	106	3.0	0.275	7.4	LOS A	1.2	31.8	0.59	0.54	0.59	32.3
Approach		226	3.0	0.275	7.4	LOS A	1.2	31.8	0.59	0.54	0.59	32.8
East: Idaho Maryland Rd												
1	L2	380	3.0	0.377	7.6	LOS A	1.9	47.4	0.53	0.45	0.53	31.4
6	T1	265	3.0	0.464	8.9	LOS A	2.6	67.0	0.58	0.51	0.60	33.1
16	R2	206	3.0	0.464	8.9	LOS A	2.6	67.0	0.58	0.51	0.60	32.1
Approach		851	3.0	0.464	8.3	LOS A	2.6	67.0	0.55	0.48	0.57	32.1
North: Main St												
7	L2	115	3.0	0.482	11.6	LOS B	2.8	71.3	0.69	0.80	1.01	31.2
4	T1	245	3.0	0.482	11.6	LOS B	2.8	71.3	0.69	0.80	1.01	31.2
14	R2	333	3.0	0.205	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		693	3.0	0.482	6.1	LOS A	2.8	71.3	0.36	0.41	0.52	33.8
West: Main St												
5	L2	215	3.0	0.539	13.3	LOS B	3.4	87.6	0.72	0.87	1.16	30.0
2	T1	135	3.0	0.539	13.3	LOS B	3.4	87.6	0.72	0.87	1.16	30.0
12	R2	39	3.0	0.539	13.3	LOS B	3.4	87.6	0.72	0.87	1.16	29.2
Approach		389	3.0	0.539	13.3	LOS B	3.4	87.6	0.72	0.87	1.16	29.9
All Vehicles		2158	3.0	0.539	8.4	LOS A	3.4	87.6	0.52	0.53	0.66	32.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	208	6	0	0	0	0	67	66	118	237	0
Future Vol, veh/h	37	208	6	0	0	0	0	67	66	118	237	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	226	7	0	0	0	0	73	72	128	258	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	10.4	10.1	11.3
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	26%	0%	100%	0%
Vol Thru, %	50%	74%	95%	0%	100%
Vol Right, %	50%	0%	5%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	133	141	110	118	237
LT Vol	0	37	0	118	0
Through Vol	67	104	104	0	237
RT Vol	66	0	6	0	0
Lane Flow Rate	145	153	120	128	258
Geometry Grp	6	7	7	7	7
Degree of Util (X)	0.219	0.255	0.193	0.212	0.39
Departure Headway (Hd)	5.454	5.99	5.819	5.956	5.452
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	652	595	611	599	654
Service Time	3.544	3.779	3.608	3.735	3.231
HCM Lane V/C Ratio	0.222	0.257	0.196	0.214	0.394
HCM Control Delay	10.1	10.8	10	10.4	11.7
HCM Lane LOS	B	B	A	B	B
HCM 95th-tile Q	0.8	1	0.7	0.8	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	135	28	23	310	73	128
Future Volume (veh/h)	135	28	23	310	73	128
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	147	30	25	337	79	139
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	280	57	52	743	354	662
Arrive On Green	0.19	0.19	0.22	0.22	0.20	0.20
Sat Flow, veh/h	1507	308	240	3489	1781	1585
Grp Volume(v), veh/h	0	177	194	168	79	139
Grp Sat Flow(s),veh/h/ln	0	1815	1858	1777	1781	1585
Q Serve(g_s), s	0.0	3.1	3.2	2.9	1.3	2.0
Cycle Q Clear(g_c), s	0.0	3.1	3.2	2.9	1.3	2.0
Prop In Lane		0.17	0.13		1.00	1.00
Lane Grp Cap(c), veh/h	0	337	406	389	354	662
V/C Ratio(X)	0.00	0.52	0.48	0.43	0.22	0.21
Avail Cap(c_a), veh/h	0	1292	1322	1264	1268	1475
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	13.1	12.1	12.0	11.9	6.6
Incr Delay (d2), s/veh	0.0	1.3	0.9	0.8	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.1	1.1	1.0	0.4	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	14.3	13.0	12.7	12.3	6.8
LnGrp LOS	A	B	B	B	B	A
Approach Vol, veh/h	177			362	218	
Approach Delay, s/veh	14.3			12.9	8.8	
Approach LOS	B			B	A	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	11.8	11.3	12.5
Change Period (Y+Rc), s	* 4.7	* 4.7	4.7
Max Green Setting (Gmax), s	* 25	* 25	25.3
Max Q Clear Time (g_c+I1), s	4.0	5.1	5.2
Green Ext Time (p_c), s	0.6	0.9	2.0

Intersection Summary	
HCM 6th Ctrl Delay	12.0
HCM 6th LOS	B

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)	246	9	2	291	31	16
Future Volume (veh/h)	246	9	2	291	31	16
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	1900	1900
Adj Flow Rate, veh/h	267	10	2	316	34	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	743	28	5	789	192	96
Arrive On Green	0.21	0.21	0.22	0.22	0.17	0.17
Sat Flow, veh/h	3587	130	22	3718	1120	560
Grp Volume(v), veh/h	135	142	171	147	52	0
Grp Sat Flow(s),veh/h/ln	1777	1847	1869	1777	1714	0
Q Serve(g_s), s	2.3	2.3	2.8	2.5	0.9	0.0
Cycle Q Clear(g_c), s	2.3	2.3	2.8	2.5	0.9	0.0
Prop In Lane		0.07	0.01		0.65	0.33
Lane Grp Cap(c), veh/h	378	393	407	387	293	0
V/C Ratio(X)	0.36	0.36	0.42	0.38	0.18	0.00
Avail Cap(c_a), veh/h	2040	2120	1347	1281	459	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	11.8	11.8	11.8	11.7	12.4	0.0
Incr Delay (d2), s/veh	0.6	0.6	0.7	0.6	0.3	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	0.8	0.8	1.0	0.8	0.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.4	12.3	12.5	12.3	12.7	0.0
LnGrp LOS	B	B	B	B	B	A
Approach Vol, veh/h	277			318	52	
Approach Delay, s/veh	12.3			12.4	12.7	
Approach LOS	B			B	B	

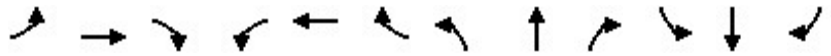
Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	10.6	12.2	12.3
Change Period (Y+Rc), s	4.6	* 4.7	4.7
Max Green Setting (Gmax), s	9.4	* 40	25.3
Max Q Clear Time (g_c+I1), s	2.9	4.3	4.8
Green Ext Time (p_c), s	0.0	1.7	1.7

Intersection Summary	
HCM 6th Ctrl Delay	12.4
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* 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)	1	34	147	26	16	50	92	255	36	100	313	1
Future Volume (veh/h)	1	34	147	26	16	50	92	255	36	100	313	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	37	160	28	17	54	100	277	39	109	340	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	6	228	348	106	64	148	168	390	55	146	838	2
Arrive On Green	0.13	0.13	0.13	0.09	0.09	0.09	0.09	0.24	0.24	0.08	0.23	0.23
Sat Flow, veh/h	49	1819	1585	1129	685	1585	1781	1604	226	1781	3635	11
Grp Volume(v), veh/h	38	0	160	45	0	54	100	0	316	109	166	175
Grp Sat Flow(s),veh/h/ln	1868	0	1585	1814	0	1585	1781	0	1830	1781	1777	1868
Q Serve(g_s), s	0.8	0.0	4.0	1.1	0.0	1.5	2.5	0.0	7.3	2.8	3.7	3.7
Cycle Q Clear(g_c), s	0.8	0.0	4.0	1.1	0.0	1.5	2.5	0.0	7.3	2.8	3.7	3.7
Prop In Lane	0.03		1.00	0.62		1.00	1.00		0.12	1.00		0.01
Lane Grp Cap(c), veh/h	234	0	348	170	0	148	168	0	444	146	410	431
V/C Ratio(X)	0.16	0.00	0.46	0.26	0.00	0.36	0.60	0.00	0.71	0.75	0.41	0.41
Avail Cap(c_a), veh/h	402	0	490	588	0	513	577	0	1285	267	939	987
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.0	0.0	15.6	19.4	0.0	19.6	20.0	0.0	15.9	20.7	15.0	15.0
Incr Delay (d2), s/veh	0.3	0.0	0.9	0.8	0.0	1.5	3.4	0.0	2.1	7.5	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.3	0.4	0.0	0.5	1.1	0.0	2.9	1.3	1.3	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.3	0.0	16.5	20.2	0.0	21.1	23.4	0.0	18.1	28.1	15.7	15.6
LnGrp LOS	B	A	B	C	A	C	C	A	B	C	B	B
Approach Vol, veh/h		198			99			416			450	
Approach Delay, s/veh		16.9			20.7			19.3			18.7	
Approach LOS		B			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.9	16.9		10.9	9.4	16.3		9.4
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1
Max Green Setting (Gmax), s	6.9	32.3		9.9	14.9	24.3		14.9
Max Q Clear Time (g_c+I1), s	4.8	9.3		6.0	4.5	5.7		3.5
Green Ext Time (p_c), s	0.0	1.9		0.2	0.1	1.8		0.2

Intersection Summary	
HCM 6th Ctrl Delay	18.8
HCM 6th LOS	B

Notes

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

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	34	57	10	320	456	28
Future Vol, veh/h	34	57	10	320	456	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	200	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	62	11	348	496	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	881	263	526	0	-	0
Stage 1	511	-	-	-	-	-
Stage 2	370	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	301	736	1039	-	-	-
Stage 1	568	-	-	-	-	-
Stage 2	698	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	298	736	1039	-	-	-
Mov Cap-2 Maneuver	481	-	-	-	-	-
Stage 1	562	-	-	-	-	-
Stage 2	698	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.3	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1039	-	481	736	-	-
HCM Lane V/C Ratio	0.01	-	0.077	0.084	-	-
HCM Control Delay (s)	8.5	-	13.1	10.3	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	0.3	-	-

Intersection	
Intersection Delay, s/veh	12.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	25	10	11	15	40	11	228	11	90	343	41
Future Vol, veh/h	24	25	10	11	15	40	11	228	11	90	343	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	27	11	12	16	43	12	248	12	98	373	45
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	9.6	9.3	11.5	14
HCM LOS	A	A	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	41%	17%	100%	0%
Vol Thru, %	0%	95%	42%	23%	0%	89%
Vol Right, %	0%	5%	17%	61%	0%	11%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	11	239	59	66	90	384
LT Vol	11	0	24	11	90	0
Through Vol	0	228	25	15	0	343
RT Vol	0	11	10	40	0	41
Lane Flow Rate	12	260	64	72	98	417
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.02	0.388	0.106	0.112	0.154	0.59
Departure Headway (Hd)	5.912	5.375	5.94	5.616	5.666	5.087
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	600	662	607	642	628	701
Service Time	3.704	3.167	3.943	3.619	3.446	2.867
HCM Lane V/C Ratio	0.02	0.393	0.105	0.112	0.156	0.595
HCM Control Delay	8.8	11.6	9.6	9.3	9.5	15
HCM Lane LOS	A	B	A	A	A	B
HCM 95th-tile Q	0.1	1.8	0.4	0.4	0.5	3.9

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	29	141	81	175	248	50
Future Vol, veh/h	29	141	81	175	248	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	120	-	-	-	100	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	32	153	88	190	270	54

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	88	0	-	0	305	88
Stage 1	-	-	-	-	88	-
Stage 2	-	-	-	-	217	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1508	-	-	0	687	970
Stage 1	-	-	-	0	935	-
Stage 2	-	-	-	0	819	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1508	-	-	-	673	970
Mov Cap-2 Maneuver	-	-	-	-	673	-
Stage 1	-	-	-	-	915	-
Stage 2	-	-	-	-	819	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	13.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	1508	-	-	673	970
HCM Lane V/C Ratio	0.021	-	-	0.401	0.056
HCM Control Delay (s)	7.4	-	-	13.9	8.9
HCM Lane LOS	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	1.9	0.2

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	14	14	334	300	64
Future Vol, veh/h	54	14	14	334	300	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	500	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	59	15	15	363	326	70

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	754	361	396	0	-	0
Stage 1	361	-	-	-	-	-
Stage 2	393	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	377	684	1163	-	-	-
Stage 1	705	-	-	-	-	-
Stage 2	682	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	372	684	1163	-	-	-
Mov Cap-2 Maneuver	554	-	-	-	-	-
Stage 1	696	-	-	-	-	-
Stage 2	682	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.2	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1163	-	577	-	-
HCM Lane V/C Ratio	0.013	-	0.128	-	-
HCM Control Delay (s)	8.1	-	12.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	48	0	0	63	0	10
Future Vol, veh/h	48	0	0	63	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	52	0	0	68	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	52	0	120	52
Stage 1	-	-	-	-	52	-
Stage 2	-	-	-	-	68	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1554	-	876	1016
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	955	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1554	-	876	1016
Mov Cap-2 Maneuver	-	-	-	-	876	-
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	955	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1016	-	-	1554	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	131	41	3	116	47	12
Future Volume (veh/h)	131	41	3	116	47	12
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	1900	1900
Adj Flow Rate, veh/h	142	45	3	126	51	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	494	419	9	823	298	76
Arrive On Green	0.26	0.26	0.00	0.44	0.22	0.22
Sat Flow, veh/h	1870	1585	1781	1870	1365	348
Grp Volume(v), veh/h	142	45	3	126	65	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1739	0
Q Serve(g_s), s	1.7	0.6	0.0	1.1	0.8	0.0
Cycle Q Clear(g_c), s	1.7	0.6	0.0	1.1	0.8	0.0
Prop In Lane		1.00	1.00		0.78	0.20
Lane Grp Cap(c), veh/h	494	419	9	823	379	0
V/C Ratio(X)	0.29	0.11	0.34	0.15	0.17	0.00
Avail Cap(c_a), veh/h	2061	1746	473	1720	968	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	8.1	7.7	13.6	4.6	8.7	0.0
Incr Delay (d2), s/veh	0.3	0.1	21.3	0.1	0.2	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	0.5	0.1	0.1	0.2	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.4	7.8	34.9	4.7	8.9	0.0
LnGrp LOS	A	A	C	A	A	A
Approach Vol, veh/h	187			129	65	
Approach Delay, s/veh	8.2			5.4	8.9	
Approach LOS	A			A	A	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		10.7	4.8	12.0		16.8
Change Period (Y+Rc), s		* 4.7	* 4.7	* 4.7		* 4.7
Max Green Setting (Gmax), s		* 15	* 7.3	* 30		* 25
Max Q Clear Time (g_c+I1), s		2.8	2.0	3.7		3.1
Green Ext Time (p_c), s		0.1	0.0	0.9		0.6

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

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	81	63	48	32	40	74
Future Vol, veh/h	81	63	48	32	40	74
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	88	68	52	35	43	80
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	8.5	7.6	8
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	56%	0%	100%	0%
Vol Thru, %	44%	60%	0%	0%
Vol Right, %	0%	40%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	144	80	40	74
LT Vol	81	0	40	0
Through Vol	63	48	0	0
RT Vol	0	32	0	74
Lane Flow Rate	157	87	43	80
Geometry Grp	2	2	7	7
Degree of Util (X)	0.193	0.101	0.067	0.098
Departure Headway (Hd)	4.436	4.164	5.583	4.378
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	812	863	643	820
Service Time	2.447	2.176	3.3	2.095
HCM Lane V/C Ratio	0.193	0.101	0.067	0.098
HCM Control Delay	8.5	7.6	8.7	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.3	0.2	0.3

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	82	81	158	153	120	50
Future Vol, veh/h	82	81	158	153	120	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	89	88	172	166	130	54
Number of Lanes	1	0	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	9.6	11.8	8.8
HCM LOS	A	B	A

Lane	NBLn1	EBLn1	SBLn1	SBLn2
Vol Left, %	51%	50%	0%	0%
Vol Thru, %	49%	0%	100%	0%
Vol Right, %	0%	50%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	311	163	120	50
LT Vol	158	82	0	0
Through Vol	153	0	120	0
RT Vol	0	81	0	50
Lane Flow Rate	338	177	130	54
Geometry Grp	5	2	7	7
Degree of Util (X)	0.451	0.244	0.191	0.069
Departure Headway (Hd)	4.803	4.957	5.285	4.579
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	747	721	676	778
Service Time	2.851	3.01	3.041	2.335
HCM Lane V/C Ratio	0.452	0.245	0.192	0.069
HCM Control Delay	11.8	9.6	9.3	7.7
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	2.4	1	0.7	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	43	25	268	24	112	428
Future Volume (veh/h)	43	25	268	24	112	428
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	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	47	27	291	26	122	465
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5
Cap, veh/h	134	286	500	423	187	1015
Arrive On Green	0.08	0.08	0.27	0.27	0.11	0.56
Sat Flow, veh/h	1739	1547	1826	1547	1739	1826
Grp Volume(v), veh/h	47	27	291	26	122	465
Grp Sat Flow(s),veh/h/ln	1739	1547	1826	1547	1739	1826
Q Serve(g_s), s	0.7	0.4	4.0	0.4	2.0	4.4
Cycle Q Clear(g_c), s	0.7	0.4	4.0	0.4	2.0	4.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	134	286	500	423	187	1015
V/C Ratio(X)	0.35	0.09	0.58	0.06	0.65	0.46
Avail Cap(c_a), veh/h	840	914	1890	1601	1186	3078
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	1.00
Uniform Delay (d), s/veh	12.8	9.9	9.2	7.8	12.5	3.9
Incr Delay (d2), s/veh	1.5	0.1	1.1	0.1	3.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	0.9	0.1	0.7	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.3	10.0	10.2	7.9	16.3	4.2
LnGrp LOS	B	B	B	A	B	A
Approach Vol, veh/h	74		317			587
Approach Delay, s/veh	12.7		10.0			6.7
Approach LOS	B		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	8.2	13.8			22.0	7.2
Change Period (Y+Rc), s	5.1	5.8			5.8	4.9
Max Green Setting (Gmax), s	19.9	30.2			49.2	14.1
Max Q Clear Time (g_c+I1), s	4.0	6.0			6.4	2.7
Green Ext Time (p_c), s	0.2	1.6			2.9	0.1

Intersection Summary	
HCM 6th Ctrl Delay	8.2
HCM 6th LOS	A

1: Tinloy St /Tinloy St & Neal St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.0	0.1
Total Del/Veh (s)	12.3	22.8	5.4	12.4

2: SR 49 On-Ramp/Tinloy St & Auburn St Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.9	0.0	0.2
Total Del/Veh (s)	4.8	7.2	18.8	9.0

8: Main St & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	1.5	2.1	1.1
Total Del/Veh (s)	16.8	7.6	11.5	11.5	10.2

9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.4	2.9	0.6
Total Del/Veh (s)	8.8	12.9	13.5	36.8	16.4

10: Brunswick Rd & SR 49/20 EB On Ramp Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.5	4.4	23.0	8.7

11: Sutton Way & Brunswick Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.6	1.5	0.0	0.5
Total Del/Veh (s)	9.4	17.5	14.1	3.8	10.7

22: SR 49 EB Ramps & Dorsey Dr Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.8	2.9	1.3
Total Del/Veh (s)	11.3	11.4	5.9	9.3

23: Dorsey Dr & Sr 49 WB Ramps Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.0	0.0	0.1	0.4
Total Del/Veh (s)	8.0	8.6	9.1	8.5

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.3	0.2
Total Del/Veh (s)	6.7	8.0	1.1	4.5

MOVEMENT SUMMARY

Site: 5 [Main St / Idaho Maryland Rd]

Cumulative plus Project 1830-1930 PM
To SR 49
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 49 Ramps												
3	L2	38	3.0	0.106	4.8	LOS A	0.4	11.2	0.46	0.35	0.46	34.2
8	T1	43	3.0	0.106	4.8	LOS A	0.4	11.2	0.46	0.35	0.46	34.2
18	R2	18	3.0	0.106	4.8	LOS A	0.4	11.2	0.46	0.35	0.46	33.2
Approach		99	3.0	0.106	4.8	LOS A	0.4	11.2	0.46	0.35	0.46	34.0
East: Idaho Maryland Rd												
1	L2	188	3.0	0.174	4.9	LOS A	0.7	18.6	0.39	0.28	0.39	32.6
6	T1	206	3.0	0.274	5.9	LOS A	1.3	32.3	0.43	0.32	0.43	34.7
16	R2	92	3.0	0.274	5.9	LOS A	1.3	32.3	0.43	0.32	0.43	33.6
Approach		486	3.0	0.274	5.5	LOS A	1.3	32.3	0.41	0.30	0.41	33.6
North: Main St												
7	L2	65	3.0	0.245	6.3	LOS A	1.0	25.2	0.49	0.44	0.49	33.8
4	T1	165	3.0	0.245	6.3	LOS A	1.0	25.2	0.49	0.44	0.49	33.8
14	R2	225	3.0	0.138	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.2
Approach		456	3.0	0.245	3.2	LOS A	1.0	25.2	0.25	0.22	0.25	35.3
West: Main St												
5	L2	176	3.0	0.313	7.0	LOS A	1.3	34.2	0.52	0.46	0.52	32.6
2	T1	100	3.0	0.313	7.0	LOS A	1.3	34.2	0.52	0.46	0.52	32.6
12	R2	23	3.0	0.313	7.0	LOS A	1.3	34.2	0.52	0.46	0.52	31.7
Approach		299	3.0	0.313	7.0	LOS A	1.3	34.2	0.52	0.46	0.52	32.5
All Vehicles		1339	3.0	0.313	5.0	LOS A	1.3	34.2	0.38	0.31	0.38	33.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBR
Lane Group Flow (vph)	168	65	110	222	497	39	331	9
v/c Ratio	0.25	0.26	0.28	0.65	0.49	0.17	0.61	0.02
Control Delay	0.9	29.0	2.7	39.7	17.6	28.8	24.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	0.9	29.0	2.7	39.7	17.6	28.8	24.3	0.0
Queue Length 50th (ft)	0	22	0	79	111	13	108	0
Queue Length 95th (ft)	0	60	9	#218	#330	42	189	0
Internal Link Dist (ft)	1255	1856			1215		1576	
Turn Bay Length (ft)				550		120		150
Base Capacity (vph)	740	339	455	339	940	339	876	839
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.19	0.24	0.65	0.53	0.12	0.38	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	158	61	0	103	209	449	18	37	311	8
Future Volume (veh/h)	0	0	158	61	0	103	209	449	18	37	311	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	168	65	0	110	222	478	19	39	331	9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	0	209	181	0	161	273	614	24	73	432	366
Arrive On Green	0.00	0.00	0.13	0.10	0.00	0.10	0.15	0.34	0.34	0.04	0.23	0.23
Sat Flow, veh/h	0	0	1585	1781	0	1585	1781	1787	71	1781	1870	1585
Grp Volume(v), veh/h	0	0	168	65	0	110	222	0	497	39	331	9
Grp Sat Flow(s),veh/h/ln	0	0	1585	1781	0	1585	1781	0	1858	1781	1870	1585
Q Serve(g_s), s	0.0	0.0	5.7	1.9	0.0	3.7	6.6	0.0	13.2	1.2	9.1	0.2
Cycle Q Clear(g_c), s	0.0	0.0	5.7	1.9	0.0	3.7	6.6	0.0	13.2	1.2	9.1	0.2
Prop In Lane	0.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	0	0	209	181	0	161	273	0	638	73	432	366
V/C Ratio(X)	0.00	0.00	0.80	0.36	0.00	0.68	0.81	0.00	0.78	0.54	0.77	0.02
Avail Cap(c_a), veh/h	0	0	286	321	0	286	321	0	822	321	827	701
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	23.2	23.0	0.0	23.8	22.5	0.0	16.2	25.8	19.7	16.3
Incr Delay (d2), s/veh	0.0	0.0	11.2	1.2	0.0	5.0	12.9	0.0	3.6	6.0	2.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	2.6	0.8	0.0	1.5	3.5	0.0	5.5	0.6	3.9	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	34.3	24.2	0.0	28.8	35.4	0.0	19.8	31.8	22.6	16.4
LnGrp LOS	A	A	C	C	A	C	D	A	B	C	C	B
Approach Vol, veh/h		168			175			719			379	
Approach Delay, s/veh		34.3			27.1			24.6			23.4	
Approach LOS		C			C			C			C	

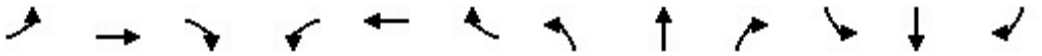
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	24.6		12.3	13.5	18.4		10.7				
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1				
Max Green Setting (Gmax), s	9.9	24.3		9.9	9.9	24.3		9.9				
Max Q Clear Time (g_c+I1), s	3.2	15.2		7.7	8.6	11.1		5.7				
Green Ext Time (p_c), s	0.0	2.1		0.2	0.1	1.6		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		25.7	
HCM 6th LOS		C	

Lane Group	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	202	24	74	241	528	93	459	14
v/c Ratio	0.33	0.13	0.23	0.84	0.68	0.42	0.73	0.02
Control Delay	1.4	31.1	1.6	58.2	22.4	34.9	26.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.4	31.1	1.6	58.2	22.4	34.9	26.2	0.1
Queue Length 50th (ft)	0	9	0	99	184	36	158	0
Queue Length 95th (ft)	0	31	0	#253	303	84	260	0
Internal Link Dist (ft)		1856			1215		1576	
Turn Bay Length (ft)				550		120		150
Base Capacity (vph)	680	287	404	287	916	258	895	848
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.08	0.18	0.84	0.58	0.36	0.51	0.02

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



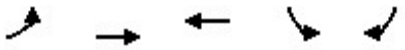
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	196	23	0	72	234	460	52	90	445	14
Future Volume (veh/h)	0	0	196	23	0	72	234	460	52	90	445	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	202	24	0	74	241	474	54	93	459	14
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	282	239	137	0	122	272	629	72	120	554	469
Arrive On Green	0.00	0.00	0.15	0.08	0.00	0.08	0.15	0.38	0.38	0.07	0.30	0.30
Sat Flow, veh/h	0	1870	1585	1781	0	1585	1781	1649	188	1781	1870	1585
Grp Volume(v), veh/h	0	0	202	24	0	74	241	0	528	93	459	14
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1781	0	1585	1781	0	1837	1781	1870	1585
Q Serve(g_s), s	0.0	0.0	8.0	0.8	0.0	2.9	8.6	0.0	16.2	3.3	14.8	0.4
Cycle Q Clear(g_c), s	0.0	0.0	8.0	0.8	0.0	2.9	8.6	0.0	16.2	3.3	14.8	0.4
Prop In Lane	0.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	0	282	239	137	0	122	272	0	700	120	554	469
V/C Ratio(X)	0.00	0.00	0.85	0.18	0.00	0.61	0.89	0.00	0.75	0.77	0.83	0.03
Avail Cap(c_a), veh/h	0	285	242	272	0	242	272	0	830	244	845	716
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	26.8	28.0	0.0	29.0	26.9	0.0	17.4	29.8	21.3	16.2
Incr Delay (d2), s/veh	0.0	0.0	22.9	0.6	0.0	4.8	27.6	0.0	3.3	10.0	4.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	4.4	0.4	0.0	1.2	5.5	0.0	6.8	1.7	6.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	49.7	28.6	0.0	33.8	54.5	0.0	20.7	39.8	25.5	16.2
LnGrp LOS	A	A	D	C	A	C	D	A	C	D	C	B
Approach Vol, veh/h		202			98			769			566	
Approach Delay, s/veh		49.7			32.6			31.3			27.6	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	30.4		14.9	15.0	24.9		10.1				
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1				
Max Green Setting (Gmax), s	8.9	29.3		9.9	9.9	29.3		9.9				
Max Q Clear Time (g_c+I1), s	5.3	18.2		10.0	10.6	16.8		4.9				
Green Ext Time (p_c), s	0.1	2.6		0.0	0.0	2.4		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		32.4	
HCM 6th LOS		C	

Notes

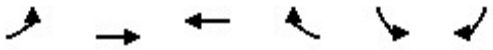
User approved pedestrian interval to be less than phase max green.



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	78	246	536	420	116
v/c Ratio	0.51	0.28	0.82	0.74	0.20
Control Delay	43.7	11.8	32.0	26.4	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	43.7	11.8	32.0	26.4	4.1
Queue Length 50th (ft)	28	49	158	137	0
Queue Length 95th (ft)	#94	119	#405	222	27
Internal Link Dist (ft)		1597	2083	2110	
Turn Bay Length (ft)	120			100	
Base Capacity (vph)	154	975	650	923	881
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.51	0.25	0.82	0.46	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	72	226	239	254	386	107
Future Volume (veh/h)	72	226	239	254	386	107
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	78	246	260	0	420	116
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	129	757	381		540	481
Arrive On Green	0.07	0.40	0.20	0.00	0.30	0.30
Sat Flow, veh/h	1781	1870	1870	0	1781	1585
Grp Volume(v), veh/h	78	246	260	0	420	116
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	0	1781	1585
Q Serve(g_s), s	1.7	3.6	5.1	0.0	8.5	2.2
Cycle Q Clear(g_c), s	1.7	3.6	5.1	0.0	8.5	2.2
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	129	757	381		540	481
V/C Ratio(X)	0.60	0.32	0.68		0.78	0.24
Avail Cap(c_a), veh/h	224	942	942		1345	1197
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	17.9	8.1	14.6	0.0	12.6	10.4
Incr Delay (d2), s/veh	4.5	0.2	2.2	0.0	2.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.9	1.8	0.0	2.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.3	8.4	16.8	0.0	15.1	10.7
LnGrp LOS	C	A	B		B	B
Approach Vol, veh/h		324	260	A	536	
Approach Delay, s/veh		11.7	16.8		14.1	
Approach LOS		B	B		B	

Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			21.2		18.5	8.0	13.2
Change Period (Y+Rc), s			5.1		6.5	5.1	5.1
Max Green Setting (Gmax), s			20.0		30.0	5.0	20.0
Max Q Clear Time (g_c+I1), s			5.6		10.5	3.7	7.1
Green Ext Time (p_c), s			1.0		1.5	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	14.0
HCM 6th LOS	B

Notes

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

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Group Flow (vph)	325	146	11	446	340
v/c Ratio	0.47	0.21	0.04	0.59	0.57
Control Delay	13.8	3.8	21.8	13.0	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	13.8	3.8	21.8	13.0	16.3
Queue Length 50th (ft)	44	0	2	66	50
Queue Length 95th (ft)	144	24	16	143	149
Internal Link Dist (ft)	1867			481	560
Turn Bay Length (ft)		175	100		
Base Capacity (vph)	1122	1011	290	1550	1061
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.29	0.14	0.04	0.29	0.32

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	260	117	9	357	240	32
Future Volume (veh/h)	260	117	9	357	240	32
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	1900	1900
Adj Flow Rate, veh/h	325	146	11	446	300	40
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	527	446	31	836	397	53
Arrive On Green	0.28	0.28	0.02	0.45	0.26	0.26
Sat Flow, veh/h	1870	1585	1781	1870	1545	206
Grp Volume(v), veh/h	325	146	11	446	341	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1756	0
Q Serve(g_s), s	4.8	2.3	0.2	5.5	5.7	0.0
Cycle Q Clear(g_c), s	4.8	2.3	0.2	5.5	5.7	0.0
Prop In Lane		1.00	1.00		0.88	0.12
Lane Grp Cap(c), veh/h	527	446	31	836	452	0
V/C Ratio(X)	0.62	0.33	0.35	0.53	0.75	0.00
Avail Cap(c_a), veh/h	1295	1097	336	1295	1215	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	9.9	9.0	15.4	6.4	10.9	0.0
Incr Delay (d2), s/veh	1.2	0.4	6.7	0.5	2.6	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	1.5	0.6	0.1	1.3	1.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.1	9.5	22.1	6.9	13.5	0.0
LnGrp LOS	B	A	C	A	B	A
Approach Vol, veh/h	471			457	341	
Approach Delay, s/veh	10.6			7.3	13.5	
Approach LOS	B			A	B	

Timer - Assigned Phs	2	3	4	8
Phs Duration (G+Y+Rc), s	12.9	5.3	13.7	18.9
Change Period (Y+Rc), s	* 4.7	* 4.7	* 4.7	* 4.7
Max Green Setting (Gmax), s	* 22	* 6	* 22	* 22
Max Q Clear Time (g_c+I1), s	7.7	2.2	6.8	7.5
Green Ext Time (p_c), s	0.9	0.0	2.2	2.4

Intersection Summary	
HCM 6th Ctrl Delay	10.2
HCM 6th LOS	B

Notes

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

User approved volume balancing among the lanes for turning movement.

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

MOVEMENT SUMMARY

Site: 15 [SR 174 / Brunswick Road]

MITIG8 Exist PM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
East: RoadName												
6	T1	260	3.0	0.434	7.3	LOS A	2.9	73.2	0.32	0.16	0.32	34.0
16	R2	276	3.0	0.434	7.3	LOS A	2.9	73.2	0.32	0.16	0.32	33.0
Approach		536	3.0	0.434	7.3	LOS A	2.9	73.2	0.32	0.16	0.32	33.5
North: RoadName												
7	L2	420	3.0	0.515	9.7	LOS A	3.3	84.4	0.60	0.48	0.60	31.0
14	R2	116	3.0	0.515	9.7	LOS A	3.3	84.4	0.60	0.48	0.60	30.1
Approach		536	3.0	0.515	9.7	LOS A	3.3	84.4	0.60	0.48	0.60	30.8
West: RoadName												
5	L2	78	3.0	0.376	8.5	LOS A	1.9	47.9	0.61	0.57	0.61	32.8
2	T1	246	3.0	0.376	8.5	LOS A	1.9	47.9	0.61	0.57	0.61	32.8
Approach		324	3.0	0.376	8.5	LOS A	1.9	47.9	0.61	0.57	0.61	32.8
All Vehicles		1396	3.0	0.515	8.5	LOS A	3.3	84.4	0.49	0.38	0.50	32.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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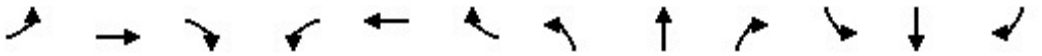
Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	203	28	50	193	531	89	444	14
v/c Ratio	0.34	0.13	0.14	0.63	0.66	0.47	0.75	0.02
Control Delay	1.5	29.2	0.9	37.8	19.7	38.9	27.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.5	29.2	0.9	37.8	19.7	38.9	27.1	0.1
Queue Length 50th (ft)	0	10	0	71	170	33	152	0
Queue Length 95th (ft)	0	34	0	#183	287	#98	255	0
Internal Link Dist (ft)	1255	1856			1215		1576	
Turn Bay Length (ft)				550		120		150
Base Capacity (vph)	679	320	436	320	1001	191	876	836
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.09	0.11	0.60	0.53	0.47	0.51	0.02

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



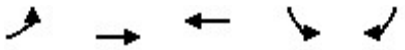
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	191	26	0	47	181	452	47	84	417	13
Future Volume (veh/h)	0	0	191	26	0	47	181	452	47	84	417	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	203	28	0	50	193	481	50	89	444	14
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	0	243	130	0	116	239	594	62	115	536	455
Arrive On Green	0.00	0.00	0.15	0.07	0.00	0.07	0.13	0.36	0.36	0.06	0.29	0.29
Sat Flow, veh/h	0	0	1585	1781	0	1585	1781	1666	173	1781	1870	1585
Grp Volume(v), veh/h	0	0	203	28	0	50	193	0	531	89	444	14
Grp Sat Flow(s),veh/h/ln	0	0	1585	1781	0	1585	1781	0	1839	1781	1870	1585
Q Serve(g_s), s	0.0	0.0	7.4	0.9	0.0	1.8	6.3	0.0	15.6	2.9	13.2	0.4
Cycle Q Clear(g_c), s	0.0	0.0	7.4	0.9	0.0	1.8	6.3	0.0	15.6	2.9	13.2	0.4
Prop In Lane	0.00		1.00	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	0	0	243	130	0	116	239	0	656	115	536	455
V/C Ratio(X)	0.00	0.00	0.83	0.22	0.00	0.43	0.81	0.00	0.81	0.77	0.83	0.03
Avail Cap(c_a), veh/h	0	0	266	299	0	266	299	0	802	179	816	691
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	24.5	26.0	0.0	26.4	25.0	0.0	17.3	27.4	19.9	15.3
Incr Delay (d2), s/veh	0.0	0.0	18.7	0.8	0.0	2.5	12.2	0.0	5.2	10.4	4.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	3.9	0.4	0.0	0.7	3.1	0.0	6.2	1.4	5.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	43.2	26.8	0.0	29.0	37.2	0.0	22.5	37.9	24.2	15.3
LnGrp LOS	A	A	D	C	A	C	D	A	C	D	C	B
Approach Vol, veh/h		203			78			724			547	
Approach Delay, s/veh		43.2			28.2			26.4			26.2	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.0	27.0		14.2	13.1	22.8		9.5				
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1				
Max Green Setting (Gmax), s	6.0	26.0		10.0	10.0	26.0		10.0				
Max Q Clear Time (g_c+I1), s	4.9	17.6		9.4	8.3	15.2		3.8				
Green Ext Time (p_c), s	0.0	2.0		0.1	0.1	1.9		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		28.7	
HCM 6th LOS		C	

Notes

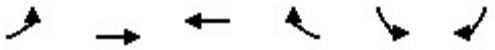
User approved pedestrian interval to be less than phase max green.



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	87	225	503	359	113
v/c Ratio	0.47	0.26	0.79	0.69	0.21
Control Delay	38.6	9.5	23.7	25.5	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	38.6	9.5	23.7	25.5	5.0
Queue Length 50th (ft)	30	40	113	109	0
Queue Length 95th (ft)	#94	83	#270	199	30
Internal Link Dist (ft)		1597	2083	2110	
Turn Bay Length (ft)	120			100	
Base Capacity (vph)	184	1189	840	744	731
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.47	0.19	0.60	0.48	0.15

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	79	205	186	272	327	103
Future Volume (veh/h)	79	205	186	272	327	103
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	87	225	204	0	359	113
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	141	795	393		474	422
Arrive On Green	0.08	0.43	0.21	0.00	0.27	0.27
Sat Flow, veh/h	1781	1870	1870	0	1781	1585
Grp Volume(v), veh/h	87	225	204	0	359	113
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	0	1781	1585
Q Serve(g_s), s	1.8	3.0	3.6	0.0	7.0	2.1
Cycle Q Clear(g_c), s	1.8	3.0	3.6	0.0	7.0	2.1
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	141	795	393		474	422
V/C Ratio(X)	0.62	0.28	0.52		0.76	0.27
Avail Cap(c_a), veh/h	237	1074	1074		957	851
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	16.8	7.1	13.2	0.0	12.7	10.9
Incr Delay (d2), s/veh	4.3	0.2	1.1	0.0	2.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.7	1.2	0.0	2.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.0	7.3	14.2	0.0	15.2	11.2
LnGrp LOS	C	A	B		B	B
Approach Vol, veh/h		312	204	A	472	
Approach Delay, s/veh		11.1	14.2		14.2	
Approach LOS		B	B		B	

Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			21.1		16.5	8.1	13.0
Change Period (Y+Rc), s			5.1		6.5	5.1	5.1
Max Green Setting (Gmax), s			21.6		20.2	5.0	21.6
Max Q Clear Time (g_c+I1), s			5.0		9.0	3.8	5.6
Green Ext Time (p_c), s			1.0		1.1	0.0	0.8

Intersection Summary		
HCM 6th Ctrl Delay		13.2
HCM 6th LOS		B

Notes

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

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Group Flow (vph)	325	146	11	446	340
v/c Ratio	0.47	0.21	0.04	0.59	0.57
Control Delay	13.8	3.8	21.8	13.0	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	13.8	3.8	21.8	13.0	16.3
Queue Length 50th (ft)	44	0	2	66	50
Queue Length 95th (ft)	144	24	16	143	149
Internal Link Dist (ft)	1867			481	560
Turn Bay Length (ft)		175	100		
Base Capacity (vph)	1122	1011	290	1550	1061
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.29	0.14	0.04	0.29	0.32

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	260	117	9	357	240	32
Future Volume (veh/h)	260	117	9	357	240	32
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	1900	1900
Adj Flow Rate, veh/h	325	146	11	446	300	40
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	527	446	31	836	397	53
Arrive On Green	0.28	0.28	0.02	0.45	0.26	0.26
Sat Flow, veh/h	1870	1585	1781	1870	1545	206
Grp Volume(v), veh/h	325	146	11	446	341	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1756	0
Q Serve(g_s), s	4.8	2.3	0.2	5.5	5.7	0.0
Cycle Q Clear(g_c), s	4.8	2.3	0.2	5.5	5.7	0.0
Prop In Lane		1.00	1.00		0.88	0.12
Lane Grp Cap(c), veh/h	527	446	31	836	452	0
V/C Ratio(X)	0.62	0.33	0.35	0.53	0.75	0.00
Avail Cap(c_a), veh/h	1295	1097	336	1295	1215	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	9.9	9.0	15.4	6.4	10.9	0.0
Incr Delay (d2), s/veh	1.2	0.4	6.7	0.5	2.6	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	1.5	0.6	0.1	1.3	1.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.1	9.5	22.1	6.9	13.5	0.0
LnGrp LOS	B	A	C	A	B	A
Approach Vol, veh/h	471			457	341	
Approach Delay, s/veh	10.6			7.3	13.5	
Approach LOS	B			A	B	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		12.9	5.3	13.7		18.9
Change Period (Y+Rc), s		* 4.7	* 4.7	* 4.7		* 4.7
Max Green Setting (Gmax), s		* 22	* 6	* 22		* 22
Max Q Clear Time (g_c+I1), s		7.7	2.2	6.8		7.5
Green Ext Time (p_c), s		0.9	0.0	2.2		2.4

Intersection Summary	
HCM 6th Ctrl Delay	10.2
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

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

MOVEMENT SUMMARY

Site: 15 [SR 174 / Brunswick Road]

MITIG8 Exist 1530
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
East: RoadName												
6	T1	202	3.0	0.407	7.0	LOS A	2.6	65.5	0.32	0.17	0.32	34.1
16	R2	296	3.0	0.407	7.0	LOS A	2.6	65.5	0.32	0.17	0.32	33.1
Approach		498	3.0	0.407	7.0	LOS A	2.6	65.5	0.32	0.17	0.32	33.5
North: RoadName												
7	L2	355	3.0	0.422	7.7	LOS A	2.5	63.9	0.49	0.35	0.49	31.9
14	R2	112	3.0	0.422	7.7	LOS A	2.5	63.9	0.49	0.35	0.49	31.0
Approach		467	3.0	0.422	7.7	LOS A	2.5	63.9	0.49	0.35	0.49	31.6
West: RoadName												
5	L2	86	3.0	0.335	7.5	LOS A	1.7	42.5	0.56	0.48	0.56	33.2
2	T1	223	3.0	0.335	7.5	LOS A	1.7	42.5	0.56	0.48	0.56	33.2
Approach		309	3.0	0.335	7.5	LOS A	1.7	42.5	0.56	0.48	0.56	33.2
All Vehicles		1274	3.0	0.422	7.4	LOS A	2.6	65.5	0.44	0.31	0.44	32.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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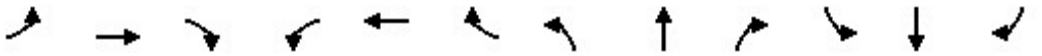
Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	177	68	114	233	505	40	344	9
v/c Ratio	0.27	0.27	0.29	0.69	0.50	0.18	0.63	0.02
Control Delay	1.0	29.2	3.1	41.9	17.9	28.8	24.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.0	29.2	3.1	41.9	17.9	28.8	24.8	0.0
Queue Length 50th (ft)	0	23	0	84	114	14	114	0
Queue Length 95th (ft)	0	62	10	#230	#341	42	197	0
Internal Link Dist (ft)	1255	1856			1215		1576	
Turn Bay Length (ft)				550		120		150
Base Capacity (vph)	729	337	454	337	939	337	871	835
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.20	0.25	0.69	0.54	0.12	0.39	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	166	64	0	107	219	456	19	38	323	8
Future Volume (veh/h)	0	0	166	64	0	107	219	456	19	38	323	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	177	68	0	114	233	485	20	40	344	9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	0	218	183	0	163	282	625	26	73	436	370
Arrive On Green	0.00	0.00	0.14	0.10	0.00	0.10	0.16	0.35	0.35	0.04	0.23	0.23
Sat Flow, veh/h	0	0	1585	1781	0	1585	1781	1784	74	1781	1870	1585
Grp Volume(v), veh/h	0	0	177	68	0	114	233	0	505	40	344	9
Grp Sat Flow(s),veh/h/ln	0	0	1585	1781	0	1585	1781	0	1857	1781	1870	1585
Q Serve(g_s), s	0.0	0.0	6.2	2.0	0.0	4.0	7.2	0.0	13.8	1.3	9.9	0.2
Cycle Q Clear(g_c), s	0.0	0.0	6.2	2.0	0.0	4.0	7.2	0.0	13.8	1.3	9.9	0.2
Prop In Lane	0.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	0	0	218	183	0	163	282	0	651	73	436	370
V/C Ratio(X)	0.00	0.00	0.81	0.37	0.00	0.70	0.83	0.00	0.78	0.55	0.79	0.02
Avail Cap(c_a), veh/h	0	0	275	309	0	275	309	0	791	309	797	675
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	23.9	23.9	0.0	24.7	23.2	0.0	16.5	26.8	20.5	16.9
Incr Delay (d2), s/veh	0.0	0.0	13.6	1.3	0.0	5.4	15.4	0.0	4.0	6.2	3.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	3.0	0.9	0.0	1.6	3.8	0.0	5.4	0.6	4.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	37.5	25.1	0.0	30.1	38.7	0.0	20.5	33.0	23.7	16.9
LnGrp LOS	A	A	D	C	A	C	D	A	C	C	C	B
Approach Vol, veh/h		177			182			738			393	
Approach Delay, s/veh		37.5			28.3			26.2			24.5	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	25.7		12.9	14.1	19.0		11.0				
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1				
Max Green Setting (Gmax), s	9.9	24.3		9.9	9.9	24.3		9.9				
Max Q Clear Time (g_c+I1), s	3.3	15.8		8.2	9.2	11.9		6.0				
Green Ext Time (p_c), s	0.0	1.9		0.2	0.0	1.5		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		27.4	
HCM 6th LOS		C	

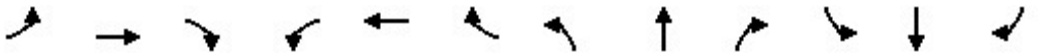
Notes

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

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBR
Lane Group Flow (vph)	215	26	78	255	546	97	473	14
v/c Ratio	0.36	0.14	0.24	0.90	0.69	0.44	0.74	0.02
Control Delay	1.6	31.4	1.7	66.9	22.9	35.8	26.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.6	31.4	1.7	66.9	22.9	35.8	26.5	0.1
Queue Length 50th (ft)	0	10	0	108	193	38	165	0
Queue Length 95th (ft)	0	33	0	#271	319	88	272	0
Internal Link Dist (ft)	1255	1856			1215		1576	
Turn Bay Length (ft)				550		120		150
Base Capacity (vph)	675	284	402	284	906	255	886	841
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.09	0.19	0.90	0.60	0.38	0.53	0.02

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



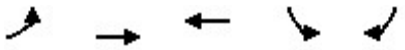
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	209	25	0	76	247	472	57	94	459	14
Future Volume (veh/h)	0	0	209	25	0	76	247	472	57	94	459	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	215	26	0	78	255	487	59	97	473	14
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	0	238	138	0	123	268	626	76	125	566	480
Arrive On Green	0.00	0.00	0.15	0.08	0.00	0.08	0.15	0.38	0.38	0.07	0.30	0.30
Sat Flow, veh/h	0	0	1585	1781	0	1585	1781	1636	198	1781	1870	1585
Grp Volume(v), veh/h	0	0	215	26	0	78	255	0	546	97	473	14
Grp Sat Flow(s),veh/h/ln	0	0	1585	1781	0	1585	1781	0	1835	1781	1870	1585
Q Serve(g_s), s	0.0	0.0	8.8	0.9	0.0	3.1	9.3	0.0	17.2	3.5	15.5	0.4
Cycle Q Clear(g_c), s	0.0	0.0	8.8	0.9	0.0	3.1	9.3	0.0	17.2	3.5	15.5	0.4
Prop In Lane	0.00		1.00	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	0	0	238	138	0	123	268	0	702	125	566	480
V/C Ratio(X)	0.00	0.00	0.90	0.19	0.00	0.63	0.95	0.00	0.78	0.77	0.84	0.03
Avail Cap(c_a), veh/h	0	0	238	268	0	238	268	0	817	241	833	706
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	27.5	28.4	0.0	29.5	27.7	0.0	17.9	30.1	21.4	16.2
Incr Delay (d2), s/veh	0.0	0.0	33.4	0.7	0.0	5.3	41.8	0.0	4.1	9.7	4.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	5.4	0.4	0.0	1.3	6.9	0.0	7.3	1.8	7.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	60.9	29.1	0.0	34.8	69.6	0.0	22.0	39.7	26.3	16.2
LnGrp LOS	A	A	E	C	A	C	E	A	C	D	C	B
Approach Vol, veh/h		215			104			801			584	
Approach Delay, s/veh		60.9			33.3			37.1			28.3	
Approach LOS		E			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.7	30.9		15.0	15.0	25.6		10.2				
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1				
Max Green Setting (Gmax), s	8.9	29.3		9.9	9.9	29.3		9.9				
Max Q Clear Time (g_c+I1), s	5.5	19.2		10.8	11.3	17.5		5.1				
Green Ext Time (p_c), s	0.1	2.6		0.0	0.0	2.4		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		36.9	
HCM 6th LOS		D	

Notes

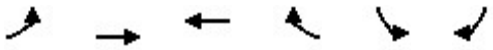
User approved pedestrian interval to be less than phase max green.



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	80	246	545	427	120
v/c Ratio	0.52	0.28	0.84	0.74	0.20
Control Delay	44.8	12.0	33.5	26.5	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	44.8	12.0	33.5	26.5	4.0
Queue Length 50th (ft)	29	49	163	140	0
Queue Length 95th (ft)	#98	121	#417	226	27
Internal Link Dist (ft)		1597	2083	2110	
Turn Bay Length (ft)	120			100	
Base Capacity (vph)	153	970	648	919	880
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.52	0.25	0.84	0.46	0.14

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	74	226	239	262	393	110
Future Volume (veh/h)	74	226	239	262	393	110
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	80	246	260	0	427	120
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	131	755	380		547	487
Arrive On Green	0.07	0.40	0.20	0.00	0.31	0.31
Sat Flow, veh/h	1781	1870	1870	0	1781	1585
Grp Volume(v), veh/h	80	246	260	0	427	120
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	0	1781	1585
Q Serve(g_s), s	1.7	3.6	5.2	0.0	8.8	2.3
Cycle Q Clear(g_c), s	1.7	3.6	5.2	0.0	8.8	2.3
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	131	755	380		547	487
V/C Ratio(X)	0.61	0.33	0.68		0.78	0.25
Avail Cap(c_a), veh/h	222	933	933		1332	1186
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	18.0	8.2	14.8	0.0	12.7	10.4
Incr Delay (d2), s/veh	4.5	0.2	2.2	0.0	2.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.9	1.8	0.0	2.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.6	8.5	17.0	0.0	15.1	10.7
LnGrp LOS	C	A	B		B	B
Approach Vol, veh/h		326	260	A	547	
Approach Delay, s/veh		11.9	17.0		14.2	
Approach LOS		B	B		B	

Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			21.3		18.8	8.0	13.2
Change Period (Y+Rc), s			5.1		6.5	5.1	5.1
Max Green Setting (Gmax), s			20.0		30.0	5.0	20.0
Max Q Clear Time (g_c+I1), s			5.6		10.8	3.7	7.2
Green Ext Time (p_c), s			1.0		1.6	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	14.2
HCM 6th LOS	B

Notes

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

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Group Flow (vph)	374	150	15	481	352
v/c Ratio	0.52	0.21	0.05	0.62	0.59
Control Delay	14.6	3.8	22.3	13.6	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.6	3.8	22.3	13.6	17.2
Queue Length 50th (ft)	56	0	3	77	57
Queue Length 95th (ft)	167	24	19	157	154
Internal Link Dist (ft)	1867			481	560
Turn Bay Length (ft)		175	100		
Base Capacity (vph)	1078	979	279	1513	1019
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.35	0.15	0.05	0.32	0.35

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	299	120	12	385	245	37
Future Volume (veh/h)	299	120	12	385	245	37
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	1900	1900
Adj Flow Rate, veh/h	374	150	15	481	306	46
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	566	480	42	866	399	60
Arrive On Green	0.30	0.30	0.02	0.46	0.26	0.26
Sat Flow, veh/h	1870	1585	1781	1870	1520	228
Grp Volume(v), veh/h	374	150	15	481	353	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1753	0
Q Serve(g_s), s	6.0	2.5	0.3	6.4	6.4	0.0
Cycle Q Clear(g_c), s	6.0	2.5	0.3	6.4	6.4	0.0
Prop In Lane		1.00	1.00		0.87	0.13
Lane Grp Cap(c), veh/h	566	480	42	866	460	0
V/C Ratio(X)	0.66	0.31	0.36	0.56	0.77	0.00
Avail Cap(c_a), veh/h	1202	1018	312	1202	1126	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	10.4	9.2	16.5	6.6	11.7	0.0
Incr Delay (d2), s/veh	1.3	0.4	5.2	0.6	2.7	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	2.0	0.7	0.2	1.6	2.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.7	9.6	21.7	7.2	14.4	0.0
LnGrp LOS	B	A	C	A	B	A
Approach Vol, veh/h	524			496	353	
Approach Delay, s/veh	11.1			7.6	14.4	
Approach LOS	B			A	B	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		13.7	5.5	15.1		20.6
Change Period (Y+Rc), s		* 4.7	* 4.7	* 4.7		* 4.7
Max Green Setting (Gmax), s		* 22	* 6	* 22		* 22
Max Q Clear Time (g_c+I1), s		8.4	2.3	8.0		8.4
Green Ext Time (p_c), s		0.9	0.0	2.4		2.6

Intersection Summary	
HCM 6th Ctrl Delay	10.7
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

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

MOVEMENT SUMMARY

Site: 15 [SR 174 / Brunswick Road]

MITIG8 EPAP PM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
East: RoadName												
6	T1	260	3.0	0.442	7.4	LOS A	2.9	75.3	0.33	0.17	0.33	33.9
16	R2	285	3.0	0.442	7.4	LOS A	2.9	75.3	0.33	0.17	0.33	32.9
Approach		545	3.0	0.442	7.4	LOS A	2.9	75.3	0.33	0.17	0.33	33.4
North: RoadName												
7	L2	427	3.0	0.525	9.8	LOS A	3.6	91.3	0.61	0.50	0.63	30.9
14	R2	120	3.0	0.525	9.8	LOS A	3.6	91.3	0.61	0.50	0.63	30.1
Approach		547	3.0	0.525	9.8	LOS A	3.6	91.3	0.61	0.50	0.63	30.7
West: RoadName												
5	L2	80	3.0	0.381	8.7	LOS A	1.9	48.7	0.62	0.58	0.62	32.7
2	T1	246	3.0	0.381	8.7	LOS A	1.9	48.7	0.62	0.58	0.62	32.7
Approach		326	3.0	0.381	8.7	LOS A	1.9	48.7	0.62	0.58	0.62	32.7
All Vehicles		1417	3.0	0.525	8.7	LOS A	3.6	91.3	0.50	0.39	0.51	32.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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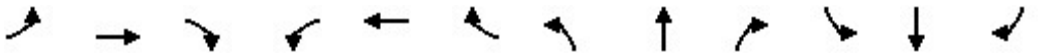
Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBR
Lane Group Flow (vph)	213	29	52	202	540	91	451	14
v/c Ratio	0.36	0.14	0.15	0.66	0.65	0.49	0.73	0.02
Control Delay	1.7	29.5	0.9	40.0	19.4	40.4	26.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.7	29.5	0.9	40.0	19.4	40.4	26.1	0.1
Queue Length 50th (ft)	0	11	0	76	175	35	155	0
Queue Length 95th (ft)	0	34	0	#194	295	#101	260	0
Internal Link Dist (ft)	1255	1856			1215		1576	
Turn Bay Length (ft)				550		120		150
Base Capacity (vph)	669	311	429	311	972	187	852	818
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.09	0.12	0.65	0.56	0.49	0.53	0.02

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



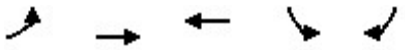
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	200	27	0	49	190	458	50	86	424	13
Future Volume (veh/h)	0	0	200	27	0	49	190	458	50	86	424	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	213	29	0	52	202	487	53	91	451	14
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	0	252	130	0	116	248	600	65	117	539	457
Arrive On Green	0.00	0.00	0.16	0.07	0.00	0.07	0.14	0.36	0.36	0.07	0.29	0.29
Sat Flow, veh/h	0	0	1585	1781	0	1585	1781	1658	180	1781	1870	1585
Grp Volume(v), veh/h	0	0	213	29	0	52	202	0	540	91	451	14
Grp Sat Flow(s),veh/h/ln	0	0	1585	1781	0	1585	1781	0	1838	1781	1870	1585
Q Serve(g_s), s	0.0	0.0	8.0	0.9	0.0	1.9	6.8	0.0	16.4	3.1	13.9	0.4
Cycle Q Clear(g_c), s	0.0	0.0	8.0	0.9	0.0	1.9	6.8	0.0	16.4	3.1	13.9	0.4
Prop In Lane	0.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	0	0	252	130	0	116	248	0	665	117	539	457
V/C Ratio(X)	0.00	0.00	0.85	0.22	0.00	0.45	0.82	0.00	0.81	0.78	0.84	0.03
Avail Cap(c_a), veh/h	0	0	257	289	0	257	289	0	775	173	789	669
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	25.2	26.9	0.0	27.4	25.8	0.0	17.8	28.4	20.6	15.7
Incr Delay (d2), s/veh	0.0	0.0	21.9	0.9	0.0	2.7	14.4	0.0	5.7	12.4	5.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	4.4	0.4	0.0	0.8	3.5	0.0	6.7	1.6	5.9	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	47.0	27.8	0.0	30.1	40.2	0.0	23.5	40.7	25.8	15.8
LnGrp LOS	A	A	D	C	A	C	D	A	C	D	C	B
Approach Vol, veh/h		213			81			742			556	
Approach Delay, s/veh		47.0			29.3			28.0			28.0	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.1	28.0		14.9	13.7	23.5		9.6				
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1				
Max Green Setting (Gmax), s	6.0	26.0		10.0	10.0	26.0		10.0				
Max Q Clear Time (g_c+I1), s	5.1	18.4		10.0	8.8	15.9		3.9				
Green Ext Time (p_c), s	0.0	1.9		0.0	0.1	1.8		0.1				

Intersection Summary		
HCM 6th Ctrl Delay		30.6
HCM 6th LOS		C

Notes

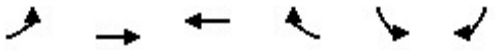
User approved pedestrian interval to be less than phase max green.



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	88	225	507	364	115
v/c Ratio	0.48	0.26	0.79	0.69	0.21
Control Delay	39.1	9.5	24.0	25.8	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	39.1	9.5	24.0	25.8	5.0
Queue Length 50th (ft)	30	40	114	112	0
Queue Length 95th (ft)	#95	83	#273	202	30
Internal Link Dist (ft)		1597	2083	2110	
Turn Bay Length (ft)	120			100	
Base Capacity (vph)	183	1185	836	740	729
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.48	0.19	0.61	0.49	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	80	205	186	276	331	105
Future Volume (veh/h)	80	205	186	276	331	105
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	88	225	204	0	364	115
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	142	793	392		479	426
Arrive On Green	0.08	0.42	0.21	0.00	0.27	0.27
Sat Flow, veh/h	1781	1870	1870	0	1781	1585
Grp Volume(v), veh/h	88	225	204	0	364	115
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	0	1781	1585
Q Serve(g_s), s	1.8	3.0	3.7	0.0	7.1	2.2
Cycle Q Clear(g_c), s	1.8	3.0	3.7	0.0	7.1	2.2
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	142	793	392		479	426
V/C Ratio(X)	0.62	0.28	0.52		0.76	0.27
Avail Cap(c_a), veh/h	236	1069	1069		952	847
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	16.8	7.1	13.3	0.0	12.7	10.9
Incr Delay (d2), s/veh	4.3	0.2	1.1	0.0	2.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.7	1.2	0.0	2.1	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.2	7.3	14.3	0.0	15.2	11.2
LnGrp LOS	C	A	B		B	B
Approach Vol, veh/h		313	204	A	479	
Approach Delay, s/veh		11.2	14.3		14.2	
Approach LOS		B	B		B	

Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			21.1		16.7	8.1	13.0
Change Period (Y+Rc), s			5.1		6.5	5.1	5.1
Max Green Setting (Gmax), s			21.6		20.2	5.0	21.6
Max Q Clear Time (g_c+I1), s			5.0		9.1	3.8	5.7
Green Ext Time (p_c), s			1.0		1.1	0.0	0.8

Intersection Summary		
HCM 6th Ctrl Delay		13.3
HCM 6th LOS		B

Notes

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

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Group Flow (vph)	374	150	15	481	352
v/c Ratio	0.52	0.21	0.05	0.62	0.59
Control Delay	14.6	3.8	22.3	13.6	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.6	3.8	22.3	13.6	17.2
Queue Length 50th (ft)	56	0	3	77	57
Queue Length 95th (ft)	167	24	19	157	154
Internal Link Dist (ft)	1867			481	560
Turn Bay Length (ft)		175	100		
Base Capacity (vph)	1078	979	279	1513	1019
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.35	0.15	0.05	0.32	0.35

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	299	120	12	385	245	37
Future Volume (veh/h)	299	120	12	385	245	37
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	1900	1900
Adj Flow Rate, veh/h	374	150	15	481	306	46
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	566	480	42	866	399	60
Arrive On Green	0.30	0.30	0.02	0.46	0.26	0.26
Sat Flow, veh/h	1870	1585	1781	1870	1520	228
Grp Volume(v), veh/h	374	150	15	481	353	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1753	0
Q Serve(g_s), s	6.0	2.5	0.3	6.4	6.4	0.0
Cycle Q Clear(g_c), s	6.0	2.5	0.3	6.4	6.4	0.0
Prop In Lane		1.00	1.00		0.87	0.13
Lane Grp Cap(c), veh/h	566	480	42	866	460	0
V/C Ratio(X)	0.66	0.31	0.36	0.56	0.77	0.00
Avail Cap(c_a), veh/h	1202	1018	312	1202	1126	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	10.4	9.2	16.5	6.6	11.7	0.0
Incr Delay (d2), s/veh	1.3	0.4	5.2	0.6	2.7	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	2.0	0.7	0.2	1.6	2.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.7	9.6	21.7	7.2	14.4	0.0
LnGrp LOS	B	A	C	A	B	A
Approach Vol, veh/h	524			496	353	
Approach Delay, s/veh	11.1			7.6	14.4	
Approach LOS	B			A	B	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		13.7	5.5	15.1		20.6
Change Period (Y+Rc), s		* 4.7	* 4.7	* 4.7		* 4.7
Max Green Setting (Gmax), s		* 22	* 6	* 22		* 22
Max Q Clear Time (g_c+I1), s		8.4	2.3	8.0		8.4
Green Ext Time (p_c), s		0.9	0.0	2.4		2.6

Intersection Summary	
HCM 6th Ctrl Delay	10.7
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

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

MOVEMENT SUMMARY

Site: 15 [SR 174 / Brunswick Road]

MITIG8 EPAP 1530 PM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
East: RoadName												
6	T1	202	3.0	0.411	7.0	LOS A	2.6	66.5	0.32	0.17	0.32	34.1
16	R2	300	3.0	0.411	7.0	LOS A	2.6	66.5	0.32	0.17	0.32	33.1
Approach		502	3.0	0.411	7.0	LOS A	2.6	66.5	0.32	0.17	0.32	33.5
North: RoadName												
7	L2	360	3.0	0.428	7.8	LOS A	2.5	65.2	0.49	0.35	0.49	31.8
14	R2	114	3.0	0.428	7.8	LOS A	2.5	65.2	0.49	0.35	0.49	30.9
Approach		474	3.0	0.428	7.8	LOS A	2.5	65.2	0.49	0.35	0.49	31.6
West: RoadName												
5	L2	87	3.0	0.337	7.6	LOS A	1.7	42.9	0.56	0.49	0.56	33.2
2	T1	223	3.0	0.337	7.6	LOS A	1.7	42.9	0.56	0.49	0.56	33.1
Approach		310	3.0	0.337	7.6	LOS A	1.7	42.9	0.56	0.49	0.56	33.1
All Vehicles		1286	3.0	0.428	7.4	LOS A	2.6	66.5	0.44	0.31	0.44	32.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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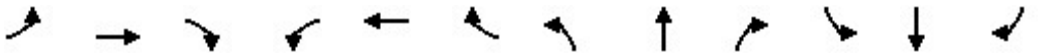
Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	232	68	114	266	523	40	372	9
v/c Ratio	0.37	0.29	0.31	0.88	0.61	0.19	0.70	0.02
Control Delay	1.7	30.0	3.2	61.3	19.8	29.4	27.6	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.7	30.0	3.2	61.3	19.8	29.4	27.6	0.0
Queue Length 50th (ft)	0	24	0	101	120	14	125	0
Queue Length 95th (ft)	0	62	11	#268	#359	43	215	0
Internal Link Dist (ft)	1255	1856			1215		1576	
Turn Bay Length (ft)				550		120		150
Base Capacity (vph)	694	302	426	302	864	302	780	767
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.23	0.27	0.88	0.61	0.13	0.48	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	218	64	0	107	250	473	19	38	350	8
Future Volume (veh/h)	0	0	218	64	0	107	250	473	19	38	350	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	232	68	0	114	266	503	20	40	372	9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	0	252	179	0	160	283	648	26	71	456	386
Arrive On Green	0.00	0.00	0.16	0.10	0.00	0.10	0.16	0.36	0.36	0.04	0.24	0.24
Sat Flow, veh/h	0	0	1585	1781	0	1585	1781	1787	71	1781	1870	1585
Grp Volume(v), veh/h	0	0	232	68	0	114	266	0	523	40	372	9
Grp Sat Flow(s),veh/h/ln	0	0	1585	1781	0	1585	1781	0	1858	1781	1870	1585
Q Serve(g_s), s	0.0	0.0	9.0	2.2	0.0	4.3	9.2	0.0	15.5	1.4	11.7	0.3
Cycle Q Clear(g_c), s	0.0	0.0	9.0	2.2	0.0	4.3	9.2	0.0	15.5	1.4	11.7	0.3
Prop In Lane	0.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	0	0	252	179	0	160	283	0	674	71	456	386
V/C Ratio(X)	0.00	0.00	0.92	0.38	0.00	0.71	0.94	0.00	0.78	0.56	0.82	0.02
Avail Cap(c_a), veh/h	0	0	252	283	0	252	283	0	725	283	730	619
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	25.8	26.2	0.0	27.1	25.9	0.0	17.6	29.3	22.2	17.9
Incr Delay (d2), s/veh	0.0	0.0	35.9	1.3	0.0	5.8	37.3	0.0	5.0	6.7	3.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	5.7	1.0	0.0	1.8	6.4	0.0	6.4	0.7	4.9	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	61.7	27.5	0.0	32.9	63.2	0.0	22.6	36.0	26.1	17.9
LnGrp LOS	A	A	E	C	A	C	E	A	C	D	C	B
Approach Vol, veh/h		232			182			789			421	
Approach Delay, s/veh		61.7			30.9			36.3			26.9	
Approach LOS		E			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.6	28.3		15.0	15.0	20.9		11.4				
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1				
Max Green Setting (Gmax), s	9.9	24.3		9.9	9.9	24.3		9.9				
Max Q Clear Time (g_c+I1), s	3.4	17.5		11.0	11.2	13.7		6.3				
Green Ext Time (p_c), s	0.0	1.7		0.0	0.0	1.5		0.2				

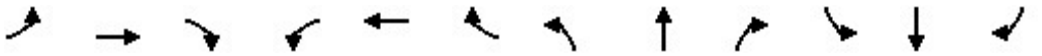
Intersection Summary			
HCM 6th Ctrl Delay		36.9	
HCM 6th LOS		D	

Notes

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

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	95	287	30	585	66	333
v/c Ratio	0.30	0.56	0.14	0.70	0.26	0.36
Control Delay	17.9	14.9	28.6	18.2	28.2	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.9	14.9	28.6	18.2	28.2	10.6
Queue Length 50th (ft)	18	38	9	146	19	40
Queue Length 95th (ft)	60	115	37	288	63	142
Internal Link Dist (ft)	489	1867		1607		1129
Turn Bay Length (ft)			230		205	
Base Capacity (vph)	617	883	214	1478	257	1491
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.33	0.14	0.40	0.26	0.22

Intersection Summary



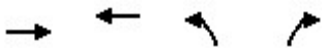
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	23	24	28	57	182	28	531	13	61	283	27
Future Volume (veh/h)	41	23	24	28	57	182	28	531	13	61	283	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1945	1870	1870	1945	1870	1870	1945	1870	1870	1945	1870
Adj Flow Rate, veh/h	44	25	26	30	61	196	30	571	14	66	304	29
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	232	132	96	104	96	254	61	705	17	130	719	69
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.03	0.37	0.37	0.07	0.41	0.41
Sat Flow, veh/h	564	603	439	100	438	1160	1781	1890	46	1781	1748	167
Grp Volume(v), veh/h	95	0	0	287	0	0	30	0	585	66	0	333
Grp Sat Flow(s),veh/h/ln	1605	0	0	1698	0	0	1781	0	1937	1781	0	1915
Q Serve(g_s), s	0.0	0.0	0.0	3.1	0.0	0.0	0.8	0.0	13.2	1.7	0.0	6.0
Cycle Q Clear(g_c), s	2.1	0.0	0.0	7.7	0.0	0.0	0.8	0.0	13.2	1.7	0.0	6.0
Prop In Lane	0.46		0.27	0.10		0.68	1.00		0.02	1.00		0.09
Lane Grp Cap(c), veh/h	460	0	0	454	0	0	61	0	722	130	0	788
V/C Ratio(X)	0.21	0.00	0.00	0.63	0.00	0.00	0.49	0.00	0.81	0.51	0.00	0.42
Avail Cap(c_a), veh/h	677	0	0	707	0	0	183	0	1195	220	0	788
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.6	0.0	0.0	17.8	0.0	0.0	23.1	0.0	13.7	21.7	0.0	10.2
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.5	0.0	0.0	6.0	0.0	2.2	3.1	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	0.8	0.0	0.0	2.7	0.0	0.0	0.4	0.0	4.4	0.7	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.8	0.0	0.0	19.2	0.0	0.0	29.1	0.0	15.9	24.8	0.0	10.6
LnGrp LOS	B	A	A	B	A	A	C	A	B	C	A	B
Approach Vol, veh/h		95			287			615			399	
Approach Delay, s/veh		15.8			19.2			16.6			12.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.6	24.6		15.4	6.8	26.5		15.4				
Change Period (Y+Rc), s	5.1	6.5		* 4.7	5.1	6.5		* 4.7				
Max Green Setting (Gmax), s	6.0	30.0		* 18	5.0	18.0		* 18				
Max Q Clear Time (g_c+I1), s	3.7	15.2		4.1	2.8	8.0		9.7				
Green Ext Time (p_c), s	0.0	2.9		0.4	0.0	1.2		1.0				

Intersection Summary			
HCM 6th Ctrl Delay		16.0	
HCM 6th LOS		B	

Notes

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



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	303	935	188	276
v/c Ratio	0.68	0.74	0.56	0.53
Control Delay	31.7	25.7	33.2	7.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	31.7	25.7	33.2	7.7
Queue Length 50th (ft)	111	171	72	0
Queue Length 95th (ft)	209	#358	148	59
Internal Link Dist (ft)	795	110	1248	
Turn Bay Length (ft)			400	
Base Capacity (vph)	701	1347	676	775
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.43	0.69	0.28	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	220	53	66	776	169	248
Future Volume (veh/h)	220	53	66	776	169	248
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	244	59	73	862	188	276
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	311	75	92	1136	389	346
Arrive On Green	0.21	0.21	0.34	0.34	0.22	0.22
Sat Flow, veh/h	1455	352	271	3456	1781	1585
Grp Volume(v), veh/h	0	303	500	435	188	276
Grp Sat Flow(s),veh/h/ln	0	1807	1857	1777	1781	1585
Q Serve(g_s), s	0.0	9.7	15.0	13.2	5.7	10.1
Cycle Q Clear(g_c), s	0.0	9.7	15.0	13.2	5.7	10.1
Prop In Lane		0.19	0.15		1.00	1.00
Lane Grp Cap(c), veh/h	0	386	627	600	389	346
V/C Ratio(X)	0.00	0.78	0.80	0.73	0.48	0.80
Avail Cap(c_a), veh/h	0	745	766	733	735	654
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	22.8	18.4	17.8	20.9	22.7
Incr Delay (d2), s/veh	0.0	3.5	4.9	2.8	0.9	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.2	6.6	5.3	2.3	3.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	26.3	23.3	20.6	21.9	26.9
LnGrp LOS	A	C	C	C	C	C
Approach Vol, veh/h	303			935	464	
Approach Delay, s/veh	26.3			22.0	24.9	
Approach LOS	C			C	C	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	18.1	17.8	25.4
Change Period (Y+Rc), s	* 4.7	* 4.7	4.7
Max Green Setting (Gmax), s	* 25	* 25	25.3
Max Q Clear Time (g_c+I1), s	12.1	11.7	17.0
Green Ext Time (p_c), s	1.3	1.5	3.8

Intersection Summary	
HCM 6th Ctrl Delay	23.6
HCM 6th LOS	C

Notes

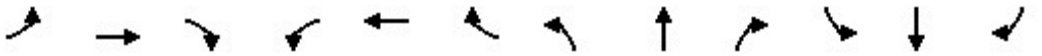
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	247	26	78	308	573	97	491	14
v/c Ratio	0.42	0.14	0.24	0.94	0.70	0.45	0.79	0.02
Control Delay	2.2	31.8	1.8	69.6	23.1	36.8	30.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.2	31.8	1.8	69.6	23.1	36.8	30.4	0.1
Queue Length 50th (ft)	0	11	0	~140	207	39	183	0
Queue Length 95th (ft)	0	33	0	#310	#352	88	300	0
Internal Link Dist (ft)	1255	1856			1215		1576	
Turn Bay Length (ft)				550		120		150
Base Capacity (vph)	660	273	393	329	873	246	794	771
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.10	0.20	0.94	0.66	0.39	0.62	0.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	240	25	0	76	299	499	57	94	476	14
Future Volume (veh/h)	0	0	240	25	0	76	299	499	57	94	476	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	247	26	0	78	308	514	59	97	491	14
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	0	228	134	0	119	308	668	77	125	567	481
Arrive On Green	0.00	0.00	0.14	0.08	0.00	0.08	0.17	0.41	0.41	0.07	0.30	0.30
Sat Flow, veh/h	0	0	1585	1781	0	1585	1781	1647	189	1781	1870	1585
Grp Volume(v), veh/h	0	0	247	26	0	78	308	0	573	97	491	14
Grp Sat Flow(s),veh/h/ln	0	0	1585	1781	0	1585	1781	0	1836	1781	1870	1585
Q Serve(g_s), s	0.0	0.0	9.9	0.9	0.0	3.3	11.9	0.0	18.6	3.7	17.1	0.4
Cycle Q Clear(g_c), s	0.0	0.0	9.9	0.9	0.0	3.3	11.9	0.0	18.6	3.7	17.1	0.4
Prop In Lane	0.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	0	0	228	134	0	119	308	0	745	125	567	481
V/C Ratio(X)	0.00	0.00	1.08	0.19	0.00	0.65	1.00	0.00	0.77	0.77	0.87	0.03
Avail Cap(c_a), veh/h	0	0	228	256	0	228	308	0	781	230	742	628
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	29.5	29.9	0.0	31.0	28.5	0.0	17.7	31.5	22.7	16.9
Incr Delay (d2), s/veh	0.0	0.0	83.7	0.7	0.0	5.9	51.4	0.0	4.5	9.7	8.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	8.9	0.4	0.0	1.4	9.0	0.0	7.4	1.8	7.8	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	113.2	30.6	0.0	36.9	79.9	0.0	22.2	41.2	31.1	16.9
LnGrp LOS	A	A	F	C	A	D	F	A	C	D	C	B
Approach Vol, veh/h		247			104			881			602	
Approach Delay, s/veh		113.2			35.3			42.3			32.4	
Approach LOS		F			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.9	33.6		15.0	17.0	26.6		10.3				
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1				
Max Green Setting (Gmax), s	8.9	29.3		9.9	11.9	27.3		9.9				
Max Q Clear Time (g_c+I1), s	5.7	20.6		11.9	13.9	19.1		5.3				
Green Ext Time (p_c), s	0.1	2.2		0.0	0.0	1.8		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		48.2	
HCM 6th LOS		D	

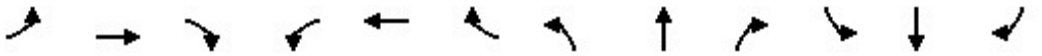
Notes

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

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	86	155	21	433	155	589
v/c Ratio	0.25	0.38	0.09	0.62	0.58	0.45
Control Delay	15.1	12.4	22.1	16.6	33.9	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	12.4	22.1	16.6	33.9	9.0
Queue Length 50th (ft)	13	15	5	87	37	70
Queue Length 95th (ft)	47	60	24	173	#137	246
Internal Link Dist (ft)	489	1867		1607		1129
Turn Bay Length (ft)			230		205	
Base Capacity (vph)	805	869	223	1513	268	1555
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.18	0.09	0.29	0.58	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



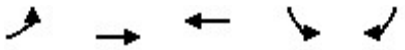
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	29	27	25	44	85	21	393	36	153	550	33
Future Volume (veh/h)	30	29	27	25	44	85	21	393	36	153	550	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1945	1870	1870	1945	1870	1870	1945	1870	1870	1945	1870
Adj Flow Rate, veh/h	30	29	27	25	44	86	21	397	36	155	556	33
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	186	112	79	134	83	135	46	546	50	224	746	44
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.03	0.31	0.31	0.13	0.41	0.41
Sat Flow, veh/h	424	782	552	182	577	946	1781	1757	159	1781	1818	108
Grp Volume(v), veh/h	86	0	0	155	0	0	21	0	433	155	0	589
Grp Sat Flow(s),veh/h/ln	1758	0	0	1704	0	0	1781	0	1916	1781	0	1926
Q Serve(g_s), s	0.0	0.0	0.0	1.5	0.0	0.0	0.5	0.0	7.8	3.2	0.0	10.1
Cycle Q Clear(g_c), s	1.6	0.0	0.0	3.3	0.0	0.0	0.5	0.0	7.8	3.2	0.0	10.1
Prop In Lane	0.35		0.31	0.16		0.55	1.00		0.08	1.00		0.06
Lane Grp Cap(c), veh/h	377	0	0	352	0	0	46	0	595	224	0	790
V/C Ratio(X)	0.23	0.00	0.00	0.44	0.00	0.00	0.45	0.00	0.73	0.69	0.00	0.75
Avail Cap(c_a), veh/h	887	0	0	889	0	0	230	0	1483	276	0	894
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.9	0.0	0.0	15.6	0.0	0.0	18.6	0.0	11.9	16.2	0.0	9.7
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.9	0.0	0.0	6.7	0.0	1.7	5.5	0.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	1.1	0.0	0.0	0.2	0.0	2.3	1.3	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.2	0.0	0.0	16.5	0.0	0.0	25.3	0.0	13.6	21.7	0.0	12.7
LnGrp LOS	B	A	A	B	A	A	C	A	B	C	A	B
Approach Vol, veh/h		86			155			454			744	
Approach Delay, s/veh		15.2			16.5			14.2			14.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	18.5		10.3	6.1	22.4		10.3				
Change Period (Y+Rc), s	5.1	6.5		* 4.7	5.1	6.5		* 4.7				
Max Green Setting (Gmax), s	6.0	30.0		* 18	5.0	18.0		* 18				
Max Q Clear Time (g_c+I1), s	5.2	9.8		3.6	2.5	12.1		5.3				
Green Ext Time (p_c), s	0.0	2.2		0.3	0.0	1.7		0.6				

Intersection Summary			
HCM 6th Ctrl Delay		14.7	
HCM 6th LOS		B	

Notes

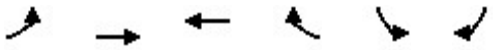
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	85	246	557	445	126
v/c Ratio	0.56	0.28	0.86	0.76	0.21
Control Delay	47.5	12.3	35.9	27.1	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	47.5	12.3	35.9	27.1	4.0
Queue Length 50th (ft)	32	51	171	148	0
Queue Length 95th (ft)	#105	121	#428	238	28
Internal Link Dist (ft)		1597	2083	2110	
Turn Bay Length (ft)	120			100	
Base Capacity (vph)	151	961	645	910	875
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.56	0.26	0.86	0.49	0.14

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	78	226	239	273	409	116
Future Volume (veh/h)	78	226	239	273	409	116
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	85	246	260	0	445	126
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	135	751	377		563	501
Arrive On Green	0.08	0.40	0.20	0.00	0.32	0.32
Sat Flow, veh/h	1781	1870	1870	0	1781	1585
Grp Volume(v), veh/h	85	246	260	0	445	126
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	0	1781	1585
Q Serve(g_s), s	1.9	3.7	5.3	0.0	9.4	2.4
Cycle Q Clear(g_c), s	1.9	3.7	5.3	0.0	9.4	2.4
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	135	751	377		563	501
V/C Ratio(X)	0.63	0.33	0.69		0.79	0.25
Avail Cap(c_a), veh/h	217	911	911		1301	1158
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	18.4	8.5	15.2	0.0	12.8	10.4
Incr Delay (d2), s/veh	4.8	0.3	2.3	0.0	2.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.0	1.9	0.0	2.8	2.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.2	8.7	17.5	0.0	15.3	10.7
LnGrp LOS	C	A	B		B	B
Approach Vol, veh/h		331	260	A	571	
Approach Delay, s/veh		12.4	17.5		14.3	
Approach LOS		B	B		B	

Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			21.6		19.5	8.2	13.4
Change Period (Y+Rc), s			5.1		6.5	5.1	5.1
Max Green Setting (Gmax), s			20.0		30.0	5.0	20.0
Max Q Clear Time (g_c+I1), s			5.7		11.4	3.9	7.3
Green Ext Time (p_c), s			1.0		1.6	0.0	1.0

Intersection Summary		
HCM 6th Ctrl Delay		14.5
HCM 6th LOS		B

Notes

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

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Group Flow (vph)	411	150	15	531	352
v/c Ratio	0.55	0.21	0.06	0.66	0.60
Control Delay	14.9	3.7	22.8	14.3	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.9	3.7	22.8	14.3	18.0
Queue Length 50th (ft)	63	0	3	88	62
Queue Length 95th (ft)	185	24	19	177	154
Internal Link Dist (ft)	1867			481	560
Turn Bay Length (ft)		175	100		
Base Capacity (vph)	1045	953	271	1480	988
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.39	0.16	0.06	0.36	0.36

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	329	120	12	425	245	37
Future Volume (veh/h)	329	120	12	425	245	37
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	1900	1900
Adj Flow Rate, veh/h	411	150	15	531	306	46
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	598	507	41	889	396	60
Arrive On Green	0.32	0.32	0.02	0.48	0.26	0.26
Sat Flow, veh/h	1870	1585	1781	1870	1520	228
Grp Volume(v), veh/h	411	150	15	531	353	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1753	0
Q Serve(g_s), s	6.8	2.5	0.3	7.4	6.6	0.0
Cycle Q Clear(g_c), s	6.8	2.5	0.3	7.4	6.6	0.0
Prop In Lane		1.00	1.00		0.87	0.13
Lane Grp Cap(c), veh/h	598	507	41	889	457	0
V/C Ratio(X)	0.69	0.30	0.36	0.60	0.77	0.00
Avail Cap(c_a), veh/h	1157	980	300	1157	1084	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	10.5	9.1	17.1	6.8	12.2	0.0
Incr Delay (d2), s/veh	1.4	0.3	5.2	0.6	2.8	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	2.2	0.7	0.2	1.9	2.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.0	9.4	22.4	7.5	15.0	0.0
LnGrp LOS	B	A	C	A	B	A
Approach Vol, veh/h	561			546	353	
Approach Delay, s/veh	11.3			7.9	15.0	
Approach LOS	B			A	B	

Timer - Assigned Phs	2	3	4	8
Phs Duration (G+Y+Rc), s	14.0	5.5	16.1	21.6
Change Period (Y+Rc), s	* 4.7	* 4.7	* 4.7	* 4.7
Max Green Setting (Gmax), s	* 22	* 6	* 22	* 22
Max Q Clear Time (g_c+I1), s	8.6	2.3	8.8	9.4
Green Ext Time (p_c), s	0.9	0.0	2.6	2.8

Intersection Summary	
HCM 6th Ctrl Delay	10.9
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

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

MOVEMENT SUMMARY

Site: 15 [SR 174 / Brunswick Road]

MITIG8 EPAP + Project PM
Centennial Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
East: RoadName												
6	T1	260	3.0	0.454	7.6	LOS A	3.1	78.4	0.34	0.18	0.34	33.8
16	R2	297	3.0	0.454	7.6	LOS A	3.1	78.4	0.34	0.18	0.34	32.8
Approach		557	3.0	0.454	7.6	LOS A	3.1	78.4	0.34	0.18	0.34	33.3
North: RoadName												
7	L2	445	3.0	0.548	10.3	LOS B	4.2	107.7	0.62	0.54	0.69	30.7
14	R2	126	3.0	0.548	10.3	LOS B	4.2	107.7	0.62	0.54	0.69	29.9
Approach		571	3.0	0.548	10.3	LOS B	4.2	107.7	0.62	0.54	0.69	30.5
West: RoadName												
5	L2	85	3.0	0.393	9.0	LOS A	2.0	51.8	0.63	0.61	0.66	32.6
2	T1	246	3.0	0.393	9.0	LOS A	2.0	51.8	0.63	0.61	0.66	32.5
Approach		330	3.0	0.393	9.0	LOS A	2.0	51.8	0.63	0.61	0.66	32.5
All Vehicles		1458	3.0	0.548	9.0	LOS A	4.2	107.7	0.52	0.42	0.55	32.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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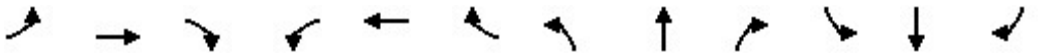
Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	213	29	52	224	553	91	453	14
v/c Ratio	0.36	0.14	0.15	0.72	0.66	0.49	0.73	0.02
Control Delay	1.7	29.6	0.9	44.4	19.7	40.7	26.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.7	29.6	0.9	44.4	19.7	40.7	26.1	0.1
Queue Length 50th (ft)	0	11	0	86	181	35	156	0
Queue Length 95th (ft)	0	34	0	#220	304	#101	262	0
Internal Link Dist (ft)	1255	1856			1215		1576	
Turn Bay Length (ft)				550		120		150
Base Capacity (vph)	668	309	428	309	968	185	847	815
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.09	0.12	0.72	0.57	0.49	0.53	0.02

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



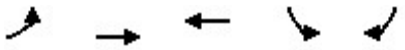
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	200	27	0	49	211	470	50	86	426	13
Future Volume (veh/h)	0	0	200	27	0	49	211	470	50	86	426	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	213	29	0	52	224	500	53	91	453	14
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	0	250	128	0	114	269	620	66	117	538	456
Arrive On Green	0.00	0.00	0.16	0.07	0.00	0.07	0.15	0.37	0.37	0.07	0.29	0.29
Sat Flow, veh/h	0	0	1585	1781	0	1585	1781	1662	176	1781	1870	1585
Grp Volume(v), veh/h	0	0	213	29	0	52	224	0	553	91	453	14
Grp Sat Flow(s),veh/h/ln	0	0	1585	1781	0	1585	1781	0	1839	1781	1870	1585
Q Serve(g_s), s	0.0	0.0	8.3	1.0	0.0	2.0	7.7	0.0	17.1	3.2	14.4	0.4
Cycle Q Clear(g_c), s	0.0	0.0	8.3	1.0	0.0	2.0	7.7	0.0	17.1	3.2	14.4	0.4
Prop In Lane	0.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	0	0	250	128	0	114	269	0	686	117	538	456
V/C Ratio(X)	0.00	0.00	0.85	0.23	0.00	0.46	0.83	0.00	0.81	0.78	0.84	0.03
Avail Cap(c_a), veh/h	0	0	250	281	0	250	281	0	755	169	768	651
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	25.9	27.7	0.0	28.2	26.1	0.0	17.8	29.1	21.2	16.2
Incr Delay (d2), s/veh	0.0	0.0	23.3	0.9	0.0	2.8	18.3	0.0	5.9	13.3	5.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	4.6	0.4	0.0	0.8	4.3	0.0	7.0	1.7	6.2	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	49.3	28.6	0.0	31.0	44.4	0.0	23.7	42.5	27.1	16.2
LnGrp LOS	A	A	D	C	A	C	D	A	C	D	C	B
Approach Vol, veh/h		213			81			777			558	
Approach Delay, s/veh		49.3			30.2			29.7			29.3	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.2	29.3		15.1	14.7	23.9		9.7				
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1				
Max Green Setting (Gmax), s	6.0	26.0		10.0	10.0	26.0		10.0				
Max Q Clear Time (g_c+I1), s	5.2	19.1		10.3	9.7	16.4		4.0				
Green Ext Time (p_c), s	0.0	1.8		0.0	0.0	1.8		0.1				

Intersection Summary		
HCM 6th Ctrl Delay		32.2
HCM 6th LOS		C

Notes

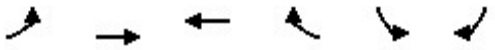
User approved pedestrian interval to be less than phase max green.



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	89	225	507	370	119
v/c Ratio	0.49	0.26	0.79	0.70	0.21
Control Delay	39.5	9.6	24.0	26.1	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	39.5	9.6	24.0	26.1	4.9
Queue Length 50th (ft)	31	41	116	114	0
Queue Length 95th (ft)	#95	83	#273	205	31
Internal Link Dist (ft)		1597	2083	2110	
Turn Bay Length (ft)	120			100	
Base Capacity (vph)	182	1183	833	738	729
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.49	0.19	0.61	0.50	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	81	205	186	276	337	108
Future Volume (veh/h)	81	205	186	276	337	108
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	89	225	204	0	370	119
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	143	790	389		485	432
Arrive On Green	0.08	0.42	0.21	0.00	0.27	0.27
Sat Flow, veh/h	1781	1870	1870	0	1781	1585
Grp Volume(v), veh/h	89	225	204	0	370	119
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	0	1781	1585
Q Serve(g_s), s	1.8	3.0	3.7	0.0	7.3	2.2
Cycle Q Clear(g_c), s	1.8	3.0	3.7	0.0	7.3	2.2
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	143	790	389		485	432
V/C Ratio(X)	0.62	0.28	0.52		0.76	0.28
Avail Cap(c_a), veh/h	234	1063	1063		947	842
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	16.9	7.2	13.4	0.0	12.7	10.9
Incr Delay (d2), s/veh	4.4	0.2	1.1	0.0	2.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.7	1.2	0.0	2.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.3	7.4	14.5	0.0	15.2	11.2
LnGrp LOS	C	A	B		B	B
Approach Vol, veh/h		314	204	A	489	
Approach Delay, s/veh		11.3	14.5		14.3	
Approach LOS		B	B		B	

Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			21.2		16.8	8.1	13.0
Change Period (Y+Rc), s			5.1		6.5	5.1	5.1
Max Green Setting (Gmax), s			21.6		20.2	5.0	21.6
Max Q Clear Time (g_c+I1), s			5.0		9.3	3.8	5.7
Green Ext Time (p_c), s			1.0		1.2	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	13.4
HCM 6th LOS	B

Notes

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

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Group Flow (vph)	379	150	15	500	352
v/c Ratio	0.52	0.21	0.05	0.63	0.60
Control Delay	14.5	3.7	22.5	13.8	17.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.5	3.7	22.5	13.8	17.5
Queue Length 50th (ft)	56	0	3	81	59
Queue Length 95th (ft)	169	24	19	165	154
Internal Link Dist (ft)	1867			481	560
Turn Bay Length (ft)		175	100		
Base Capacity (vph)	1065	969	276	1502	1007
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.36	0.15	0.05	0.33	0.35

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	303	120	12	400	245	37
Future Volume (veh/h)	303	120	12	400	245	37
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	1900	1900
Adj Flow Rate, veh/h	379	150	15	500	306	46
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	571	483	41	869	398	60
Arrive On Green	0.31	0.31	0.02	0.46	0.26	0.26
Sat Flow, veh/h	1870	1585	1781	1870	1520	228
Grp Volume(v), veh/h	379	150	15	500	353	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1753	0
Q Serve(g_s), s	6.1	2.5	0.3	6.7	6.4	0.0
Cycle Q Clear(g_c), s	6.1	2.5	0.3	6.7	6.4	0.0
Prop In Lane		1.00	1.00		0.87	0.13
Lane Grp Cap(c), veh/h	571	483	41	869	459	0
V/C Ratio(X)	0.66	0.31	0.36	0.58	0.77	0.00
Avail Cap(c_a), veh/h	1195	1013	310	1195	1121	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	10.4	9.2	16.6	6.7	11.7	0.0
Incr Delay (d2), s/veh	1.3	0.4	5.2	0.6	2.7	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	2.0	0.7	0.2	1.7	2.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.8	9.5	21.8	7.3	14.5	0.0
LnGrp LOS	B	A	C	A	B	A
Approach Vol, veh/h	529			515	353	
Approach Delay, s/veh	11.1			7.8	14.5	
Approach LOS	B			A	B	

Timer - Assigned Phs	2	3	4	8
Phs Duration (G+Y+Rc), s	13.7	5.5	15.2	20.7
Change Period (Y+Rc), s	* 4.7	* 4.7	* 4.7	* 4.7
Max Green Setting (Gmax), s	* 22	* 6	* 22	* 22
Max Q Clear Time (g_c+I1), s	8.4	2.3	8.1	8.7
Green Ext Time (p_c), s	0.9	0.0	2.4	2.7

Intersection Summary	
HCM 6th Ctrl Delay	10.7
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

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

MOVEMENT SUMMARY

Site: 15 [SR 174 / Brunswick Road]

MITIG8 EPAP + Project 1530 PM
Centennial Site
Site Category: (None)
Roundabout

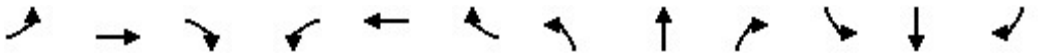
Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
East: RoadName												
6	T1	202	3.0	0.411	7.0	LOS A	2.6	66.5	0.33	0.17	0.33	34.1
16	R2	300	3.0	0.411	7.0	LOS A	2.6	66.5	0.33	0.17	0.33	33.1
Approach		502	3.0	0.411	7.0	LOS A	2.6	66.5	0.33	0.17	0.33	33.5
North: RoadName												
7	L2	366	3.0	0.436	7.9	LOS A	2.6	67.2	0.49	0.35	0.49	31.8
14	R2	117	3.0	0.436	7.9	LOS A	2.6	67.2	0.49	0.35	0.49	30.9
Approach		484	3.0	0.436	7.9	LOS A	2.6	67.2	0.49	0.35	0.49	31.6
West: RoadName												
5	L2	88	3.0	0.341	7.7	LOS A	1.7	43.3	0.57	0.50	0.57	33.1
2	T1	223	3.0	0.341	7.7	LOS A	1.7	43.3	0.57	0.50	0.57	33.1
Approach		311	3.0	0.341	7.7	LOS A	1.7	43.3	0.57	0.50	0.57	33.1
All Vehicles		1297	3.0	0.436	7.5	LOS A	2.6	67.2	0.45	0.32	0.45	32.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	232	68	114	266	532	40	381	9
v/c Ratio	0.38	0.29	0.31	0.88	0.61	0.19	0.71	0.02
Control Delay	1.8	30.1	3.3	62.0	20.0	29.4	28.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.8	30.1	3.3	62.0	20.0	29.4	28.0	0.0
Queue Length 50th (ft)	0	24	0	102	123	14	129	0
Queue Length 95th (ft)	0	62	11	#268	#368	43	220	0
Internal Link Dist (ft)	1255	1856			1215		1576	
Turn Bay Length (ft)				550		120		150
Base Capacity (vph)	689	301	425	301	867	301	777	765
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.23	0.27	0.88	0.61	0.13	0.49	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	218	64	0	107	250	481	19	38	358	8
Future Volume (veh/h)	0	0	218	64	0	107	250	481	19	38	358	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	232	68	0	114	266	512	20	40	381	9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	0	251	179	0	159	282	654	26	71	464	393
Arrive On Green	0.00	0.00	0.16	0.10	0.00	0.10	0.16	0.37	0.37	0.04	0.25	0.25
Sat Flow, veh/h	0	0	1585	1781	0	1585	1781	1788	70	1781	1870	1585
Grp Volume(v), veh/h	0	0	232	68	0	114	266	0	532	40	381	9
Grp Sat Flow(s),veh/h/ln	0	0	1585	1781	0	1585	1781	0	1858	1781	1870	1585
Q Serve(g_s), s	0.0	0.0	9.0	2.2	0.0	4.4	9.3	0.0	15.9	1.4	12.0	0.3
Cycle Q Clear(g_c), s	0.0	0.0	9.0	2.2	0.0	4.4	9.3	0.0	15.9	1.4	12.0	0.3
Prop In Lane	0.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	0	0	251	179	0	159	282	0	680	71	464	393
V/C Ratio(X)	0.00	0.00	0.93	0.38	0.00	0.72	0.94	0.00	0.78	0.56	0.82	0.02
Avail Cap(c_a), veh/h	0	0	251	282	0	251	282	0	721	282	726	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	26.0	26.3	0.0	27.3	26.1	0.0	17.6	29.5	22.2	17.8
Incr Delay (d2), s/veh	0.0	0.0	37.4	1.3	0.0	5.9	38.9	0.0	5.3	6.7	4.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	5.8	1.0	0.0	1.8	6.5	0.0	6.6	0.7	5.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	63.4	27.7	0.0	33.2	65.0	0.0	23.0	36.3	26.6	17.8
LnGrp LOS	A	A	E	C	A	C	E	A	C	D	C	B
Approach Vol, veh/h		232			182			798			430	
Approach Delay, s/veh		63.4			31.1			37.0			27.3	
Approach LOS		E			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.6	28.6		15.0	15.0	21.2		11.4				
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1				
Max Green Setting (Gmax), s	9.9	24.3		9.9	9.9	24.3		9.9				
Max Q Clear Time (g_c+I1), s	3.4	17.9		11.0	11.3	14.0		6.4				
Green Ext Time (p_c), s	0.0	1.6		0.0	0.0	1.5		0.2				

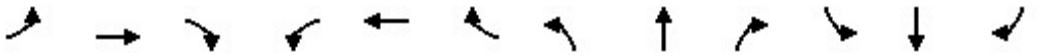
Intersection Summary			
HCM 6th Ctrl Delay		37.5	
HCM 6th LOS		D	

Notes

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

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	95	287	30	585	66	333
v/c Ratio	0.30	0.56	0.14	0.70	0.26	0.36
Control Delay	17.9	14.9	28.6	18.2	28.2	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.9	14.9	28.6	18.2	28.2	10.6
Queue Length 50th (ft)	18	38	9	146	19	40
Queue Length 95th (ft)	60	115	37	288	63	142
Internal Link Dist (ft)	489	1867		1607		1129
Turn Bay Length (ft)			230		205	
Base Capacity (vph)	617	883	214	1478	257	1491
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.33	0.14	0.40	0.26	0.22

Intersection Summary



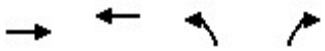
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	23	24	28	57	182	28	531	13	61	283	27
Future Volume (veh/h)	41	23	24	28	57	182	28	531	13	61	283	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1945	1870	1870	1945	1870	1870	1945	1870	1870	1945	1870
Adj Flow Rate, veh/h	44	25	26	30	61	196	30	571	14	66	304	29
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	232	132	96	104	96	254	61	705	17	130	719	69
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.03	0.37	0.37	0.07	0.41	0.41
Sat Flow, veh/h	564	603	439	100	438	1160	1781	1890	46	1781	1748	167
Grp Volume(v), veh/h	95	0	0	287	0	0	30	0	585	66	0	333
Grp Sat Flow(s),veh/h/ln	1605	0	0	1698	0	0	1781	0	1937	1781	0	1915
Q Serve(g_s), s	0.0	0.0	0.0	3.1	0.0	0.0	0.8	0.0	13.2	1.7	0.0	6.0
Cycle Q Clear(g_c), s	2.1	0.0	0.0	7.7	0.0	0.0	0.8	0.0	13.2	1.7	0.0	6.0
Prop In Lane	0.46		0.27	0.10		0.68	1.00		0.02	1.00		0.09
Lane Grp Cap(c), veh/h	460	0	0	454	0	0	61	0	722	130	0	788
V/C Ratio(X)	0.21	0.00	0.00	0.63	0.00	0.00	0.49	0.00	0.81	0.51	0.00	0.42
Avail Cap(c_a), veh/h	677	0	0	707	0	0	183	0	1195	220	0	788
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.6	0.0	0.0	17.8	0.0	0.0	23.1	0.0	13.7	21.7	0.0	10.2
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.5	0.0	0.0	6.0	0.0	2.2	3.1	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	0.8	0.0	0.0	2.7	0.0	0.0	0.4	0.0	4.4	0.7	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.8	0.0	0.0	19.2	0.0	0.0	29.1	0.0	15.9	24.8	0.0	10.6
LnGrp LOS	B	A	A	B	A	A	C	A	B	C	A	B
Approach Vol, veh/h		95			287			615			399	
Approach Delay, s/veh		15.8			19.2			16.6			12.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.6	24.6		15.4	6.8	26.5		15.4				
Change Period (Y+Rc), s	5.1	6.5		* 4.7	5.1	6.5		* 4.7				
Max Green Setting (Gmax), s	6.0	30.0		* 18	5.0	18.0		* 18				
Max Q Clear Time (g_c+I1), s	3.7	15.2		4.1	2.8	8.0		9.7				
Green Ext Time (p_c), s	0.0	2.9		0.4	0.0	1.2		1.0				

Intersection Summary			
HCM 6th Ctrl Delay		16.0	
HCM 6th LOS		B	

Notes

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



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	303	935	188	276
v/c Ratio	0.68	0.74	0.56	0.53
Control Delay	31.7	25.7	33.2	7.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	31.7	25.7	33.2	7.7
Queue Length 50th (ft)	111	171	72	0
Queue Length 95th (ft)	209	#358	148	59
Internal Link Dist (ft)	795	110	1248	
Turn Bay Length (ft)			400	
Base Capacity (vph)	701	1347	676	775
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.43	0.69	0.28	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	220	53	66	776	169	248
Future Volume (veh/h)	220	53	66	776	169	248
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	244	59	73	862	188	276
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	311	75	92	1136	389	346
Arrive On Green	0.21	0.21	0.34	0.34	0.22	0.22
Sat Flow, veh/h	1455	352	271	3456	1781	1585
Grp Volume(v), veh/h	0	303	500	435	188	276
Grp Sat Flow(s),veh/h/ln	0	1807	1857	1777	1781	1585
Q Serve(g_s), s	0.0	9.7	15.0	13.2	5.7	10.1
Cycle Q Clear(g_c), s	0.0	9.7	15.0	13.2	5.7	10.1
Prop In Lane		0.19	0.15		1.00	1.00
Lane Grp Cap(c), veh/h	0	386	627	600	389	346
V/C Ratio(X)	0.00	0.78	0.80	0.73	0.48	0.80
Avail Cap(c_a), veh/h	0	745	766	733	735	654
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	22.8	18.4	17.8	20.9	22.7
Incr Delay (d2), s/veh	0.0	3.5	4.9	2.8	0.9	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.2	6.6	5.3	2.3	3.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	26.3	23.3	20.6	21.9	26.9
LnGrp LOS	A	C	C	C	C	C
Approach Vol, veh/h	303			935	464	
Approach Delay, s/veh	26.3			22.0	24.9	
Approach LOS	C			C	C	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	18.1	17.8	25.4
Change Period (Y+Rc), s	* 4.7	* 4.7	4.7
Max Green Setting (Gmax), s	* 25	* 25	25.3
Max Q Clear Time (g_c+I1), s	12.1	11.7	17.0
Green Ext Time (p_c), s	1.3	1.5	3.8

Intersection Summary	
HCM 6th Ctrl Delay	23.6
HCM 6th LOS	C

Notes

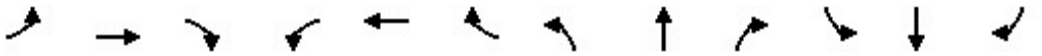
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	247	26	78	308	582	97	499	14
v/c Ratio	0.42	0.14	0.24	0.94	0.71	0.45	0.79	0.02
Control Delay	2.2	31.9	1.8	70.7	23.4	37.0	30.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.2	31.9	1.8	70.7	23.4	37.0	30.8	0.1
Queue Length 50th (ft)	0	11	0	~148	212	40	187	0
Queue Length 95th (ft)	0	33	0	#310	#368	88	306	0
Internal Link Dist (ft)	1255	1856			1215		1576	
Turn Bay Length (ft)				550		120		150
Base Capacity (vph)	657	272	392	327	869	245	791	769
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.10	0.20	0.94	0.67	0.40	0.63	0.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	240	25	0	76	299	507	57	94	484	14
Future Volume (veh/h)	0	0	240	25	0	76	299	507	57	94	484	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	247	26	0	78	308	523	59	97	499	14
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	0	227	133	0	119	306	674	76	125	574	486
Arrive On Green	0.00	0.00	0.14	0.07	0.00	0.07	0.17	0.41	0.41	0.07	0.31	0.31
Sat Flow, veh/h	0	0	1585	1781	0	1585	1781	1651	186	1781	1870	1585
Grp Volume(v), veh/h	0	0	247	26	0	78	308	0	582	97	499	14
Grp Sat Flow(s),veh/h/ln	0	0	1585	1781	0	1585	1781	0	1837	1781	1870	1585
Q Serve(g_s), s	0.0	0.0	9.9	0.9	0.0	3.3	11.9	0.0	19.0	3.7	17.5	0.4
Cycle Q Clear(g_c), s	0.0	0.0	9.9	0.9	0.0	3.3	11.9	0.0	19.0	3.7	17.5	0.4
Prop In Lane	0.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	0	0	227	133	0	119	306	0	750	125	574	486
V/C Ratio(X)	0.00	0.00	1.09	0.19	0.00	0.66	1.01	0.00	0.78	0.77	0.87	0.03
Avail Cap(c_a), veh/h	0	0	227	255	0	227	306	0	777	229	738	625
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	29.7	30.1	0.0	31.2	28.7	0.0	17.7	31.6	22.7	16.8
Incr Delay (d2), s/veh	0.0	0.0	85.7	0.7	0.0	6.0	52.9	0.0	4.8	9.7	8.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	9.0	0.4	0.0	1.4	9.1	0.0	7.6	1.8	8.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	115.4	30.8	0.0	37.2	81.6	0.0	22.5	41.4	31.6	16.8
LnGrp LOS	A	A	F	C	A	D	F	A	C	D	C	B
Approach Vol, veh/h		247			104			890			610	
Approach Delay, s/veh		115.4			35.6			43.0			32.8	
Approach LOS		F			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	34.0		15.0	17.0	26.9		10.3				
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1				
Max Green Setting (Gmax), s	8.9	29.3		9.9	11.9	27.3		9.9				
Max Q Clear Time (g_c+I1), s	5.7	21.0		11.9	13.9	19.5		5.3				
Green Ext Time (p_c), s	0.1	2.2		0.0	0.0	1.8		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		48.9	
HCM 6th LOS		D	

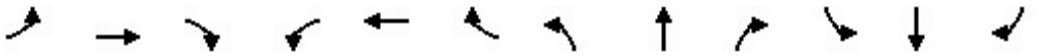
Notes

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

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	86	155	21	433	155	589
v/c Ratio	0.25	0.38	0.09	0.62	0.58	0.45
Control Delay	15.1	12.4	22.1	16.6	33.9	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	12.4	22.1	16.6	33.9	9.0
Queue Length 50th (ft)	13	15	5	87	37	70
Queue Length 95th (ft)	47	60	24	173	#137	246
Internal Link Dist (ft)	489	1867		1607		1129
Turn Bay Length (ft)			230		205	
Base Capacity (vph)	805	869	223	1513	268	1555
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.18	0.09	0.29	0.58	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



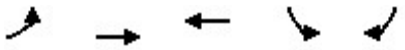
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	29	27	25	44	85	21	393	36	153	550	33
Future Volume (veh/h)	30	29	27	25	44	85	21	393	36	153	550	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1945	1870	1870	1945	1870	1870	1945	1870	1870	1945	1870
Adj Flow Rate, veh/h	30	29	27	25	44	86	21	397	36	155	556	33
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	186	112	79	134	83	135	46	546	50	224	746	44
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.03	0.31	0.31	0.13	0.41	0.41
Sat Flow, veh/h	424	782	552	182	577	946	1781	1757	159	1781	1818	108
Grp Volume(v), veh/h	86	0	0	155	0	0	21	0	433	155	0	589
Grp Sat Flow(s),veh/h/ln	1758	0	0	1704	0	0	1781	0	1916	1781	0	1926
Q Serve(g_s), s	0.0	0.0	0.0	1.5	0.0	0.0	0.5	0.0	7.8	3.2	0.0	10.1
Cycle Q Clear(g_c), s	1.6	0.0	0.0	3.3	0.0	0.0	0.5	0.0	7.8	3.2	0.0	10.1
Prop In Lane	0.35		0.31	0.16		0.55	1.00		0.08	1.00		0.06
Lane Grp Cap(c), veh/h	377	0	0	352	0	0	46	0	595	224	0	790
V/C Ratio(X)	0.23	0.00	0.00	0.44	0.00	0.00	0.45	0.00	0.73	0.69	0.00	0.75
Avail Cap(c_a), veh/h	887	0	0	889	0	0	230	0	1483	276	0	894
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.9	0.0	0.0	15.6	0.0	0.0	18.6	0.0	11.9	16.2	0.0	9.7
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.9	0.0	0.0	6.7	0.0	1.7	5.5	0.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	1.1	0.0	0.0	0.2	0.0	2.3	1.3	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.2	0.0	0.0	16.5	0.0	0.0	25.3	0.0	13.6	21.7	0.0	12.7
LnGrp LOS	B	A	A	B	A	A	C	A	B	C	A	B
Approach Vol, veh/h		86			155			454			744	
Approach Delay, s/veh		15.2			16.5			14.2			14.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	18.5		10.3	6.1	22.4		10.3				
Change Period (Y+Rc), s	5.1	6.5		* 4.7	5.1	6.5		* 4.7				
Max Green Setting (Gmax), s	6.0	30.0		* 18	5.0	18.0		* 18				
Max Q Clear Time (g_c+I1), s	5.2	9.8		3.6	2.5	12.1		5.3				
Green Ext Time (p_c), s	0.0	2.2		0.3	0.0	1.7		0.6				

Intersection Summary			
HCM 6th Ctrl Delay		14.7	
HCM 6th LOS		B	

Notes

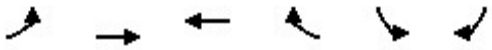
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	85	246	557	445	126
v/c Ratio	0.56	0.28	0.86	0.76	0.21
Control Delay	47.5	12.3	35.9	27.1	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	47.5	12.3	35.9	27.1	4.0
Queue Length 50th (ft)	32	51	171	148	0
Queue Length 95th (ft)	#105	121	#428	238	28
Internal Link Dist (ft)		1597	2083	2110	
Turn Bay Length (ft)	120			100	
Base Capacity (vph)	151	961	645	910	875
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.56	0.26	0.86	0.49	0.14

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	78	226	239	273	409	116
Future Volume (veh/h)	78	226	239	273	409	116
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	85	246	260	0	445	126
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	135	751	377		563	501
Arrive On Green	0.08	0.40	0.20	0.00	0.32	0.32
Sat Flow, veh/h	1781	1870	1870	0	1781	1585
Grp Volume(v), veh/h	85	246	260	0	445	126
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	0	1781	1585
Q Serve(g_s), s	1.9	3.7	5.3	0.0	9.4	2.4
Cycle Q Clear(g_c), s	1.9	3.7	5.3	0.0	9.4	2.4
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	135	751	377		563	501
V/C Ratio(X)	0.63	0.33	0.69		0.79	0.25
Avail Cap(c_a), veh/h	217	911	911		1301	1158
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	18.4	8.5	15.2	0.0	12.8	10.4
Incr Delay (d2), s/veh	4.8	0.3	2.3	0.0	2.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.0	1.9	0.0	2.8	2.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.2	8.7	17.5	0.0	15.3	10.7
LnGrp LOS	C	A	B		B	B
Approach Vol, veh/h		331	260	A	571	
Approach Delay, s/veh		12.4	17.5		14.3	
Approach LOS		B	B		B	

Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			21.6		19.5	8.2	13.4
Change Period (Y+Rc), s			5.1		6.5	5.1	5.1
Max Green Setting (Gmax), s			20.0		30.0	5.0	20.0
Max Q Clear Time (g_c+I1), s			5.7		11.4	3.9	7.3
Green Ext Time (p_c), s			1.0		1.6	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	14.5
HCM 6th LOS	B

Notes

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

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Group Flow (vph)	411	150	15	531	352
v/c Ratio	0.55	0.21	0.06	0.66	0.60
Control Delay	14.9	3.7	22.8	14.3	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.9	3.7	22.8	14.3	18.0
Queue Length 50th (ft)	63	0	3	88	62
Queue Length 95th (ft)	185	24	19	177	154
Internal Link Dist (ft)	1867			481	560
Turn Bay Length (ft)		175	100		
Base Capacity (vph)	1045	953	271	1480	988
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.39	0.16	0.06	0.36	0.36

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	329	120	12	425	245	37
Future Volume (veh/h)	329	120	12	425	245	37
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	1900	1900
Adj Flow Rate, veh/h	411	150	15	531	306	46
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	598	507	41	889	396	60
Arrive On Green	0.32	0.32	0.02	0.48	0.26	0.26
Sat Flow, veh/h	1870	1585	1781	1870	1520	228
Grp Volume(v), veh/h	411	150	15	531	353	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1753	0
Q Serve(g_s), s	6.8	2.5	0.3	7.4	6.6	0.0
Cycle Q Clear(g_c), s	6.8	2.5	0.3	7.4	6.6	0.0
Prop In Lane		1.00	1.00		0.87	0.13
Lane Grp Cap(c), veh/h	598	507	41	889	457	0
V/C Ratio(X)	0.69	0.30	0.36	0.60	0.77	0.00
Avail Cap(c_a), veh/h	1157	980	300	1157	1084	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	10.5	9.1	17.1	6.8	12.2	0.0
Incr Delay (d2), s/veh	1.4	0.3	5.2	0.6	2.8	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	2.2	0.7	0.2	1.9	2.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.0	9.4	22.4	7.5	15.0	0.0
LnGrp LOS	B	A	C	A	B	A
Approach Vol, veh/h	561			546	353	
Approach Delay, s/veh	11.3			7.9	15.0	
Approach LOS	B			A	B	

Timer - Assigned Phs	2	3	4	8
Phs Duration (G+Y+Rc), s	14.0	5.5	16.1	21.6
Change Period (Y+Rc), s	* 4.7	* 4.7	* 4.7	* 4.7
Max Green Setting (Gmax), s	* 22	* 6	* 22	* 22
Max Q Clear Time (g_c+I1), s	8.6	2.3	8.8	9.4
Green Ext Time (p_c), s	0.9	0.0	2.6	2.8

Intersection Summary	
HCM 6th Ctrl Delay	10.9
HCM 6th LOS	B

Notes

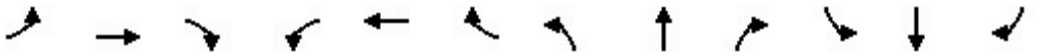
User approved volume balancing among the lanes for turning movement.

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

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	213	29	52	224	562	91	462	14
v/c Ratio	0.37	0.14	0.15	0.73	0.67	0.49	0.74	0.02
Control Delay	1.8	29.7	0.9	45.0	19.8	41.1	26.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.8	29.7	0.9	45.0	19.8	41.1	26.2	0.1
Queue Length 50th (ft)	0	11	0	87	185	35	160	0
Queue Length 95th (ft)	0	34	0	#220	312	#101	268	0
Internal Link Dist (ft)	1255	1856			1215		1576	
Turn Bay Length (ft)				550		120		150
Base Capacity (vph)	663	307	426	307	961	184	841	810
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.09	0.12	0.73	0.58	0.49	0.55	0.02

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



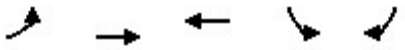
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	200	27	0	49	211	478	50	86	434	13
Future Volume (veh/h)	0	0	200	27	0	49	211	478	50	86	434	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	213	29	0	52	224	509	53	91	462	14
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	0	248	128	0	114	269	628	65	117	545	462
Arrive On Green	0.00	0.00	0.16	0.07	0.00	0.07	0.15	0.38	0.38	0.07	0.29	0.29
Sat Flow, veh/h	0	0	1585	1781	0	1585	1781	1666	173	1781	1870	1585
Grp Volume(v), veh/h	0	0	213	29	0	52	224	0	562	91	462	14
Grp Sat Flow(s),veh/h/ln	0	0	1585	1781	0	1585	1781	0	1839	1781	1870	1585
Q Serve(g_s), s	0.0	0.0	8.4	1.0	0.0	2.0	7.8	0.0	17.5	3.2	14.8	0.4
Cycle Q Clear(g_c), s	0.0	0.0	8.4	1.0	0.0	2.0	7.8	0.0	17.5	3.2	14.8	0.4
Prop In Lane	0.00		1.00	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	0	0	248	128	0	114	269	0	693	117	545	462
V/C Ratio(X)	0.00	0.00	0.86	0.23	0.00	0.46	0.83	0.00	0.81	0.78	0.85	0.03
Avail Cap(c_a), veh/h	0	0	248	279	0	248	279	0	749	168	762	646
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	26.2	27.9	0.0	28.4	26.3	0.0	17.8	29.4	21.3	16.1
Incr Delay (d2), s/veh	0.0	0.0	24.5	0.9	0.0	2.9	18.6	0.0	6.3	13.6	6.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	4.7	0.4	0.0	0.8	4.3	0.0	7.3	1.7	6.5	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	50.7	28.8	0.0	31.3	44.9	0.0	24.1	43.0	27.6	16.2
LnGrp LOS	A	A	D	C	A	C	D	A	C	D	C	B
Approach Vol, veh/h		213			81			786			567	
Approach Delay, s/veh		50.7			30.4			30.0			29.8	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.3	29.7		15.1	14.7	24.3		9.7				
Change Period (Y+Rc), s	5.1	5.7		5.1	5.1	5.7		5.1				
Max Green Setting (Gmax), s	6.0	26.0		10.0	10.0	26.0		10.0				
Max Q Clear Time (g_c+I1), s	5.2	19.5		10.4	9.8	16.8		4.0				
Green Ext Time (p_c), s	0.0	1.8		0.0	0.0	1.8		0.1				

Intersection Summary		
HCM 6th Ctrl Delay		32.7
HCM 6th LOS		C

Notes

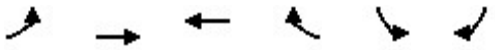
User approved pedestrian interval to be less than phase max green.



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	89	225	507	370	119
v/c Ratio	0.49	0.26	0.79	0.70	0.21
Control Delay	39.5	9.6	24.0	26.1	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	39.5	9.6	24.0	26.1	4.9
Queue Length 50th (ft)	31	41	116	114	0
Queue Length 95th (ft)	#95	83	#273	205	31
Internal Link Dist (ft)		1597	2083	2110	
Turn Bay Length (ft)	120			100	
Base Capacity (vph)	182	1183	833	738	729
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.49	0.19	0.61	0.50	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	81	205	186	276	337	108
Future Volume (veh/h)	81	205	186	276	337	108
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	89	225	204	0	370	119
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	143	790	389		485	432
Arrive On Green	0.08	0.42	0.21	0.00	0.27	0.27
Sat Flow, veh/h	1781	1870	1870	0	1781	1585
Grp Volume(v), veh/h	89	225	204	0	370	119
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	0	1781	1585
Q Serve(g_s), s	1.8	3.0	3.7	0.0	7.3	2.2
Cycle Q Clear(g_c), s	1.8	3.0	3.7	0.0	7.3	2.2
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	143	790	389		485	432
V/C Ratio(X)	0.62	0.28	0.52		0.76	0.28
Avail Cap(c_a), veh/h	234	1063	1063		947	842
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	16.9	7.2	13.4	0.0	12.7	10.9
Incr Delay (d2), s/veh	4.4	0.2	1.1	0.0	2.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.7	1.2	0.0	2.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.3	7.4	14.5	0.0	15.2	11.2
LnGrp LOS	C	A	B		B	B
Approach Vol, veh/h		314	204	A	489	
Approach Delay, s/veh		11.3	14.5		14.3	
Approach LOS		B	B		B	

Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			21.2		16.8	8.1	13.0
Change Period (Y+Rc), s			5.1		6.5	5.1	5.1
Max Green Setting (Gmax), s			21.6		20.2	5.0	21.6
Max Q Clear Time (g_c+I1), s			5.0		9.3	3.8	5.7
Green Ext Time (p_c), s			1.0		1.2	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	13.4
HCM 6th LOS	B

Notes

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

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Group Flow (vph)	379	150	15	500	352
v/c Ratio	0.52	0.21	0.05	0.63	0.60
Control Delay	14.5	3.7	22.5	13.8	17.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.5	3.7	22.5	13.8	17.5
Queue Length 50th (ft)	56	0	3	81	59
Queue Length 95th (ft)	169	24	19	165	154
Internal Link Dist (ft)	1867			481	560
Turn Bay Length (ft)		175	100		
Base Capacity (vph)	1065	969	276	1502	1007
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.36	0.15	0.05	0.33	0.35

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	303	120	12	400	245	37
Future Volume (veh/h)	303	120	12	400	245	37
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	1900	1900
Adj Flow Rate, veh/h	379	150	15	500	306	46
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	571	483	41	869	398	60
Arrive On Green	0.31	0.31	0.02	0.46	0.26	0.26
Sat Flow, veh/h	1870	1585	1781	1870	1520	228
Grp Volume(v), veh/h	379	150	15	500	353	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1753	0
Q Serve(g_s), s	6.1	2.5	0.3	6.7	6.4	0.0
Cycle Q Clear(g_c), s	6.1	2.5	0.3	6.7	6.4	0.0
Prop In Lane		1.00	1.00		0.87	0.13
Lane Grp Cap(c), veh/h	571	483	41	869	459	0
V/C Ratio(X)	0.66	0.31	0.36	0.58	0.77	0.00
Avail Cap(c_a), veh/h	1195	1013	310	1195	1121	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	10.4	9.2	16.6	6.7	11.7	0.0
Incr Delay (d2), s/veh	1.3	0.4	5.2	0.6	2.7	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	2.0	0.7	0.2	1.7	2.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.8	9.5	21.8	7.3	14.5	0.0
LnGrp LOS	B	A	C	A	B	A
Approach Vol, veh/h	529			515	353	
Approach Delay, s/veh	11.1			7.8	14.5	
Approach LOS	B			A	B	

Timer - Assigned Phs	2	3	4	8
Phs Duration (G+Y+Rc), s	13.7	5.5	15.2	20.7
Change Period (Y+Rc), s	* 4.7	* 4.7	* 4.7	* 4.7
Max Green Setting (Gmax), s	* 22	* 6	* 22	* 22
Max Q Clear Time (g_c+I1), s	8.4	2.3	8.1	8.7
Green Ext Time (p_c), s	0.9	0.0	2.4	2.7

Intersection Summary	
HCM 6th Ctrl Delay	10.7
HCM 6th LOS	B

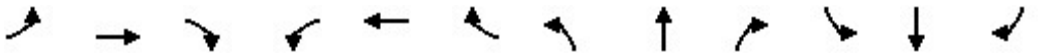
Notes

User approved volume balancing among the lanes for turning movement.

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

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	90	274	20	565	56	249
v/c Ratio	0.35	0.53	0.09	0.68	0.21	0.25
Control Delay	21.6	12.9	27.2	17.1	26.6	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.6	12.9	27.2	17.1	26.6	7.7
Queue Length 50th (ft)	20	27	5	133	15	26
Queue Length 95th (ft)	64	98	27	263	55	99
Internal Link Dist (ft)	489	1867		1607		1129
Turn Bay Length (ft)			230		205	
Base Capacity (vph)	542	916	220	1508	265	1530
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.30	0.09	0.37	0.21	0.16

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	22	13	25	48	181	19	513	12	52	203	29
Future Volume (veh/h)	48	22	13	25	48	181	19	513	12	52	203	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1945	1870	1870	1945	1870	1870	1945	1870	1870	1945	1870
Adj Flow Rate, veh/h	52	24	14	27	52	195	20	552	13	56	218	31
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	278	122	51	105	85	258	44	694	16	119	680	97
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.02	0.37	0.37	0.07	0.41	0.41
Sat Flow, veh/h	726	567	238	92	397	1206	1781	1893	45	1781	1666	237
Grp Volume(v), veh/h	90	0	0	274	0	0	20	0	565	56	0	249
Grp Sat Flow(s),veh/h/ln	1531	0	0	1694	0	0	1781	0	1937	1781	0	1903
Q Serve(g_s), s	0.0	0.0	0.0	2.6	0.0	0.0	0.5	0.0	12.1	1.4	0.0	4.1
Cycle Q Clear(g_c), s	1.9	0.0	0.0	7.0	0.0	0.0	0.5	0.0	12.1	1.4	0.0	4.1
Prop In Lane	0.58		0.16	0.10		0.71	1.00		0.02	1.00		0.12
Lane Grp Cap(c), veh/h	451	0	0	449	0	0	44	0	710	119	0	777
V/C Ratio(X)	0.20	0.00	0.00	0.61	0.00	0.00	0.46	0.00	0.80	0.47	0.00	0.32
Avail Cap(c_a), veh/h	694	0	0	741	0	0	193	0	1257	231	0	777
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.0	0.0	0.0	17.0	0.0	0.0	22.2	0.0	13.1	20.8	0.0	9.3
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.3	0.0	0.0	7.3	0.0	2.1	2.9	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	2.4	0.0	0.0	0.3	0.0	3.9	0.6	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.2	0.0	0.0	18.3	0.0	0.0	29.6	0.0	15.2	23.7	0.0	9.5
LnGrp LOS	B	A	A	B	A	A	C	A	B	C	A	A
Approach Vol, veh/h		90			274			585			305	
Approach Delay, s/veh		15.2			18.3			15.7			12.1	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	23.4		14.6	6.2	25.4		14.6				
Change Period (Y+Rc), s	5.1	6.5		* 4.7	5.1	6.5		* 4.7				
Max Green Setting (Gmax), s	6.0	30.0		* 18	5.0	18.0		* 18				
Max Q Clear Time (g_c+I1), s	3.4	14.1		3.9	2.5	6.1		9.0				
Green Ext Time (p_c), s	0.0	2.9		0.3	0.0	0.9		1.0				

Intersection Summary		
HCM 6th Ctrl Delay		15.4
HCM 6th LOS		B

Notes

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

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	145	479	461	454	412	151
v/c Ratio	0.44	0.53	0.77	0.33	0.75	0.26
Control Delay	29.2	8.3	28.5	5.2	35.3	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	8.3	28.5	5.2	35.3	6.0
Queue Length 50th (ft)	52	71	154	59	152	0
Queue Length 95th (ft)	105	129	#289	124	#342	42
Internal Link Dist (ft)	1535			1385	682	
Turn Bay Length (ft)		300	300			
Base Capacity (vph)	564	1059	793	1440	551	574
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.45	0.58	0.32	0.75	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	133	441	424	418	379	139
Future Volume (veh/h)	133	441	424	418	379	139
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	145	479	461	454	412	151
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	433	849	521	1145	463	393
Arrive On Green	0.24	0.24	0.29	0.61	0.25	0.25
Sat Flow, veh/h	1781	1585	1781	1870	1870	1585
Grp Volume(v), veh/h	145	479	461	454	412	151
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1870	1585
Q Serve(g_s), s	4.4	13.1	16.1	8.1	13.8	5.2
Cycle Q Clear(g_c), s	4.4	13.1	16.1	8.1	13.8	5.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	433	849	521	1145	463	393
V/C Ratio(X)	0.33	0.56	0.89	0.40	0.89	0.38
Avail Cap(c_a), veh/h	492	902	692	1145	480	407
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	1.00
Uniform Delay (d), s/veh	20.3	10.1	22.0	6.5	23.6	20.4
Incr Delay (d2), s/veh	0.5	0.7	10.6	0.2	17.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.2	7.7	2.5	8.0	1.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.7	10.8	32.6	6.7	41.5	21.0
LnGrp LOS	C	B	C	A	D	C
Approach Vol, veh/h	624			915	563	
Approach Delay, s/veh	13.1			19.7	36.0	
Approach LOS	B			B	D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		44.6		20.5	23.7	20.8
Change Period (Y+Rc), s		* 4.7		* 4.7	* 4.7	* 4.7
Max Green Setting (Gmax), s		* 21		* 18	* 25	* 17
Max Q Clear Time (g_c+I1), s		10.1		15.1	18.1	15.8
Green Ext Time (p_c), s		2.1		0.8	0.9	0.3

Intersection Summary	
HCM 6th Ctrl Delay	22.1
HCM 6th LOS	C

Notes

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

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

MOVEMENT SUMMARY

Site: 21 [Dorsey Dr / Sutton Way]

MITIG8 Cumulative PM
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: RoadName												
3	L2	461	3.0	0.756	15.3	LOS C	10.9	278.2	0.73	0.54	0.83	29.4
8	T1	454	3.0	0.756	15.3	LOS C	10.9	278.2	0.73	0.54	0.83	29.4
Approach		915	3.0	0.756	15.3	LOS C	10.9	278.2	0.73	0.54	0.83	29.4
North: RoadName												
4	T1	412	3.0	0.680	16.5	LOS C	7.9	201.4	0.82	1.08	1.49	29.9
14	R2	151	3.0	0.680	16.5	LOS C	7.9	201.4	0.82	1.08	1.49	29.1
Approach		563	3.0	0.680	16.5	LOS C	7.9	201.4	0.82	1.08	1.49	29.7
West: RoadName												
5	L2	145	3.0	0.711	17.0	LOS C	9.6	246.5	0.84	1.11	1.56	29.1
12	R2	479	3.0	0.711	17.0	LOS C	9.6	246.5	0.84	1.11	1.56	28.4
Approach		624	3.0	0.711	17.0	LOS C	9.6	246.5	0.84	1.11	1.56	28.5
All Vehicles		2102	3.0	0.756	16.1	LOS C	10.9	278.2	0.79	0.85	1.22	29.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	145	479	461	454	412	151
v/c Ratio	0.44	0.53	0.77	0.33	0.75	0.26
Control Delay	29.2	8.3	28.5	5.2	35.3	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	8.3	28.5	5.2	35.3	6.0
Queue Length 50th (ft)	52	71	154	59	152	0
Queue Length 95th (ft)	105	129	#289	124	#342	42
Internal Link Dist (ft)	1535			1385	682	
Turn Bay Length (ft)		300	300			
Base Capacity (vph)	564	1059	793	1440	551	574
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.45	0.58	0.32	0.75	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	133	441	424	418	379	139
Future Volume (veh/h)	133	441	424	418	379	139
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	145	479	461	454	412	151
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	433	849	521	1145	463	393
Arrive On Green	0.24	0.24	0.29	0.61	0.25	0.25
Sat Flow, veh/h	1781	1585	1781	1870	1870	1585
Grp Volume(v), veh/h	145	479	461	454	412	151
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1870	1585
Q Serve(g_s), s	4.4	13.1	16.1	8.1	13.8	5.2
Cycle Q Clear(g_c), s	4.4	13.1	16.1	8.1	13.8	5.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	433	849	521	1145	463	393
V/C Ratio(X)	0.33	0.56	0.89	0.40	0.89	0.38
Avail Cap(c_a), veh/h	492	902	692	1145	480	407
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	1.00
Uniform Delay (d), s/veh	20.3	10.1	22.0	6.5	23.6	20.4
Incr Delay (d2), s/veh	0.5	0.7	10.6	0.2	17.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.2	7.7	2.5	8.0	1.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.7	10.8	32.6	6.7	41.5	21.0
LnGrp LOS	C	B	C	A	D	C
Approach Vol, veh/h	624			915	563	
Approach Delay, s/veh	13.1			19.7	36.0	
Approach LOS	B			B	D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		44.6		20.5	23.7	20.8
Change Period (Y+Rc), s		* 4.7		* 4.7	* 4.7	* 4.7
Max Green Setting (Gmax), s		* 21		* 18	* 25	* 17
Max Q Clear Time (g_c+I1), s		10.1		15.1	18.1	15.8
Green Ext Time (p_c), s		2.1		0.8	0.9	0.3

Intersection Summary	
HCM 6th Ctrl Delay	22.1
HCM 6th LOS	C

Notes

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

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

MOVEMENT SUMMARY

Site: 21 [Dorsey Dr / Sutton Way]

MITIG8 Cumulative 1530
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: RoadName												
3	L2	461	3.0	0.756	15.3	LOS C	10.9	278.2	0.73	0.54	0.83	29.4
8	T1	454	3.0	0.756	15.3	LOS C	10.9	278.2	0.73	0.54	0.83	29.4
Approach		915	3.0	0.756	15.3	LOS C	10.9	278.2	0.73	0.54	0.83	29.4
North: RoadName												
4	T1	412	3.0	0.680	16.5	LOS C	7.9	201.4	0.82	1.08	1.49	29.9
14	R2	151	3.0	0.680	16.5	LOS C	7.9	201.4	0.82	1.08	1.49	29.1
Approach		563	3.0	0.680	16.5	LOS C	7.9	201.4	0.82	1.08	1.49	29.7
West: RoadName												
5	L2	145	3.0	0.711	17.0	LOS C	9.6	246.5	0.84	1.11	1.56	29.1
12	R2	479	3.0	0.711	17.0	LOS C	9.6	246.5	0.84	1.11	1.56	28.4
Approach		624	3.0	0.711	17.0	LOS C	9.6	246.5	0.84	1.11	1.56	28.5
All Vehicles		2102	3.0	0.756	16.1	LOS C	10.9	278.2	0.79	0.85	1.22	29.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	113	274	29	615	56	339
v/c Ratio	0.43	0.53	0.14	0.72	0.22	0.35
Control Delay	22.6	13.1	28.2	18.1	27.4	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	13.1	28.2	18.1	27.4	10.1
Queue Length 50th (ft)	25	28	8	152	16	39
Queue Length 95th (ft)	76	98	35	296	55	139
Internal Link Dist (ft)	489	1867		1607		1129
Turn Bay Length (ft)			230		205	
Base Capacity (vph)	531	890	214	1483	256	1501
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.31	0.14	0.41	0.22	0.23

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	22	25	25	48	181	27	560	12	52	286	29
Future Volume (veh/h)	58	22	25	25	48	181	27	560	12	52	286	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1945	1870	1870	1945	1870	1870	1945	1870	1870	1945	1870
Adj Flow Rate, veh/h	62	24	27	27	52	195	29	602	13	56	308	31
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	257	102	77	101	84	255	59	736	16	117	731	74
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.03	0.39	0.39	0.07	0.42	0.42
Sat Flow, veh/h	675	484	364	92	396	1205	1781	1897	41	1781	1739	175
Grp Volume(v), veh/h	113	0	0	274	0	0	29	0	615	56	0	339
Grp Sat Flow(s),veh/h/ln	1523	0	0	1693	0	0	1781	0	1938	1781	0	1914
Q Serve(g_s), s	0.0	0.0	0.0	2.8	0.0	0.0	0.8	0.0	13.9	1.5	0.0	6.1
Cycle Q Clear(g_c), s	2.7	0.0	0.0	7.4	0.0	0.0	0.8	0.0	13.9	1.5	0.0	6.1
Prop In Lane	0.55		0.24	0.10		0.71	1.00		0.02	1.00		0.09
Lane Grp Cap(c), veh/h	437	0	0	440	0	0	59	0	752	117	0	804
V/C Ratio(X)	0.26	0.00	0.00	0.62	0.00	0.00	0.49	0.00	0.82	0.48	0.00	0.42
Avail Cap(c_a), veh/h	656	0	0	703	0	0	183	0	1193	219	0	804
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.1	0.0	0.0	18.0	0.0	0.0	23.1	0.0	13.4	22.0	0.0	9.9
Incr Delay (d2), s/veh	0.3	0.0	0.0	1.4	0.0	0.0	6.1	0.0	2.5	3.0	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	1.0	0.0	0.0	2.6	0.0	0.0	0.4	0.0	4.6	0.6	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.5	0.0	0.0	19.5	0.0	0.0	29.3	0.0	15.9	25.0	0.0	10.3
LnGrp LOS	B	A	A	B	A	A	C	A	B	C	A	B
Approach Vol, veh/h		113			274			644			395	
Approach Delay, s/veh		16.5			19.5			16.5			12.4	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.3	25.4		15.0	6.7	27.0		15.0				
Change Period (Y+Rc), s	5.1	6.5		* 4.7	5.1	6.5		* 4.7				
Max Green Setting (Gmax), s	6.0	30.0		* 18	5.0	18.0		* 18				
Max Q Clear Time (g_c+I1), s	3.5	15.9		4.7	2.8	8.1		9.4				
Green Ext Time (p_c), s	0.0	3.1		0.4	0.0	1.2		1.0				

Intersection Summary			
HCM 6th Ctrl Delay		15.9	
HCM 6th LOS		B	

Notes

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

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	203	104	39	802	845
v/c Ratio	0.49	0.23	0.13	0.81	0.53
Control Delay	24.4	6.8	26.4	17.2	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	24.4	6.8	26.4	17.2	12.9
Queue Length 50th (ft)	52	0	10	166	66
Queue Length 95th (ft)	136	34	43	362	198
Internal Link Dist (ft)	1470			317	1215
Turn Bay Length (ft)	100		200		
Base Capacity (vph)	659	654	292	1543	2170
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.31	0.16	0.13	0.52	0.39

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	193	99	37	762	715	87
Future Volume (veh/h)	193	99	37	762	715	87
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	203	104	39	802	753	92
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	329	293	124	1028	1144	140
Arrive On Green	0.18	0.18	0.07	0.55	0.36	0.36
Sat Flow, veh/h	1781	1585	1781	1870	3281	389
Grp Volume(v), veh/h	203	104	39	802	420	425
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1777	1800
Q Serve(g_s), s	4.4	2.4	0.9	14.2	8.4	8.4
Cycle Q Clear(g_c), s	4.4	2.4	0.9	14.2	8.4	8.4
Prop In Lane	1.00	1.00	1.00			0.22
Lane Grp Cap(c), veh/h	329	293	124	1028	638	646
V/C Ratio(X)	0.62	0.36	0.31	0.78	0.66	0.66
Avail Cap(c_a), veh/h	761	677	338	1332	1265	1282
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	1.00
Uniform Delay (d), s/veh	15.8	15.0	18.6	7.5	11.3	11.3
Incr Delay (d2), s/veh	1.9	0.7	1.4	2.3	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.1	0.3	3.0	2.4	2.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.7	15.7	20.1	9.8	12.5	12.5
LnGrp LOS	B	B	C	A	B	B
Approach Vol, veh/h	307			841	845	
Approach Delay, s/veh	17.0			10.3	12.5	
Approach LOS	B			B	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		29.7		12.5	8.0	21.6
Change Period (Y+Rc), s		6.5		* 4.7	5.1	6.5
Max Green Setting (Gmax), s		30.0		* 18	8.0	30.0
Max Q Clear Time (g_c+I1), s		16.2		6.4	2.9	10.4
Green Ext Time (p_c), s		4.5		0.7	0.0	4.8

Intersection Summary		
HCM 6th Ctrl Delay		12.2
HCM 6th LOS		B

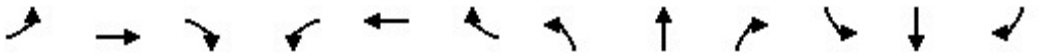
Notes

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

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	84	143	22	444	153	658
v/c Ratio	0.25	0.36	0.10	0.63	0.57	0.50
Control Delay	15.1	12.4	22.2	16.7	33.6	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	12.4	22.2	16.7	33.6	9.9
Queue Length 50th (ft)	12	14	5	89	36	80
Queue Length 95th (ft)	46	57	24	176	#135	#298
Internal Link Dist (ft)	489	1867		1607		1129
Turn Bay Length (ft)			230		205	
Base Capacity (vph)	808	862	223	1512	268	1539
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.17	0.10	0.29	0.57	0.43

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	24	27	23	40	79	22	406	34	151	574	77
Future Volume (veh/h)	33	24	27	23	40	79	22	406	34	151	574	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1945	1870	1870	1945	1870	1870	1945	1870	1870	1945	1870
Adj Flow Rate, veh/h	33	24	27	23	40	80	22	410	34	153	580	78
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	98	78	132	81	134	48	561	46	222	695	93
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.03	0.32	0.32	0.12	0.41	0.41
Sat Flow, veh/h	484	693	558	179	572	954	1781	1772	147	1781	1679	226
Grp Volume(v), veh/h	84	0	0	143	0	0	22	0	444	153	0	658
Grp Sat Flow(s),veh/h/ln	1735	0	0	1705	0	0	1781	0	1919	1781	0	1905
Q Serve(g_s), s	0.0	0.0	0.0	1.2	0.0	0.0	0.5	0.0	8.0	3.2	0.0	12.1
Cycle Q Clear(g_c), s	1.6	0.0	0.0	3.0	0.0	0.0	0.5	0.0	8.0	3.2	0.0	12.1
Prop In Lane	0.39		0.32	0.16		0.56	1.00		0.08	1.00		0.12
Lane Grp Cap(c), veh/h	373	0	0	347	0	0	48	0	607	222	0	788
V/C Ratio(X)	0.23	0.00	0.00	0.41	0.00	0.00	0.45	0.00	0.73	0.69	0.00	0.84
Avail Cap(c_a), veh/h	875	0	0	885	0	0	229	0	1477	274	0	880
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.1	0.0	0.0	15.7	0.0	0.0	18.7	0.0	11.8	16.3	0.0	10.2
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.8	0.0	0.0	6.5	0.0	1.7	5.3	0.0	6.4
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	0.6	0.0	0.0	1.0	0.0	0.0	0.2	0.0	2.4	1.3	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.4	0.0	0.0	16.4	0.0	0.0	25.2	0.0	13.6	21.7	0.0	16.7
LnGrp LOS	B	A	A	B	A	A	C	A	B	C	A	B
Approach Vol, veh/h		84			143			466			811	
Approach Delay, s/veh		15.4			16.4			14.1			17.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	18.8		10.2	6.2	22.6		10.2				
Change Period (Y+Rc), s	5.1	6.5		* 4.7	5.1	6.5		* 4.7				
Max Green Setting (Gmax), s	6.0	30.0		* 18	5.0	18.0		* 18				
Max Q Clear Time (g_c+I1), s	5.2	10.0		3.6	2.5	14.1		5.0				
Green Ext Time (p_c), s	0.0	2.3		0.3	0.0	1.4		0.6				

Intersection Summary		
HCM 6th Ctrl Delay		16.3
HCM 6th LOS		B

Notes

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

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	145	483	466	454	412	151
v/c Ratio	0.44	0.54	0.77	0.33	0.76	0.27
Control Delay	29.3	8.3	28.8	5.2	35.5	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.3	8.3	28.8	5.2	35.5	6.0
Queue Length 50th (ft)	53	72	156	59	154	0
Queue Length 95th (ft)	105	131	#295	124	#342	42
Internal Link Dist (ft)	1377			1398	774	
Turn Bay Length (ft)		300	300			
Base Capacity (vph)	561	1056	790	1437	548	572
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.46	0.59	0.32	0.75	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	133	444	429	418	379	139
Future Volume (veh/h)	133	444	429	418	379	139
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	145	483	466	454	412	151
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	434	853	525	1147	462	392
Arrive On Green	0.24	0.24	0.29	0.61	0.25	0.25
Sat Flow, veh/h	1781	1585	1781	1870	1870	1585
Grp Volume(v), veh/h	145	483	466	454	412	151
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1870	1585
Q Serve(g_s), s	4.4	13.3	16.4	8.1	14.0	5.2
Cycle Q Clear(g_c), s	4.4	13.3	16.4	8.1	14.0	5.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	434	853	525	1147	462	392
V/C Ratio(X)	0.33	0.57	0.89	0.40	0.89	0.39
Avail Cap(c_a), veh/h	488	901	686	1147	476	403
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	1.00
Uniform Delay (d), s/veh	20.4	10.1	22.1	6.5	23.9	20.6
Incr Delay (d2), s/veh	0.4	0.7	11.1	0.2	18.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	13.0	7.9	2.6	8.1	1.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.9	10.8	33.2	6.7	42.3	21.2
LnGrp LOS	C	B	C	A	D	C
Approach Vol, veh/h	628			920	563	
Approach Delay, s/veh	13.1			20.1	36.6	
Approach LOS	B			C	D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		45.0		20.7	24.0	20.9
Change Period (Y+Rc), s		* 4.7		* 4.7	* 4.7	* 4.7
Max Green Setting (Gmax), s		* 21		* 18	* 25	* 17
Max Q Clear Time (g_c+I1), s		10.1		15.3	18.4	16.0
Green Ext Time (p_c), s		2.1		0.7	0.9	0.3

Intersection Summary	
HCM 6th Ctrl Delay	22.5
HCM 6th LOS	C

Notes

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

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

MOVEMENT SUMMARY

Site: 21 [Dorsey Dr / Sutton Way]

MITIG8 Cumulative + Project PM
Centennial Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: RoadName												
3	L2	463	3.0	0.757	15.4	LOS C	11.1	283.7	0.73	0.54	0.83	29.4
8	T1	454	3.0	0.757	15.4	LOS C	11.1	283.7	0.73	0.54	0.83	29.3
Approach		917	3.0	0.757	15.4	LOS C	11.1	283.7	0.73	0.54	0.83	29.3
North: RoadName												
4	T1	412	3.0	0.682	16.6	LOS C	7.9	202.3	0.83	1.08	1.49	29.8
14	R2	151	3.0	0.682	16.6	LOS C	7.9	202.3	0.83	1.08	1.49	29.1
Approach		563	3.0	0.682	16.6	LOS C	7.9	202.3	0.83	1.08	1.49	29.6
West: RoadName												
5	L2	145	3.0	0.714	17.2	LOS C	9.8	250.6	0.84	1.12	1.58	29.1
12	R2	483	3.0	0.714	17.2	LOS C	9.8	250.6	0.84	1.12	1.58	28.3
Approach		627	3.0	0.714	17.2	LOS C	9.8	250.6	0.84	1.12	1.58	28.5
All Vehicles		2108	3.0	0.757	16.2	LOS C	11.1	283.7	0.79	0.86	1.23	29.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	145	479	463	454	412	151
v/c Ratio	0.44	0.53	0.77	0.33	0.76	0.27
Control Delay	29.2	8.2	28.6	5.2	35.4	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	8.2	28.6	5.2	35.4	6.0
Queue Length 50th (ft)	52	71	155	59	153	0
Queue Length 95th (ft)	105	129	#293	124	#342	42
Internal Link Dist (ft)	1535			1385	682	
Turn Bay Length (ft)		300	300			
Base Capacity (vph)	562	1057	790	1438	549	573
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.45	0.59	0.32	0.75	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	133	441	426	418	379	139
Future Volume (veh/h)	133	441	426	418	379	139
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	145	479	463	454	412	151
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	433	850	522	1146	463	392
Arrive On Green	0.24	0.24	0.29	0.61	0.25	0.25
Sat Flow, veh/h	1781	1585	1781	1870	1870	1585
Grp Volume(v), veh/h	145	479	463	454	412	151
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1870	1585
Q Serve(g_s), s	4.4	13.1	16.2	8.1	13.9	5.2
Cycle Q Clear(g_c), s	4.4	13.1	16.2	8.1	13.9	5.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	433	850	522	1146	463	392
V/C Ratio(X)	0.34	0.56	0.89	0.40	0.89	0.38
Avail Cap(c_a), veh/h	491	902	691	1146	479	406
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	1.00
Uniform Delay (d), s/veh	20.4	10.1	22.0	6.5	23.7	20.4
Incr Delay (d2), s/veh	0.5	0.7	10.7	0.2	18.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.2	7.8	2.5	8.0	1.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.8	10.8	32.7	6.7	41.7	21.0
LnGrp LOS	C	B	C	A	D	C
Approach Vol, veh/h	624			917	563	
Approach Delay, s/veh	13.1			19.8	36.1	
Approach LOS	B			B	D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		44.7		20.6	23.8	20.9
Change Period (Y+Rc), s		* 4.7		* 4.7	* 4.7	* 4.7
Max Green Setting (Gmax), s		* 21		* 18	* 25	* 17
Max Q Clear Time (g_c+I1), s		10.1		15.1	18.2	15.9
Green Ext Time (p_c), s		2.1		0.7	0.9	0.3

Intersection Summary	
HCM 6th Ctrl Delay	22.2
HCM 6th LOS	C

Notes

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

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

MOVEMENT SUMMARY

Site: 21 [Dorsey Dr / Sutton Way]

MITIG8 Cumulative + Project 1530
Centennial Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: RoadName												
3	L2	463	3.0	0.757	15.4	LOS C	11.1	283.7	0.73	0.54	0.83	29.4
8	T1	454	3.0	0.757	15.4	LOS C	11.1	283.7	0.73	0.54	0.83	29.3
Approach		917	3.0	0.757	15.4	LOS C	11.1	283.7	0.73	0.54	0.83	29.3
North: RoadName												
4	T1	412	3.0	0.682	16.6	LOS C	7.9	202.3	0.83	1.08	1.49	29.8
14	R2	151	3.0	0.682	16.6	LOS C	7.9	202.3	0.83	1.08	1.49	29.1
Approach		563	3.0	0.682	16.6	LOS C	7.9	202.3	0.83	1.08	1.49	29.6
West: RoadName												
5	L2	145	3.0	0.711	17.0	LOS C	9.6	246.5	0.84	1.11	1.56	29.1
12	R2	479	3.0	0.711	17.0	LOS C	9.6	246.5	0.84	1.11	1.56	28.4
Approach		624	3.0	0.711	17.0	LOS C	9.6	246.5	0.84	1.11	1.56	28.5
All Vehicles		2104	3.0	0.757	16.2	LOS C	11.1	283.7	0.79	0.85	1.23	29.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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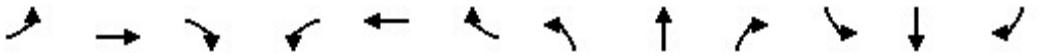
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	113	274	29	615	56	339
v/c Ratio	0.43	0.53	0.14	0.72	0.22	0.35
Control Delay	22.6	13.1	28.2	18.1	27.4	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	13.1	28.2	18.1	27.4	10.1
Queue Length 50th (ft)	25	28	8	152	16	39
Queue Length 95th (ft)	76	98	35	296	55	139
Internal Link Dist (ft)	489	1867		1607		1129
Turn Bay Length (ft)			230		205	
Base Capacity (vph)	531	890	214	1483	256	1501
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.31	0.14	0.41	0.22	0.23

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	22	25	25	48	181	27	560	12	52	286	29
Future Volume (veh/h)	58	22	25	25	48	181	27	560	12	52	286	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1945	1870	1870	1945	1870	1870	1945	1870	1870	1945	1870
Adj Flow Rate, veh/h	62	24	27	27	52	195	29	602	13	56	308	31
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	257	102	77	101	84	255	59	736	16	117	731	74
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.03	0.39	0.39	0.07	0.42	0.42
Sat Flow, veh/h	675	484	364	92	396	1205	1781	1897	41	1781	1739	175
Grp Volume(v), veh/h	113	0	0	274	0	0	29	0	615	56	0	339
Grp Sat Flow(s),veh/h/ln	1523	0	0	1693	0	0	1781	0	1938	1781	0	1914
Q Serve(g_s), s	0.0	0.0	0.0	2.8	0.0	0.0	0.8	0.0	13.9	1.5	0.0	6.1
Cycle Q Clear(g_c), s	2.7	0.0	0.0	7.4	0.0	0.0	0.8	0.0	13.9	1.5	0.0	6.1
Prop In Lane	0.55		0.24	0.10		0.71	1.00		0.02	1.00		0.09
Lane Grp Cap(c), veh/h	437	0	0	440	0	0	59	0	752	117	0	804
V/C Ratio(X)	0.26	0.00	0.00	0.62	0.00	0.00	0.49	0.00	0.82	0.48	0.00	0.42
Avail Cap(c_a), veh/h	656	0	0	703	0	0	183	0	1193	219	0	804
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.1	0.0	0.0	18.0	0.0	0.0	23.1	0.0	13.4	22.0	0.0	9.9
Incr Delay (d2), s/veh	0.3	0.0	0.0	1.4	0.0	0.0	6.1	0.0	2.5	3.0	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	1.0	0.0	0.0	2.6	0.0	0.0	0.4	0.0	4.6	0.6	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.5	0.0	0.0	19.5	0.0	0.0	29.3	0.0	15.9	25.0	0.0	10.3
LnGrp LOS	B	A	A	B	A	A	C	A	B	C	A	B
Approach Vol, veh/h		113			274			644			395	
Approach Delay, s/veh		16.5			19.5			16.5			12.4	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.3	25.4		15.0	6.7	27.0		15.0				
Change Period (Y+Rc), s	5.1	6.5		* 4.7	5.1	6.5		* 4.7				
Max Green Setting (Gmax), s	6.0	30.0		* 18	5.0	18.0		* 18				
Max Q Clear Time (g_c+I1), s	3.5	15.9		4.7	2.8	8.1		9.4				
Green Ext Time (p_c), s	0.0	3.1		0.4	0.0	1.2		1.0				

Intersection Summary			
HCM 6th Ctrl Delay		15.9	
HCM 6th LOS		B	

Notes

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

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	203	96	31	811	853
v/c Ratio	0.50	0.22	0.11	0.80	0.52
Control Delay	25.2	7.0	26.7	16.6	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	25.2	7.0	26.7	16.6	12.6
Queue Length 50th (ft)	54	0	8	163	65
Queue Length 95th (ft)	137	33	37	370	201
Internal Link Dist (ft)	1470			317	1215
Turn Bay Length (ft)	100		200		
Base Capacity (vph)	643	636	285	1532	2119
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.32	0.15	0.11	0.53	0.40

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	193	91	29	770	723	87
Future Volume (veh/h)	193	91	29	770	723	87
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	203	96	31	811	761	92
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	327	291	103	1032	1192	144
Arrive On Green	0.18	0.18	0.06	0.55	0.37	0.37
Sat Flow, veh/h	1781	1585	1781	1870	3286	386
Grp Volume(v), veh/h	203	96	31	811	424	429
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1777	1801
Q Serve(g_s), s	4.4	2.2	0.7	14.5	8.3	8.3
Cycle Q Clear(g_c), s	4.4	2.2	0.7	14.5	8.3	8.3
Prop In Lane	1.00	1.00	1.00			0.21
Lane Grp Cap(c), veh/h	327	291	103	1032	663	672
V/C Ratio(X)	0.62	0.33	0.30	0.79	0.64	0.64
Avail Cap(c_a), veh/h	758	675	337	1327	1260	1277
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	1.00
Uniform Delay (d), s/veh	15.9	15.0	19.1	7.5	10.9	10.9
Incr Delay (d2), s/veh	1.9	0.7	1.6	2.4	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.1	0.3	4.1	2.7	2.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.8	15.7	20.7	9.9	11.9	11.9
LnGrp LOS	B	B	C	A	B	B
Approach Vol, veh/h	299			842	853	
Approach Delay, s/veh	17.1			10.3	11.9	
Approach LOS	B			B	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		29.8		12.5	7.5	22.3
Change Period (Y+Rc), s		6.5		* 4.7	5.1	6.5
Max Green Setting (Gmax), s		30.0		* 18	8.0	30.0
Max Q Clear Time (g_c+I1), s		16.5		6.4	2.7	10.3
Green Ext Time (p_c), s		5.0		0.7	0.0	5.5

Intersection Summary	
HCM 6th Ctrl Delay	12.0
HCM 6th LOS	B

Notes

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

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	84	143	22	444	153	658
v/c Ratio	0.25	0.36	0.10	0.63	0.57	0.50
Control Delay	15.1	12.4	22.2	16.7	33.6	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	12.4	22.2	16.7	33.6	9.9
Queue Length 50th (ft)	12	14	5	89	36	80
Queue Length 95th (ft)	46	57	24	176	#135	#298
Internal Link Dist (ft)	489	1867		1607		1129
Turn Bay Length (ft)			230		205	
Base Capacity (vph)	808	862	223	1512	268	1539
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.17	0.10	0.29	0.57	0.43

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	24	27	23	40	79	22	406	34	151	574	77
Future Volume (veh/h)	33	24	27	23	40	79	22	406	34	151	574	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1945	1870	1870	1945	1870	1870	1945	1870	1870	1945	1870
Adj Flow Rate, veh/h	33	24	27	23	40	80	22	410	34	153	580	78
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	98	78	132	81	134	48	561	46	222	695	93
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.03	0.32	0.32	0.12	0.41	0.41
Sat Flow, veh/h	484	693	558	179	572	954	1781	1772	147	1781	1679	226
Grp Volume(v), veh/h	84	0	0	143	0	0	22	0	444	153	0	658
Grp Sat Flow(s),veh/h/ln	1735	0	0	1705	0	0	1781	0	1919	1781	0	1905
Q Serve(g_s), s	0.0	0.0	0.0	1.2	0.0	0.0	0.5	0.0	8.0	3.2	0.0	12.1
Cycle Q Clear(g_c), s	1.6	0.0	0.0	3.0	0.0	0.0	0.5	0.0	8.0	3.2	0.0	12.1
Prop In Lane	0.39		0.32	0.16		0.56	1.00		0.08	1.00		0.12
Lane Grp Cap(c), veh/h	373	0	0	347	0	0	48	0	607	222	0	788
V/C Ratio(X)	0.23	0.00	0.00	0.41	0.00	0.00	0.45	0.00	0.73	0.69	0.00	0.84
Avail Cap(c_a), veh/h	875	0	0	885	0	0	229	0	1477	274	0	880
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.1	0.0	0.0	15.7	0.0	0.0	18.7	0.0	11.8	16.3	0.0	10.2
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.8	0.0	0.0	6.5	0.0	1.7	5.3	0.0	6.4
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	0.6	0.0	0.0	1.0	0.0	0.0	0.2	0.0	2.4	1.3	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.4	0.0	0.0	16.4	0.0	0.0	25.2	0.0	13.6	21.7	0.0	16.7
LnGrp LOS	B	A	A	B	A	A	C	A	B	C	A	B
Approach Vol, veh/h		84			143			466			811	
Approach Delay, s/veh		15.4			16.4			14.1			17.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	18.8		10.2	6.2	22.6		10.2				
Change Period (Y+Rc), s	5.1	6.5		* 4.7	5.1	6.5		* 4.7				
Max Green Setting (Gmax), s	6.0	30.0		* 18	5.0	18.0		* 18				
Max Q Clear Time (g_c+I1), s	5.2	10.0		3.6	2.5	14.1		5.0				
Green Ext Time (p_c), s	0.0	2.3		0.3	0.0	1.4		0.6				

Intersection Summary		
HCM 6th Ctrl Delay		16.3
HCM 6th LOS		B

Notes

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

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	145	483	466	454	412	151
v/c Ratio	0.44	0.54	0.77	0.33	0.76	0.27
Control Delay	29.3	8.3	28.8	5.2	35.5	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.3	8.3	28.8	5.2	35.5	6.0
Queue Length 50th (ft)	53	72	156	59	154	0
Queue Length 95th (ft)	105	131	#295	124	#342	42
Internal Link Dist (ft)	379			610	692	
Turn Bay Length (ft)		300	300			
Base Capacity (vph)	561	1056	790	1437	548	572
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.46	0.59	0.32	0.75	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	133	444	429	418	379	139
Future Volume (veh/h)	133	444	429	418	379	139
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	145	483	466	454	412	151
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	434	853	525	1147	462	392
Arrive On Green	0.24	0.24	0.29	0.61	0.25	0.25
Sat Flow, veh/h	1781	1585	1781	1870	1870	1585
Grp Volume(v), veh/h	145	483	466	454	412	151
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1870	1585
Q Serve(g_s), s	4.4	13.3	16.4	8.1	14.0	5.2
Cycle Q Clear(g_c), s	4.4	13.3	16.4	8.1	14.0	5.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	434	853	525	1147	462	392
V/C Ratio(X)	0.33	0.57	0.89	0.40	0.89	0.39
Avail Cap(c_a), veh/h	488	901	686	1147	476	403
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	1.00
Uniform Delay (d), s/veh	20.4	10.1	22.1	6.5	23.9	20.6
Incr Delay (d2), s/veh	0.4	0.7	11.1	0.2	18.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	13.0	7.9	2.6	8.1	1.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.9	10.8	33.2	6.7	42.3	21.2
LnGrp LOS	C	B	C	A	D	C
Approach Vol, veh/h	628			920	563	
Approach Delay, s/veh	13.1			20.1	36.6	
Approach LOS	B			C	D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		45.0		20.7	24.0	20.9
Change Period (Y+Rc), s		* 4.7		* 4.7	* 4.7	* 4.7
Max Green Setting (Gmax), s		* 21		* 18	* 25	* 17
Max Q Clear Time (g_c+I1), s		10.1		15.3	18.4	16.0
Green Ext Time (p_c), s		2.1		0.7	0.9	0.3

Intersection Summary	
HCM 6th Ctrl Delay	22.5
HCM 6th LOS	C

Notes

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

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

MOVEMENT SUMMARY

Site: 21 [Dorsey Dr / Sutton Way]

MITIG8 Cumulative + Project PM
To SR 49
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: RoadName												
3	L2	463	3.0	0.757	15.4	LOS C	11.1	283.7	0.73	0.54	0.83	29.4
8	T1	454	3.0	0.757	15.4	LOS C	11.1	283.7	0.73	0.54	0.83	29.3
Approach		917	3.0	0.757	15.4	LOS C	11.1	283.7	0.73	0.54	0.83	29.3
North: RoadName												
4	T1	412	3.0	0.682	16.6	LOS C	7.9	202.3	0.83	1.08	1.49	29.8
14	R2	151	3.0	0.682	16.6	LOS C	7.9	202.3	0.83	1.08	1.49	29.1
Approach		563	3.0	0.682	16.6	LOS C	7.9	202.3	0.83	1.08	1.49	29.6
West: RoadName												
5	L2	145	3.0	0.714	17.2	LOS C	9.8	250.6	0.84	1.12	1.58	29.1
12	R2	483	3.0	0.714	17.2	LOS C	9.8	250.6	0.84	1.12	1.58	28.3
Approach		627	3.0	0.714	17.2	LOS C	9.8	250.6	0.84	1.12	1.58	28.5
All Vehicles		2108	3.0	0.757	16.2	LOS C	11.1	283.7	0.79	0.86	1.23	29.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	145	479	463	454	412	151
v/c Ratio	0.44	0.53	0.77	0.33	0.76	0.27
Control Delay	29.2	8.2	28.6	5.2	35.4	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	8.2	28.6	5.2	35.4	6.0
Queue Length 50th (ft)	52	71	155	59	153	0
Queue Length 95th (ft)	105	129	#293	124	#342	42
Internal Link Dist (ft)	1535			1385	682	
Turn Bay Length (ft)		300	300			
Base Capacity (vph)	562	1057	790	1438	549	573
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.45	0.59	0.32	0.75	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	133	441	426	418	379	139
Future Volume (veh/h)	133	441	426	418	379	139
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	145	479	463	454	412	151
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	433	850	522	1146	463	392
Arrive On Green	0.24	0.24	0.29	0.61	0.25	0.25
Sat Flow, veh/h	1781	1585	1781	1870	1870	1585
Grp Volume(v), veh/h	145	479	463	454	412	151
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1870	1585
Q Serve(g_s), s	4.4	13.1	16.2	8.1	13.9	5.2
Cycle Q Clear(g_c), s	4.4	13.1	16.2	8.1	13.9	5.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	433	850	522	1146	463	392
V/C Ratio(X)	0.34	0.56	0.89	0.40	0.89	0.38
Avail Cap(c_a), veh/h	491	902	691	1146	479	406
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	1.00
Uniform Delay (d), s/veh	20.4	10.1	22.0	6.5	23.7	20.4
Incr Delay (d2), s/veh	0.5	0.7	10.7	0.2	18.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.2	7.8	2.5	8.0	1.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.8	10.8	32.7	6.7	41.7	21.0
LnGrp LOS	C	B	C	A	D	C
Approach Vol, veh/h	624			917	563	
Approach Delay, s/veh	13.1			19.8	36.1	
Approach LOS	B			B	D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		44.7		20.6	23.8	20.9
Change Period (Y+Rc), s		* 4.7		* 4.7	* 4.7	* 4.7
Max Green Setting (Gmax), s		* 21		* 18	* 25	* 17
Max Q Clear Time (g_c+I1), s		10.1		15.1	18.2	15.9
Green Ext Time (p_c), s		2.1		0.7	0.9	0.3

Intersection Summary		
HCM 6th Ctrl Delay		22.2
HCM 6th LOS		C

Notes

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

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

MOVEMENT SUMMARY

Site: 21 [Dorsey Dr / Sutton Way]

MITIG8 Cumulative + Project 1530
To SR 49
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: RoadName												
3	L2	463	3.0	0.757	15.4	LOS C	11.1	283.7	0.73	0.54	0.83	29.4
8	T1	454	3.0	0.757	15.4	LOS C	11.1	283.7	0.73	0.54	0.83	29.3
Approach		917	3.0	0.757	15.4	LOS C	11.1	283.7	0.73	0.54	0.83	29.3
North: RoadName												
4	T1	412	3.0	0.682	16.6	LOS C	7.9	202.3	0.83	1.08	1.49	29.8
14	R2	151	3.0	0.682	16.6	LOS C	7.9	202.3	0.83	1.08	1.49	29.1
Approach		563	3.0	0.682	16.6	LOS C	7.9	202.3	0.83	1.08	1.49	29.6
West: RoadName												
5	L2	145	3.0	0.711	17.0	LOS C	9.6	246.5	0.84	1.11	1.56	29.1
12	R2	479	3.0	0.711	17.0	LOS C	9.6	246.5	0.84	1.11	1.56	28.4
Approach		624	3.0	0.711	17.0	LOS C	9.6	246.5	0.84	1.11	1.56	28.5
All Vehicles		2104	3.0	0.757	16.2	LOS C	11.1	283.7	0.79	0.85	1.23	29.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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TECHNICAL LOS APPENDIX IV

FOR

IDAHO-MARYLAND MINE PROJECT
TRAFFIC IMPACT ANALYSIS

Nevada County, CA

QUEUES – CUMULATIVE SCENARIOS

Prepared For:

Rise Grass Valley Inc.

Prepared By:

KD Anderson & Associates, Inc.
3853 Taylor Road, Suite G
Loomis, CA 95650
(916) 660-1555

April 8, 2021

QUEUES – CUMULATIVE SCENARIOS

CUMULATIVE

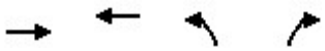
CUMULATIVE PLUS PROJECT – CENTENNIAL

CUMULATIVE PLUS PROJECT – SR 49

KDA

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

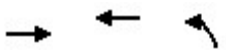
Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	160	132	34	100	24
Average Queue (ft)	71	58	11	52	2
95th Queue (ft)	122	100	35	85	13
Link Distance (ft)	1196	1196		264	401
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)				1	
Queuing Penalty (veh)				0	



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	393	465	274	552
v/c Ratio	0.76	0.49	0.66	0.55
Control Delay	35.6	24.7	34.3	7.7
Queue Delay	0.0	0.7	0.0	0.0
Total Delay	35.6	25.4	34.3	7.7
Queue Length 50th (ft)	154	88	110	73
Queue Length 95th (ft)	#330	161	212	166
Internal Link Dist (ft)	795	110	1248	
Turn Bay Length (ft)			400	
Base Capacity (vph)	704	1340	675	1007
Starvation Cap Reductn	0	524	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.56	0.57	0.41	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBL
Lane Group Flow (vph)	865	412	120
v/c Ratio	0.63	0.49	0.41
Control Delay	16.3	22.9	27.5
Queue Delay	0.1	0.0	0.0
Total Delay	16.4	22.9	27.5
Queue Length 50th (ft)	117	66	32
Queue Length 95th (ft)	204	128	95
Internal Link Dist (ft)	110	349	980
Turn Bay Length (ft)			
Base Capacity (vph)	2538	1804	377
Starvation Cap Reductn	653	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.46	0.23	0.32

Intersection Summary

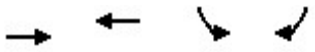
Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	10	155	207	184	246	531	48	467
v/c Ratio	0.05	0.31	0.56	0.36	0.61	0.62	0.24	0.53
Control Delay	30.1	4.5	29.7	4.4	31.0	19.5	31.6	22.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.1	4.5	29.7	4.4	31.0	19.5	31.6	22.2
Queue Length 50th (ft)	3	0	63	0	72	151	15	72
Queue Length 95th (ft)	19	21	163	30	#220	#379	55	145
Internal Link Dist (ft)	1255		1856			1215		1576
Turn Bay Length (ft)					550		120	
Base Capacity (vph)	333	564	489	595	476	1082	220	1550
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.27	0.42	0.31	0.52	0.49	0.22	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Group Flow (vph)	207	354	24	231	93
v/c Ratio	0.16	0.29	0.04	0.16	0.13
Control Delay	6.5	2.4	12.9	3.6	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	6.5	2.4	12.9	3.6	9.9
Queue Length 50th (ft)	0	0	0	0	1
Queue Length 95th (ft)	82	42	21	48	49
Internal Link Dist (ft)	1867			481	560
Turn Bay Length (ft)		175	100		
Base Capacity (vph)	1724	1491	789	1820	1343
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.12	0.24	0.03	0.13	0.07

Intersection Summary



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	222	286	46	132
v/c Ratio	0.41	0.50	0.13	0.32
Control Delay	17.5	14.4	19.8	7.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	17.5	14.4	19.8	7.5
Queue Length 50th (ft)	45	43	10	0
Queue Length 95th (ft)	117	120	39	39
Internal Link Dist (ft)	481	1255	1069	
Turn Bay Length (ft)				70
Base Capacity (vph)	1011	1001	773	766
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.22	0.29	0.06	0.17

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	64	212	645	161	322	251
v/c Ratio	0.29	0.33	0.81	0.21	0.71	0.17
Control Delay	32.7	7.8	29.1	3.8	33.9	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.7	7.8	29.1	3.8	33.9	3.0
Queue Length 50th (ft)	27	26	258	0	132	26
Queue Length 95th (ft)	63	64	#490	35	#254	54
Internal Link Dist (ft)	1010		930			663
Turn Bay Length (ft)	165			405	405	
Base Capacity (vph)	407	754	919	860	575	1521
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.28	0.70	0.19	0.56	0.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	111	356	126	84
Average Queue (ft)	75	159	52	32
95th Queue (ft)	116	310	102	64
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	7			
Queuing Penalty (veh)	20			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	128	114	181	122	103
Average Queue (ft)	63	40	82	77	52
95th Queue (ft)	110	84	141	121	93
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	0			5	1
Queuing Penalty (veh)	1			8	1
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	3		
Queuing Penalty (veh)		0	8		

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	T
Maximum Queue (ft)	69	122	134	129	5	140	106	100	134	122
Average Queue (ft)	26	50	58	52	0	62	42	34	70	55
95th Queue (ft)	57	96	102	107	5	112	81	75	115	102
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)		0	0	0						
Queuing Penalty (veh)		0	0	0						
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)						1	0			
Queuing Penalty (veh)						1	0			

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	161	174	102	161	173	72	106	205	224	103	74
Average Queue (ft)	61	87	58	59	76	18	50	98	133	29	40
95th Queue (ft)	133	159	99	132	151	53	87	183	199	76	67
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	0	1	1	2	3						
Queuing Penalty (veh)	0	2	0	8	10						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			1	2		0	0	0	0		
Queuing Penalty (veh)			3	3		0	0	0	0		

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	R	<	R	T
Maximum Queue (ft)	106	138	126	131	4	213	216	322
Average Queue (ft)	35	40	22	29	0	149	142	69
95th Queue (ft)	86	100	79	88	0	223	231	242
Link Distance (ft)	456	456	327	327	327	138	138	890
Upstream Blk Time (%)						19	15	
Queuing Penalty (veh)						0	0	
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	98	108	141	150	162	138	169	249	75	131	90	76
Average Queue (ft)	36	56	71	83	75	59	81	124	21	68	37	35
95th Queue (ft)	77	92	122	131	129	105	139	204	53	115	71	68
Link Distance (ft)			327	327			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)						0	1					
Queuing Penalty (veh)						1	2					

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	87
Average Queue (ft)	32
95th Queue (ft)	67
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	119	195	56	78	94	101	268	188
Average Queue (ft)	53	105	15	38	46	28	124	66
95th Queue (ft)	99	173	41	68	80	75	214	135
Link Distance (ft)	211	211		1558	1558		800	
Upstream Blk Time (%)		0						
Queuing Penalty (veh)		0						
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)						0	0	0
Queuing Penalty (veh)						0	3	0

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

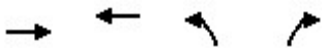
Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	191	97	109	127	134	113	91
Average Queue (ft)	89	29	49	57	55	53	45
95th Queue (ft)	159	64	91	109	111	95	77
Link Distance (ft)	548		211	211	211	1120	1120
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		155					
Storage Blk Time (%)	1	0					
Queuing Penalty (veh)	1	0					

Zone Summary

Zone wide Queuing Penalty: 71

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

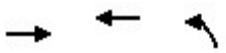
Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	236	197	47	98	37
Average Queue (ft)	108	86	15	48	7
95th Queue (ft)	190	160	42	78	26
Link Distance (ft)	1196	1196		264	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	333	977	167	272
v/c Ratio	0.72	0.75	0.54	0.25
Control Delay	33.0	25.9	33.9	1.7
Queue Delay	0.0	50.9	0.0	0.0
Total Delay	33.0	76.7	33.9	1.7
Queue Length 50th (ft)	125	184	65	0
Queue Length 95th (ft)	225	#369	134	29
Internal Link Dist (ft)	795	110	1248	
Turn Bay Length (ft)			400	
Base Capacity (vph)	684	1306	656	1056
Starvation Cap Reductn	0	580	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.49	1.35	0.25	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBL
Lane Group Flow (vph)	649	913	164
v/c Ratio	0.65	0.72	0.63
Control Delay	23.3	22.6	38.8
Queue Delay	0.1	0.0	0.0
Total Delay	23.4	22.6	38.8
Queue Length 50th (ft)	118	163	59
Queue Length 95th (ft)	162	245	#143
Internal Link Dist (ft)	110	349	980
Turn Bay Length (ft)			
Base Capacity (vph)	2186	1392	267
Starvation Cap Reductn	485	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.38	0.66	0.61

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	76	230	64	109	231	678	152	540
v/c Ratio	0.33	0.37	0.29	0.28	0.67	0.84	0.80	0.44
Control Delay	36.6	3.6	35.5	1.7	40.9	32.1	69.0	21.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.6	3.6	35.5	1.7	40.9	32.1	69.0	21.7
Queue Length 50th (ft)	34	0	29	0	103	284	74	107
Queue Length 95th (ft)	76	28	66	0	#209	#537	#196	166
Internal Link Dist (ft)	1255		1856			1215		1576
Turn Bay Length (ft)					550		120	
Base Capacity (vph)	287	667	423	545	411	927	190	1354
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.34	0.15	0.20	0.56	0.73	0.80	0.40

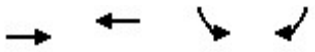
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Group Flow (vph)	403	183	16	461	461
v/c Ratio	0.59	0.26	0.06	0.61	0.70
Control Delay	15.2	3.2	21.2	13.1	24.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.2	3.2	21.2	13.1	24.2
Queue Length 50th (ft)	67	0	3	80	76
Queue Length 95th (ft)	154	22	19	109	#311
Internal Link Dist (ft)	1867			481	560
Turn Bay Length (ft)		175	100		
Base Capacity (vph)	1361	1206	311	1734	654
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.30	0.15	0.05	0.27	0.70

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	421	304	186	271
v/c Ratio	0.77	0.66	0.54	0.51
Control Delay	31.2	25.3	28.9	7.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	31.2	25.3	28.9	7.4
Queue Length 50th (ft)	129	85	61	0
Queue Length 95th (ft)	#278	156	120	46
Internal Link Dist (ft)	481	1255	1385	
Turn Bay Length (ft)				70
Base Capacity (vph)	664	678	491	635
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.63	0.45	0.38	0.43

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	171	395	421	52	143	620
v/c Ratio	0.49	0.50	0.66	0.09	0.42	0.49
Control Delay	28.8	6.7	22.4	5.3	27.2	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.8	6.7	22.4	5.3	27.2	7.5
Queue Length 50th (ft)	51	25	119	0	43	104
Queue Length 95th (ft)	136	99	246	20	110	192
Internal Link Dist (ft)	986		960			673
Turn Bay Length (ft)	165			405	405	
Base Capacity (vph)	499	1066	1097	952	705	1649
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.37	0.38	0.05	0.20	0.38

Intersection Summary

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	115	596	203	216
Average Queue (ft)	89	276	77	80
95th Queue (ft)	118	651	183	181
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	21			
Queuing Penalty (veh)	60			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	145	121	198	134	123
Average Queue (ft)	91	38	90	100	83
95th Queue (ft)	148	89	162	140	129
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	1			22	11
Queuing Penalty (veh)	5			43	21
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	4		
Queuing Penalty (veh)		0	10		

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	61	126	135	169	20	269	140	227	263	186
Average Queue (ft)	20	60	62	91	2	106	76	89	129	67
95th Queue (ft)	49	108	110	163	12	217	142	190	213	139
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)		0	0	1						
Queuing Penalty (veh)		0	0	2						
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)						6	2		0	0
Queuing Penalty (veh)						13	4		0	0

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	175	197	102	178	181	114	190	212	222	99	105
Average Queue (ft)	105	145	64	69	107	34	91	111	139	36	45
95th Queue (ft)	187	211	108	153	182	87	157	194	203	83	82
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	1	9	2	4	9						
Queuing Penalty (veh)	5	32	0	17	33						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			2	4		0	7	0	0		
Queuing Penalty (veh)			5	5		1	2	0	0		

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	R	<	R	T
Maximum Queue (ft)	147	157	240	299	244	216	244	442
Average Queue (ft)	56	62	69	90	15	136	175	109
95th Queue (ft)	120	128	178	223	124	217	261	358
Link Distance (ft)	456	456	334	334	334	145	145	915
Upstream Blk Time (%)				0	0	10	28	
Queuing Penalty (veh)				0	1	0	0	
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	124	147	203	223	263	205	354	406	339	597	340	135
Average Queue (ft)	63	84	114	123	128	112	149	230	202	301	176	63
95th Queue (ft)	110	131	177	190	219	188	276	352	356	502	357	117
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)			0	0	0							
Queuing Penalty (veh)			0	0	0							
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)				0	1	8	8		0	13	0	
Queuing Penalty (veh)				0	2	24	14		2	75	2	

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	131	15
Average Queue (ft)	63	1
95th Queue (ft)	113	15
Link Distance (ft)	229	229
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	207	213	162	197	166	139	139	118
Average Queue (ft)	91	89	97	66	59	59	65	54
95th Queue (ft)	169	171	165	144	122	112	114	95
Link Distance (ft)	211	211		1338	1338		800	
Upstream Blk Time (%)	0	1						
Queuing Penalty (veh)	1	2						
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)			3	0				
Queuing Penalty (veh)			7	0				

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

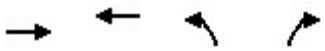
Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	537	180	233	133	137	190	71
Average Queue (ft)	228	128	171	44	41	94	34
95th Queue (ft)	472	224	258	102	106	163	59
Link Distance (ft)	1398		211	211	211	1120	1120
Upstream Blk Time (%)			5	0	0		
Queuing Penalty (veh)			16	0	0		
Storage Bay Dist (ft)		155					
Storage Blk Time (%)	13	1					
Queuing Penalty (veh)	49	7					

Zone Summary

Zone wide Queuing Penalty: 462

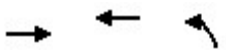
Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	72	68	31	59	3
Average Queue (ft)	37	28	7	33	0
95th Queue (ft)	59	56	28	46	2
Link Distance (ft)	1196	1196		264	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)					
Queuing Penalty (veh)					



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	241	234	129	425
v/c Ratio	0.39	0.21	0.25	0.40
Control Delay	17.4	15.8	19.3	2.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	17.4	15.8	19.3	2.5
Queue Length 50th (ft)	52	25	29	4
Queue Length 95th (ft)	127	61	81	39
Internal Link Dist (ft)	795	110	1248	
Turn Bay Length (ft)			400	
Base Capacity (vph)	1150	2180	1101	1176
Starvation Cap Reductn	0	237	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.21	0.12	0.12	0.36

Intersection Summary



Lane Group	EBT	WBT	NBL
Lane Group Flow (vph)	667	222	57
v/c Ratio	0.52	0.27	0.18
Control Delay	12.4	17.0	18.2
Queue Delay	0.0	0.0	0.0
Total Delay	12.4	17.0	18.2
Queue Length 50th (ft)	67	26	11
Queue Length 95th (ft)	123	60	41
Internal Link Dist (ft)	110	349	980
Turn Bay Length (ft)			
Base Capacity (vph)	3099	2483	490
Starvation Cap Reductn	494	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.26	0.09	0.12

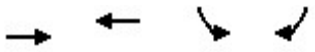
Intersection Summary

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	56	56	134	97	115	255	14	298
v/c Ratio	0.18	0.11	0.32	0.18	0.29	0.31	0.05	0.32
Control Delay	12.2	1.2	24.6	0.7	24.8	14.4	27.7	21.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.2	1.2	24.6	0.7	24.8	14.4	27.7	21.4
Queue Length 50th (ft)	2	0	40	0	35	52	4	46
Queue Length 95th (ft)	34	4	100	0	90	157	22	96
Internal Link Dist (ft)	1255		1856			1215		1576
Turn Bay Length (ft)					550		120	
Base Capacity (vph)	464	785	760	799	744	1254	345	1974
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.07	0.18	0.12	0.15	0.20	0.04	0.15

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Group Flow (vph)	147	273	8	134	50
v/c Ratio	0.11	0.22	0.01	0.09	0.07
Control Delay	4.8	2.1	9.7	1.9	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	4.8	2.1	9.7	1.9	7.6
Queue Length 50th (ft)	0	0	0	0	0
Queue Length 95th (ft)	56	36	10	26	28
Internal Link Dist (ft)	1867			481	560
Turn Bay Length (ft)		175	100		
Base Capacity (vph)	1766	1515	879	1863	1523
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.08	0.18	0.01	0.07	0.03

Intersection Summary



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	132	155	26	59
v/c Ratio	0.20	0.23	0.05	0.12
Control Delay	12.3	9.4	14.7	6.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.3	9.4	14.7	6.5
Queue Length 50th (ft)	22	16	4	0
Queue Length 95th (ft)	59	54	20	22
Internal Link Dist (ft)	481	1255	1954	
Turn Bay Length (ft)				70
Base Capacity (vph)	1299	1264	1071	981
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.10	0.12	0.02	0.06

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	33	86	308	138	227	122
v/c Ratio	0.10	0.13	0.47	0.21	0.42	0.09
Control Delay	21.9	2.9	15.7	4.4	17.4	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.9	2.9	15.7	4.4	17.4	2.3
Queue Length 50th (ft)	5	0	38	0	29	0
Queue Length 95th (ft)	35	19	164	32	134	24
Internal Link Dist (ft)	1021		899			683
Turn Bay Length (ft)	165			405	405	
Base Capacity (vph)	775	1076	1433	1246	1024	1752
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.08	0.21	0.11	0.22	0.07

Intersection Summary

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	96	150	71	58
Average Queue (ft)	38	61	20	18
95th Queue (ft)	84	115	52	44
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	1			
Queuing Penalty (veh)	2			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	100	54	83	82	78
Average Queue (ft)	45	16	37	38	33
95th Queue (ft)	86	44	73	68	67
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	0			0	0
Queuing Penalty (veh)	0			0	0
Storage Bay Dist (ft)		100			
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	36	51	53	65	26	68	54	43	84	53
Average Queue (ft)	10	18	18	22	2	25	17	8	35	14
95th Queue (ft)	33	40	43	47	13	56	42	30	68	40
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)						0				
Queuing Penalty (veh)						0				

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	51	83	72	62	101	31	30	126	148	54	51
Average Queue (ft)	9	22	28	12	25	6	9	39	82	13	20
95th Queue (ft)	32	61	61	44	72	24	30	94	134	40	45
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)			0	0	0						
Queuing Penalty (veh)			0	0	0						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			0	0							
Queuing Penalty (veh)			0	0							

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	<	R	T
Maximum Queue (ft)	19	24	15	26	165	146	20
Average Queue (ft)	2	3	1	2	82	62	1
95th Queue (ft)	10	13	8	13	141	106	15
Link Distance (ft)	456	456	327	327	138	138	890
Upstream Blk Time (%)					3	0	
Queuing Penalty (veh)					0	0	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	47	72	65	89	65	57	87	113	32	74	50	37
Average Queue (ft)	13	31	18	42	23	21	32	45	4	29	16	13
95th Queue (ft)	39	61	53	77	52	48	69	88	20	58	37	38
Link Distance (ft)			327	327			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)							0					
Queuing Penalty (veh)							0					

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	31
Average Queue (ft)	5
95th Queue (ft)	24
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	78	121	44	74	46	49	120	68
Average Queue (ft)	31	50	12	31	13	17	54	35
95th Queue (ft)	63	98	36	57	36	44	98	59
Link Distance (ft)	211	211		1417	1417		800	
Upstream Blk Time (%)		0						
Queuing Penalty (veh)		0						
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

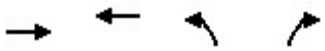
Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	100	51	88	80	72	49	65
Average Queue (ft)	37	17	36	27	16	15	30
95th Queue (ft)	80	41	73	64	53	43	53
Link Distance (ft)	1539		211	211	211	1120	1120
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		155					
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 3

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

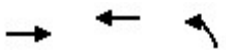
Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	205	137	42	83	43
Average Queue (ft)	91	66	15	40	7
95th Queue (ft)	153	114	41	66	28
Link Distance (ft)	1196	1196		264	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	417	783	191	276
v/c Ratio	0.77	0.70	0.58	0.28
Control Delay	34.8	26.5	35.6	3.4
Queue Delay	0.0	51.6	0.0	0.0
Total Delay	34.8	78.1	35.6	3.4
Queue Length 50th (ft)	173	162	83	14
Queue Length 95th (ft)	#325	260	151	48
Internal Link Dist (ft)	795	110	1248	
Turn Bay Length (ft)			400	
Base Capacity (vph)	676	1290	648	985
Starvation Cap Reductn	0	583	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.62	1.11	0.29	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBL
Lane Group Flow (vph)	645	727	197
v/c Ratio	0.62	0.66	0.68
Control Delay	20.9	21.6	38.9
Queue Delay	0.1	0.0	0.0
Total Delay	20.9	21.6	38.9
Queue Length 50th (ft)	99	120	62
Queue Length 95th (ft)	166	195	#189
Internal Link Dist (ft)	110	349	980
Turn Bay Length (ft)			
Base Capacity (vph)	2355	1504	291
Starvation Cap Reductn	504	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.35	0.48	0.68

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	72	231	67	73	184	681	146	522
v/c Ratio	0.32	0.39	0.30	0.18	0.59	0.84	0.77	0.40
Control Delay	36.5	3.8	35.6	1.0	38.3	32.1	66.0	20.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.5	3.8	35.6	1.0	38.3	32.1	66.0	20.7
Queue Length 50th (ft)	32	0	30	0	82	285	71	99
Queue Length 95th (ft)	74	28	68	0	151	#542	#188	161
Internal Link Dist (ft)	1255		1856			1215		1576
Turn Bay Length (ft)					550		120	
Base Capacity (vph)	285	663	419	543	408	921	189	1381
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.35	0.16	0.13	0.45	0.74	0.77	0.38

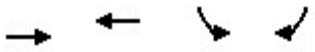
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Group Flow (vph)	350	159	14	401	401
v/c Ratio	0.55	0.25	0.05	0.57	0.59
Control Delay	15.0	3.5	19.8	12.6	19.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	3.5	19.8	12.6	19.2
Queue Length 50th (ft)	56	0	3	66	57
Queue Length 95th (ft)	156	29	19	112	#285
Internal Link Dist (ft)	1867			481	560
Turn Bay Length (ft)		175	100		
Base Capacity (vph)	1416	1241	324	1752	680
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.25	0.13	0.04	0.23	0.59

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	389	282	172	250
v/c Ratio	0.73	0.62	0.50	0.49
Control Delay	28.6	23.4	27.4	7.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	28.6	23.4	27.4	7.4
Queue Length 50th (ft)	111	71	52	0
Queue Length 95th (ft)	#274	155	119	53
Internal Link Dist (ft)	481	1255	1385	
Turn Bay Length (ft)				70
Base Capacity (vph)	693	706	513	636
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.56	0.40	0.34	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	199	379	408	85	198	489
v/c Ratio	0.60	0.43	0.71	0.16	0.55	0.44
Control Delay	33.7	5.2	26.3	5.0	29.5	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.7	5.2	26.3	5.0	29.5	7.2
Queue Length 50th (ft)	64	20	127	0	64	81
Queue Length 95th (ft)	#178	83	252	27	147	136
Internal Link Dist (ft)	1009		828			673
Turn Bay Length (ft)	165			405	405	
Base Capacity (vph)	424	1066	957	853	599	1598
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.36	0.43	0.10	0.33	0.31

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	109	126	108	109
Average Queue (ft)	77	56	52	46
95th Queue (ft)	116	106	93	88
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	7			
Queuing Penalty (veh)	22			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	147	90	178	125	118
Average Queue (ft)	80	26	77	78	64
95th Queue (ft)	139	63	137	113	104
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	1			4	1
Queuing Penalty (veh)	4			5	2
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	3		
Queuing Penalty (veh)		0	5		

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	53	119	118	166	28	210	140	185	213	159
Average Queue (ft)	19	51	56	83	2	99	68	71	111	60
95th Queue (ft)	46	94	97	149	14	175	130	145	175	119
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)		0	0	0						
Queuing Penalty (veh)		0	0	1						
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)						5	1			
Queuing Penalty (veh)						10	1			

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	170	188	102	185	182	88	173	148	166	75	108
Average Queue (ft)	102	127	68	68	84	28	72	52	92	23	49
95th Queue (ft)	177	202	106	156	166	68	131	117	148	57	84
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	1	4	3	5	5						
Queuing Penalty (veh)	2	16	0	20	21						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			3	5		0	3				
Queuing Penalty (veh)			9	6		0	1				

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	R	<	R	T
Maximum Queue (ft)	173	202	212	306	138	211	238	611
Average Queue (ft)	78	88	68	92	9	137	183	175
95th Queue (ft)	152	171	173	223	84	215	262	530
Link Distance (ft)	456	456	334	334	334	145	145	915
Upstream Blk Time (%)				0	0	12	34	0
Queuing Penalty (veh)				0	0	0	0	0
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	134	144	207	230	252	202	260	354	336	550	340	149
Average Queue (ft)	63	81	114	126	129	102	125	211	181	267	138	59
95th Queue (ft)	114	127	178	199	224	177	218	317	326	435	296	115
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)				0	0							
Queuing Penalty (veh)				0	0							
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)			0	0	0	7	7		0	9	0	
Queuing Penalty (veh)			0	0	1	21	11		1	49	0	

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	128
Average Queue (ft)	60
95th Queue (ft)	111
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	209	191	162	232	187	144	152	128
Average Queue (ft)	99	82	92	74	62	60	67	53
95th Queue (ft)	180	160	160	163	137	111	125	97
Link Distance (ft)	211	211		1338	1338		800	
Upstream Blk Time (%)	0	0						
Queuing Penalty (veh)	1	1						
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)			3	0		0	0	
Queuing Penalty (veh)			6	1		0	0	

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

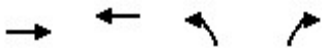
Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	534	180	238	125	124	198	81
Average Queue (ft)	216	126	171	45	41	96	36
95th Queue (ft)	421	218	253	104	101	165	63
Link Distance (ft)	1398		211	211	211	1120	1120
Upstream Blk Time (%)			4				
Queuing Penalty (veh)			12				
Storage Bay Dist (ft)		155					
Storage Blk Time (%)	12	1					
Queuing Penalty (veh)	42	6					

Zone Summary

Zone wide Queuing Penalty: 276

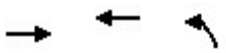
Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	91	72	33	50	11
Average Queue (ft)	51	37	10	31	1
95th Queue (ft)	78	61	33	46	7
Link Distance (ft)	1196	1196		263	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)					
Queuing Penalty (veh)					



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	171	334	79	116
v/c Ratio	0.30	0.30	0.16	0.14
Control Delay	14.8	13.2	16.5	1.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.8	13.2	16.5	1.8
Queue Length 50th (ft)	31	34	15	0
Queue Length 95th (ft)	83	72	50	15
Internal Link Dist (ft)	795	110	1248	
Turn Bay Length (ft)			400	
Base Capacity (vph)	1332	2576	1293	1212
Starvation Cap Reductn	0	179	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.13	0.14	0.06	0.10

Intersection Summary



Lane Group	EBT	WBT	NBL
Lane Group Flow (vph)	249	290	51
v/c Ratio	0.31	0.35	0.16
Control Delay	13.5	13.9	12.3
Queue Delay	0.0	0.0	0.0
Total Delay	13.5	13.9	12.3
Queue Length 50th (ft)	21	25	6
Queue Length 95th (ft)	47	54	27
Internal Link Dist (ft)	110	349	980
Turn Bay Length (ft)			
Base Capacity (vph)	3478	2361	439
Starvation Cap Reductn	48	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.07	0.12	0.12

Intersection Summary

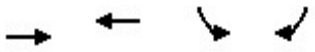
Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	38	126	45	54	66	289	109	314
v/c Ratio	0.10	0.24	0.12	0.10	0.16	0.35	0.28	0.20
Control Delay	23.3	3.3	23.0	0.4	22.2	15.9	26.2	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.3	3.3	23.0	0.4	22.2	15.9	26.2	15.2
Queue Length 50th (ft)	8	0	10	0	14	54	24	30
Queue Length 95th (ft)	39	18	43	0	56	158	#103	86
Internal Link Dist (ft)	1255		1856			1215		1576
Turn Bay Length (ft)					550		120	
Base Capacity (vph)	606	889	855	870	837	1384	402	2283
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.14	0.05	0.06	0.08	0.21	0.27	0.14

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Group Flow (vph)	114	45	3	98	64
v/c Ratio	0.18	0.08	0.01	0.14	0.07
Control Delay	8.7	4.4	11.0	5.3	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.7	4.4	11.0	5.3	8.2
Queue Length 50th (ft)	8	0	0	7	4
Queue Length 95th (ft)	45	15	5	21	29
Internal Link Dist (ft)	1867			481	560
Turn Bay Length (ft)		175	100		
Base Capacity (vph)	1788	1521	523	1863	1226
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.06	0.03	0.01	0.05	0.05

Intersection Summary



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	128	53	38	80
v/c Ratio	0.20	0.09	0.08	0.16
Control Delay	10.8	8.2	12.5	5.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.8	8.2	12.5	5.7
Queue Length 50th (ft)	9	2	3	0
Queue Length 95th (ft)	53	23	24	23
Internal Link Dist (ft)	481	1255	1385	
Turn Bay Length (ft)				70
Base Capacity (vph)	1406	1353	1154	1060
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.09	0.04	0.03	0.08

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	47	27	230	26	122	404
v/c Ratio	0.09	0.04	0.23	0.03	0.20	0.28
Control Delay	16.4	3.4	11.5	6.5	14.4	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.4	3.4	11.5	6.5	14.4	3.4
Queue Length 50th (ft)	6	0	24	0	14	0
Queue Length 95th (ft)	36	9	107	13	69	86
Internal Link Dist (ft)	948		843			643
Turn Bay Length (ft)	165			405	405	
Base Capacity (vph)	1047	1237	1532	1306	1195	1810
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.02	0.15	0.02	0.10	0.22

Intersection Summary

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	111	162	82	82
Average Queue (ft)	79	70	35	34
95th Queue (ft)	119	131	70	67
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	9			
Queuing Penalty (veh)	27			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	140	56	118	117	100
Average Queue (ft)	68	15	50	59	43
95th Queue (ft)	123	44	98	103	82
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	0			2	1
Queuing Penalty (veh)	2			2	1
Storage Bay Dist (ft)		100			
Storage Blk Time (%)			1		
Queuing Penalty (veh)			1		

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	58	73	90	88	12	103	71	86	126	84
Average Queue (ft)	20	28	40	33	1	47	32	25	63	30
95th Queue (ft)	50	59	75	69	7	85	59	63	106	65
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)						0				
Queuing Penalty (veh)						0				

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	133	163	99	142	132	68	100	134	154	59	68
Average Queue (ft)	35	64	52	33	44	20	49	40	85	17	29
95th Queue (ft)	88	128	90	98	105	54	84	98	140	47	54
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	0	0	1	1	1						
Queuing Penalty (veh)	0	0	0	2	2						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			1	1		0	0				
Queuing Penalty (veh)			1	1		0	0				

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	<	R	T
Maximum Queue (ft)	59	73	51	73	200	157	74
Average Queue (ft)	11	20	7	9	108	60	4
95th Queue (ft)	39	55	29	42	180	110	40
Link Distance (ft)	456	456	334	334	145	145	915
Upstream Blk Time (%)					5	0	
Queuing Penalty (veh)					0	0	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	55	73	95	107	121	116	90	125	108	176	101	63
Average Queue (ft)	16	34	41	53	59	42	37	62	33	87	42	22
95th Queue (ft)	45	66	80	92	98	84	73	109	75	141	80	52
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)						0	0					
Queuing Penalty (veh)						0	0					

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	80
Average Queue (ft)	31
95th Queue (ft)	63
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	79	104	76	74	56	62	66	77
Average Queue (ft)	33	45	32	32	20	22	27	35
95th Queue (ft)	65	90	64	60	45	54	58	62
Link Distance (ft)	211	211		1338	1338		800	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

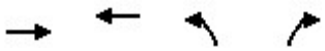
Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	99	50	127	64	62	75	57
Average Queue (ft)	42	18	62	26	14	35	26
95th Queue (ft)	83	40	108	58	46	64	49
Link Distance (ft)	1398		211	211	211	1120	1120
Upstream Blk Time (%)			0				
Queuing Penalty (veh)			0				
Storage Bay Dist (ft)		155					
Storage Blk Time (%)	0						
Queuing Penalty (veh)	0						

Zone Summary

Zone wide Queuing Penalty: 40

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

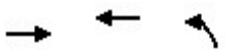
Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	140	140	33	100	24
Average Queue (ft)	71	57	11	50	1
95th Queue (ft)	117	98	35	81	9
Link Distance (ft)	1196	1196		263	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	401	493	274	587
v/c Ratio	0.77	0.50	0.67	0.58
Control Delay	36.8	25.0	35.2	8.6
Queue Delay	0.0	1.1	0.0	0.0
Total Delay	36.8	26.1	35.2	8.6
Queue Length 50th (ft)	165	97	117	91
Queue Length 95th (ft)	#341	172	212	192
Internal Link Dist (ft)	795	110	1248	
Turn Bay Length (ft)			400	
Base Capacity (vph)	688	1311	659	1001
Starvation Cap Reductn	0	558	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.58	0.65	0.42	0.59

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBL
Lane Group Flow (vph)	908	440	120
v/c Ratio	0.64	0.53	0.42
Control Delay	16.5	24.1	29.4
Queue Delay	0.2	0.0	0.0
Total Delay	16.7	24.1	29.4
Queue Length 50th (ft)	131	75	35
Queue Length 95th (ft)	223	141	99
Internal Link Dist (ft)	110	349	980
Turn Bay Length (ft)			
Base Capacity (vph)	2447	1826	359
Starvation Cap Reductn	692	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.52	0.24	0.33

Intersection Summary

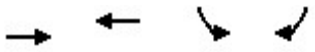
Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	10	207	207	184	279	549	48	495
v/c Ratio	0.05	0.37	0.57	0.37	0.65	0.62	0.25	0.56
Control Delay	30.4	4.4	30.9	4.4	32.8	19.5	32.3	22.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.4	4.4	30.9	4.4	32.8	19.5	32.3	22.7
Queue Length 50th (ft)	3	0	64	0	86	158	16	77
Queue Length 95th (ft)	19	24	163	30	#262	#400	55	155
Internal Link Dist (ft)	1255		1856			1215		1576
Turn Bay Length (ft)					550		120	
Base Capacity (vph)	319	586	469	580	457	1038	211	1487
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.35	0.44	0.32	0.61	0.53	0.23	0.33

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Group Flow (vph)	249	354	24	258	93
v/c Ratio	0.18	0.28	0.04	0.18	0.13
Control Delay	6.3	2.2	13.9	3.6	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	6.3	2.2	13.9	3.6	10.6
Queue Length 50th (ft)	0	0	0	0	1
Queue Length 95th (ft)	97	41	23	54	52
Internal Link Dist (ft)	1867			481	560
Turn Bay Length (ft)		175	100		
Base Capacity (vph)	1695	1472	765	1801	1329
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.15	0.24	0.03	0.14	0.07

Intersection Summary



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	266	320	54	132
v/c Ratio	0.46	0.53	0.16	0.32
Control Delay	18.5	16.0	21.9	7.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.5	16.0	21.9	7.8
Queue Length 50th (ft)	59	56	13	0
Queue Length 95th (ft)	146	149	47	41
Internal Link Dist (ft)	481	1255	1069	
Turn Bay Length (ft)				70
Base Capacity (vph)	969	959	773	766
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.27	0.33	0.07	0.17

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	64	212	707	161	322	341
v/c Ratio	0.31	0.34	0.84	0.20	0.75	0.22
Control Delay	33.4	9.3	30.9	3.6	36.9	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	9.3	30.9	3.6	36.9	3.1
Queue Length 50th (ft)	27	32	299	0	132	37
Queue Length 95th (ft)	63	72	#559	35	#254	75
Internal Link Dist (ft)	979		866			683
Turn Bay Length (ft)	165			400	410	
Base Capacity (vph)	375	702	845	804	529	1521
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.30	0.84	0.20	0.61	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	106	442	130	101
Average Queue (ft)	78	209	55	34
95th Queue (ft)	117	478	103	73
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	8			
Queuing Penalty (veh)	23			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	134	119	207	128	115
Average Queue (ft)	63	44	87	80	58
95th Queue (ft)	109	98	159	123	105
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	0			6	2
Queuing Penalty (veh)	1			10	2
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	4		
Queuing Penalty (veh)		0	9		

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	T
Maximum Queue (ft)	64	108	113	139	10	160	120	128	147	149
Average Queue (ft)	28	49	55	53	0	67	42	39	76	55
95th Queue (ft)	57	91	97	108	5	126	82	90	123	109
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)		0	0	0						
Queuing Penalty (veh)		0	0	0						
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)						1	0			
Queuing Penalty (veh)						2	0			

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	153	174	102	168	173	56	101	217	214	91	81
Average Queue (ft)	62	91	59	62	82	18	46	103	135	30	40
95th Queue (ft)	133	168	99	140	154	48	83	186	198	68	67
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	0	1	2	3	4						
Queuing Penalty (veh)	0	3	0	10	12						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			2	3			0	0	0		
Queuing Penalty (veh)			5	3			0	0	0		

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	<	R	T
Maximum Queue (ft)	116	127	112	135	212	224	353
Average Queue (ft)	35	40	22	28	145	144	67
95th Queue (ft)	87	97	75	91	214	230	254
Link Distance (ft)	456	456	327	327	138	138	890
Upstream Blk Time (%)					18	15	
Queuing Penalty (veh)					0	0	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	96	102	154	163	167	125	153	246	73	137	118	83
Average Queue (ft)	34	55	76	85	74	59	82	123	21	69	39	31
95th Queue (ft)	74	88	131	137	134	103	137	206	54	116	82	67
Link Distance (ft)			327	327			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)					0	0	1					
Queuing Penalty (veh)					0	1	2					

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	82
Average Queue (ft)	36
95th Queue (ft)	73
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	124	201	58	87	95	119	284	190
Average Queue (ft)	54	105	16	38	47	29	126	70
95th Queue (ft)	100	175	44	71	83	87	226	147
Link Distance (ft)	211	211		1558	1558		800	
Upstream Blk Time (%)		0						
Queuing Penalty (veh)		0						
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)				0			1	0
Queuing Penalty (veh)				0			4	0

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	209	141	116	122	138	132	85
Average Queue (ft)	94	32	52	56	55	59	44
95th Queue (ft)	167	85	97	106	111	106	73
Link Distance (ft)	548		211	211	211	1120	1120
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		155					
Storage Blk Time (%)	1	0					
Queuing Penalty (veh)	2	0					

Zone Summary

Zone wide Queuing Penalty: 89

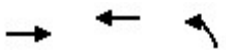
Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	217	179	37	99	46
Average Queue (ft)	106	84	13	50	8
95th Queue (ft)	182	149	38	83	29
Link Distance (ft)	1196	1196		264	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	

Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	339	1022	167	296
v/c Ratio	0.73	0.79	0.54	0.28
Control Delay	33.3	27.2	34.1	2.0
Queue Delay	0.0	50.5	0.0	0.0
Total Delay	33.3	77.7	34.1	2.0
Queue Length 50th (ft)	128	197	65	3
Queue Length 95th (ft)	230	#396	134	35
Internal Link Dist (ft)	795	110	1248	
Turn Bay Length (ft)			400	
Base Capacity (vph)	679	1299	652	1075
Starvation Cap Reductn	0	569	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.50	1.40	0.26	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBL
Lane Group Flow (vph)	679	960	164
v/c Ratio	0.68	0.74	0.65
Control Delay	24.1	23.6	40.5
Queue Delay	0.1	0.0	0.0
Total Delay	24.2	23.6	40.5
Queue Length 50th (ft)	126	177	60
Queue Length 95th (ft)	170	266	#146
Internal Link Dist (ft)	110	349	980
Turn Bay Length (ft)			
Base Capacity (vph)	2122	1350	259
Starvation Cap Reductn	504	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.42	0.71	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	76	262	64	109	281	705	152	557
v/c Ratio	0.35	0.40	0.30	0.28	0.78	0.84	0.85	0.45
Control Delay	37.2	3.6	35.9	1.8	47.5	32.2	77.7	22.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	3.6	35.9	1.8	47.5	32.2	77.7	22.0
Queue Length 50th (ft)	34	0	29	0	130	302	74	111
Queue Length 95th (ft)	76	29	66	0	#275	#569	#196	171
Internal Link Dist (ft)	1255		1856			1215		1576
Turn Bay Length (ft)					550		120	
Base Capacity (vph)	268	669	396	525	384	868	178	1252
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.39	0.16	0.21	0.73	0.81	0.85	0.44

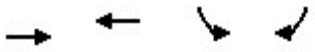
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Group Flow (vph)	435	183	16	513	461
v/c Ratio	0.60	0.25	0.06	0.65	0.73
Control Delay	15.0	3.0	22.2	13.5	26.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	3.0	22.2	13.5	26.2
Queue Length 50th (ft)	74	0	3	92	86
Queue Length 95th (ft)	166	22	20	124	#322
Internal Link Dist (ft)	1867			481	560
Turn Bay Length (ft)		175	100		
Base Capacity (vph)	1313	1169	300	1713	631
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.33	0.16	0.05	0.30	0.73

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	452	363	192	271
v/c Ratio	0.82	0.74	0.57	0.52
Control Delay	35.6	29.3	30.8	7.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	35.6	29.3	30.8	7.5
Queue Length 50th (ft)	155	114	68	0
Queue Length 95th (ft)	#309	194	123	46
Internal Link Dist (ft)	481	1255	1385	
Turn Bay Length (ft)				70
Base Capacity (vph)	624	639	461	613
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.72	0.57	0.42	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	171	395	511	52	143	682
v/c Ratio	0.51	0.54	0.73	0.08	0.43	0.53
Control Delay	31.2	9.9	24.2	5.1	29.3	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.2	9.9	24.2	5.1	29.3	7.8
Queue Length 50th (ft)	58	48	160	0	49	125
Queue Length 95th (ft)	136	130	316	20	110	223
Internal Link Dist (ft)	1019		868			743
Turn Bay Length (ft)	165			410	400	
Base Capacity (vph)	463	986	1045	910	654	1585
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.40	0.49	0.06	0.22	0.43

Intersection Summary

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	113	655	197	195
Average Queue (ft)	88	354	81	74
95th Queue (ft)	117	872	173	163
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	19			
Queuing Penalty (veh)	55			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	148	122	190	134	120
Average Queue (ft)	94	34	89	101	80
95th Queue (ft)	153	84	158	137	126
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	2			22	9
Queuing Penalty (veh)	6			43	18
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	4		
Queuing Penalty (veh)		0	10		

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	51	124	127	169	36	258	139	221	237	162
Average Queue (ft)	20	60	60	97	3	101	79	84	128	62
95th Queue (ft)	47	107	107	171	20	186	141	179	206	125
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)		0	0	1						
Queuing Penalty (veh)		0	0	2						
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)						4	2			
Queuing Penalty (veh)						9	5			

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	172	193	102	183	183	91	207	207	221	119	108
Average Queue (ft)	105	145	64	68	110	31	92	108	138	36	46
95th Queue (ft)	186	211	103	154	192	73	165	190	201	77	83
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	1	9	2	5	10						
Queuing Penalty (veh)	3	35	0	18	37						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			2	5		0	8	0	0	0	
Queuing Penalty (veh)			5	5		0	2	0	0	0	

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	R	<	R	T
Maximum Queue (ft)	155	178	236	318	244	215	234	463
Average Queue (ft)	63	70	69	94	15	141	183	123
95th Queue (ft)	129	142	181	241	127	224	261	362
Link Distance (ft)	456	456	334	334	334	145	145	915
Upstream Blk Time (%)				0	0	12	33	0
Queuing Penalty (veh)				1	0	0	0	0
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	143	163	220	238	274	204	303	400	340	664	340	143
Average Queue (ft)	69	88	122	132	130	111	144	235	224	328	185	62
95th Queue (ft)	123	141	191	207	228	186	253	351	375	555	372	117
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)		0	0	0	1	10	11		1	16	0	
Queuing Penalty (veh)		0	0	1	2	30	19		3	91	2	

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	144
Average Queue (ft)	68
95th Queue (ft)	124
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	213	200	163	217	187	123	162	147
Average Queue (ft)	102	86	91	72	68	58	73	53
95th Queue (ft)	179	175	158	152	136	106	135	99
Link Distance (ft)	211	211		1338	1338		800	
Upstream Blk Time (%)	0	1						
Queuing Penalty (veh)	1	2						
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)			2	0			0	
Queuing Penalty (veh)			6	0			0	

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

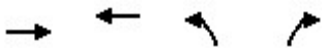
Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	558	180	231	120	130	200	73
Average Queue (ft)	233	122	165	48	47	99	33
95th Queue (ft)	476	221	254	104	108	167	60
Link Distance (ft)	1398		211	211	211	1120	1120
Upstream Blk Time (%)			5		0		
Queuing Penalty (veh)			14		0		
Storage Bay Dist (ft)		155					
Storage Blk Time (%)	13	2					
Queuing Penalty (veh)	47	8					

Zone Summary

Zone wide Queuing Penalty: 484

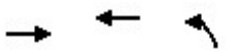
Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	64	59	31	57	2
Average Queue (ft)	36	27	7	33	0
95th Queue (ft)	56	48	28	44	2
Link Distance (ft)	1196	1196		264	401
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)					
Queuing Penalty (veh)					



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	249	262	129	461
v/c Ratio	0.33	0.19	0.20	0.40
Control Delay	17.3	15.6	19.7	2.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	17.3	15.6	19.7	2.8
Queue Length 50th (ft)	55	30	30	10
Queue Length 95th (ft)	140	68	87	51
Internal Link Dist (ft)	795	110	1248	
Turn Bay Length (ft)			400	
Base Capacity (vph)	1130	2145	1082	1170
Starvation Cap Reductn	0	286	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.22	0.14	0.12	0.39

Intersection Summary



Lane Group	EBT	WBT	NBL
Lane Group Flow (vph)	711	250	57
v/c Ratio	0.53	0.31	0.18
Control Delay	12.5	17.9	19.4
Queue Delay	0.0	0.0	0.0
Total Delay	12.5	17.9	19.4
Queue Length 50th (ft)	75	30	12
Queue Length 95th (ft)	136	69	44
Internal Link Dist (ft)	110	349	980
Turn Bay Length (ft)			
Base Capacity (vph)	3022	2276	470
Starvation Cap Reductn	534	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.29	0.11	0.12

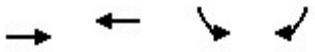
Intersection Summary

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	5	160	134	97	149	274	14	327
v/c Ratio	0.02	0.32	0.35	0.19	0.38	0.25	0.06	0.39
Control Delay	24.8	4.3	22.1	0.8	22.1	10.6	24.5	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.8	4.3	22.1	0.8	22.1	10.6	24.5	19.0
Queue Length 50th (ft)	1	0	29	0	32	30	3	36
Queue Length 95th (ft)	12	17	99	0	108	159	22	103
Internal Link Dist (ft)	1255		1856			1215		1576
Turn Bay Length (ft)					550		120	
Base Capacity (vph)	451	704	659	723	645	1359	299	2101
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.23	0.20	0.13	0.23	0.20	0.05	0.16

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Group Flow (vph)	191	273	8	162	50
v/c Ratio	0.13	0.21	0.01	0.10	0.07
Control Delay	4.6	2.0	10.1	1.8	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	4.6	2.0	10.1	1.8	8.0
Queue Length 50th (ft)	0	0	0	0	0
Queue Length 95th (ft)	70	35	10	31	29
Internal Link Dist (ft)	1867			481	560
Turn Bay Length (ft)		175	100		
Base Capacity (vph)	1755	1507	851	1859	1533
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.11	0.18	0.01	0.09	0.03

Intersection Summary



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	177	189	35	59
v/c Ratio	0.32	0.34	0.09	0.15
Control Delay	14.3	12.0	16.4	7.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.3	12.0	16.4	7.3
Queue Length 50th (ft)	31	25	6	0
Queue Length 95th (ft)	81	74	27	23
Internal Link Dist (ft)	481	1255	1954	
Turn Bay Length (ft)				70
Base Capacity (vph)	1190	1161	899	833
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.15	0.16	0.04	0.07

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	33	86	370	138	227	212
v/c Ratio	0.10	0.13	0.50	0.20	0.41	0.15
Control Delay	24.0	3.3	15.7	4.0	18.7	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	3.3	15.7	4.0	18.7	2.3
Queue Length 50th (ft)	5	0	50	0	32	0
Queue Length 95th (ft)	38	21	203	32	146	40
Internal Link Dist (ft)	1148		927			713
Turn Bay Length (ft)	165			410	400	
Base Capacity (vph)	792	1033	1385	1209	984	1707
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.08	0.27	0.11	0.23	0.12

Intersection Summary

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	90	121	59	53
Average Queue (ft)	39	59	19	16
95th Queue (ft)	80	103	49	41
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	1			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	108	60	92	85	68
Average Queue (ft)	46	16	38	38	31
95th Queue (ft)	84	45	75	70	61
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	0			0	0
Queuing Penalty (veh)	0			0	0
Storage Bay Dist (ft)		100			
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	44	48	54	73	27	67	48	44	83	54
Average Queue (ft)	9	19	19	23	3	26	17	7	36	14
95th Queue (ft)	34	41	44	51	16	58	43	29	67	38
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	53	91	70	67	99	36	34	130	148	50	57
Average Queue (ft)	10	25	29	13	28	7	9	46	90	11	21
95th Queue (ft)	34	65	61	46	76	28	30	106	142	37	46
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)			0	0	0						
Queuing Penalty (veh)			0	0	0						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			0	0							
Queuing Penalty (veh)			0	0							

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	<	R	T
Maximum Queue (ft)	30	38	23	36	182	129	39
Average Queue (ft)	3	4	2	2	84	60	2
95th Queue (ft)	18	20	13	15	152	102	23
Link Distance (ft)	456	456	327	327	138	138	890
Upstream Blk Time (%)					3	0	
Queuing Penalty (veh)					0	0	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	45	57	74	98	56	60	80	124	26	65	48	35
Average Queue (ft)	12	28	21	42	23	22	32	48	3	29	16	12
95th Queue (ft)	38	53	56	81	50	49	66	95	17	55	37	37
Link Distance (ft)			327	327			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)							0					
Queuing Penalty (veh)							0					

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	35
Average Queue (ft)	4
95th Queue (ft)	23
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	72	111	38	73	45	55	121	70
Average Queue (ft)	29	46	11	32	13	16	56	32
95th Queue (ft)	60	90	33	60	33	46	103	57
Link Distance (ft)	211	211		1417	1417		800	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

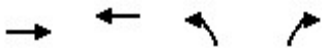
Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	96	60	92	84	76	49	63
Average Queue (ft)	35	19	35	27	18	15	30
95th Queue (ft)	75	44	74	64	56	42	52
Link Distance (ft)	1539		211	211	211	1120	1120
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		155					
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 2

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

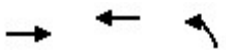
Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	183	134	38	79	40
Average Queue (ft)	89	62	15	39	7
95th Queue (ft)	147	105	40	64	26
Link Distance (ft)	1196	1196		263	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	417	798	191	276
v/c Ratio	0.77	0.71	0.58	0.28
Control Delay	35.0	26.7	35.7	3.4
Queue Delay	0.0	51.6	0.0	0.0
Total Delay	35.0	78.3	35.7	3.4
Queue Length 50th (ft)	173	166	83	14
Queue Length 95th (ft)	#325	266	151	48
Internal Link Dist (ft)	795	110	1248	
Turn Bay Length (ft)			400	
Base Capacity (vph)	673	1286	646	985
Starvation Cap Reductn	0	580	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.62	1.13	0.30	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBL
Lane Group Flow (vph)	645	743	197
v/c Ratio	0.63	0.67	0.68
Control Delay	21.0	21.8	39.2
Queue Delay	0.1	0.0	0.0
Total Delay	21.0	21.8	39.2
Queue Length 50th (ft)	100	124	63
Queue Length 95th (ft)	166	200	#189
Internal Link Dist (ft)	110	349	980
Turn Bay Length (ft)			
Base Capacity (vph)	2344	1496	289
Starvation Cap Reductn	506	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.35	0.50	0.68

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	72	231	67	73	203	693	146	525
v/c Ratio	0.33	0.39	0.31	0.19	0.64	0.84	0.80	0.40
Control Delay	36.8	3.8	35.9	1.0	39.9	31.9	69.7	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.8	3.8	35.9	1.0	39.9	31.9	69.7	20.9
Queue Length 50th (ft)	32	0	30	0	90	293	71	102
Queue Length 95th (ft)	74	28	68	0	166	#558	#188	161
Internal Link Dist (ft)	1255		1856			1215		1576
Turn Bay Length (ft)					550		120	
Base Capacity (vph)	275	652	404	532	394	889	182	1320
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.35	0.17	0.14	0.52	0.78	0.80	0.40

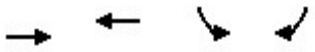
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Group Flow (vph)	350	159	14	417	401
v/c Ratio	0.54	0.24	0.05	0.58	0.59
Control Delay	14.8	3.5	20.0	12.8	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	3.5	20.0	12.8	19.5
Queue Length 50th (ft)	56	0	3	70	59
Queue Length 95th (ft)	156	29	19	117	#285
Internal Link Dist (ft)	1867			481	560
Turn Bay Length (ft)		175	100		
Base Capacity (vph)	1404	1232	321	1752	675
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.25	0.13	0.04	0.24	0.59

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	389	301	172	250
v/c Ratio	0.73	0.64	0.50	0.49
Control Delay	29.0	24.4	27.8	7.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	29.0	24.4	27.8	7.4
Queue Length 50th (ft)	114	79	53	0
Queue Length 95th (ft)	#274	168	119	53
Internal Link Dist (ft)	481	1255	1385	
Turn Bay Length (ft)				70
Base Capacity (vph)	685	699	507	632
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.57	0.43	0.34	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	199	379	448	85	198	500
v/c Ratio	0.61	0.44	0.75	0.15	0.56	0.44
Control Delay	34.9	6.4	27.6	4.9	30.3	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.9	6.4	27.6	4.9	30.3	7.2
Queue Length 50th (ft)	67	29	145	0	67	84
Queue Length 95th (ft)	#178	99	283	27	147	140
Internal Link Dist (ft)	1014		980			673
Turn Bay Length (ft)	165			410	400	
Base Capacity (vph)	413	1034	932	833	583	1576
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.37	0.48	0.10	0.34	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	112	137	112	108
Average Queue (ft)	77	55	49	46
95th Queue (ft)	115	109	92	88
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	8			
Queuing Penalty (veh)	23			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	141	97	166	128	113
Average Queue (ft)	77	26	74	78	61
95th Queue (ft)	134	66	136	113	102
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	1			4	1
Queuing Penalty (veh)	3			4	1
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	2		
Queuing Penalty (veh)		0	4		

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	52	125	132	169	35	228	140	184	210	146
Average Queue (ft)	18	55	56	87	3	102	73	71	109	64
95th Queue (ft)	45	102	100	159	20	185	139	144	176	118
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)		0	0	0						
Queuing Penalty (veh)		0	0	1						
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)						5	1			
Queuing Penalty (veh)						10	3			

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	172	186	102	190	176	87	146	144	161	83	105
Average Queue (ft)	101	125	68	72	89	29	69	60	95	28	47
95th Queue (ft)	178	203	106	167	172	66	117	126	151	65	86
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	1	4	3	6	5						
Queuing Penalty (veh)	3	13	0	25	22						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			3	6		0	2				
Queuing Penalty (veh)			11	8		0	1				

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	R	<	R	T
Maximum Queue (ft)	181	218	256	321	226	216	235	464
Average Queue (ft)	79	88	84	110	19	138	178	122
95th Queue (ft)	156	175	201	248	145	218	258	388
Link Distance (ft)	456	456	334	334	334	145	145	915
Upstream Blk Time (%)				0	0	11	30	
Queuing Penalty (veh)				1	1	0	0	
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	156	169	219	239	262	199	300	390	339	619	336	139
Average Queue (ft)	68	86	115	127	123	102	136	230	206	303	154	58
95th Queue (ft)	123	138	189	207	220	179	235	347	355	545	324	110
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)				0	0							
Queuing Penalty (veh)				0	0							
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)		0	0	0	1	7	9		0	12	0	
Queuing Penalty (veh)		0	0	0	2	22	15		2	70	1	

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	134	14
Average Queue (ft)	57	0
95th Queue (ft)	107	14
Link Distance (ft)	229	229
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	214	209	163	232	180	116	146	135
Average Queue (ft)	96	89	93	68	60	54	67	56
95th Queue (ft)	177	169	159	148	126	100	120	100
Link Distance (ft)	211	211		1338	1338		800	
Upstream Blk Time (%)	1	1						
Queuing Penalty (veh)	2	2						
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)			2	1				0
Queuing Penalty (veh)			6	1				0

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

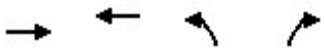
Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	420	180	233	143	153	192	82
Average Queue (ft)	193	124	169	45	41	95	36
95th Queue (ft)	346	217	250	105	104	162	64
Link Distance (ft)	1398		211	211	211	1120	1120
Upstream Blk Time (%)			4				
Queuing Penalty (veh)			11				
Storage Bay Dist (ft)		155					
Storage Blk Time (%)	10	1					
Queuing Penalty (veh)	34	6					

Zone Summary

Zone wide Queuing Penalty: 311

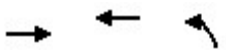
Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	94	82	31	58	20
Average Queue (ft)	51	39	11	32	1
95th Queue (ft)	79	64	34	49	10
Link Distance (ft)	1196	1196		264	401
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)					
Queuing Penalty (veh)					



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	177	362	79	139
v/c Ratio	0.30	0.31	0.16	0.16
Control Delay	15.1	13.2	17.0	1.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	15.1	13.2	17.0	1.8
Queue Length 50th (ft)	34	37	16	0
Queue Length 95th (ft)	87	78	52	17
Internal Link Dist (ft)	795	110	1248	
Turn Bay Length (ft)			400	
Base Capacity (vph)	1310	2534	1271	1203
Starvation Cap Reductn	0	256	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.14	0.16	0.06	0.12

Intersection Summary



Lane Group	EBT	WBT	NBL
Lane Group Flow (vph)	277	318	51
v/c Ratio	0.34	0.38	0.17
Control Delay	13.9	14.3	12.7
Queue Delay	0.0	0.0	0.0
Total Delay	13.9	14.3	12.7
Queue Length 50th (ft)	24	28	6
Queue Length 95th (ft)	53	60	28
Internal Link Dist (ft)	110	349	980
Turn Bay Length (ft)			
Base Capacity (vph)	3461	2328	433
Starvation Cap Reductn	73	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.08	0.14	0.12

Intersection Summary

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	38	160	45	54	100	307	109	333
v/c Ratio	0.10	0.28	0.12	0.10	0.23	0.36	0.28	0.22
Control Delay	23.8	3.1	23.3	0.4	21.8	15.9	26.8	16.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.8	3.1	23.3	0.4	21.8	15.9	26.8	16.0
Queue Length 50th (ft)	8	0	10	0	22	58	25	33
Queue Length 95th (ft)	39	19	43	0	76	168	#106	95
Internal Link Dist (ft)	1255		1856			1215		1576
Turn Bay Length (ft)					550		120	
Base Capacity (vph)	601	898	847	865	830	1376	398	2261
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.18	0.05	0.06	0.12	0.22	0.27	0.15

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Group Flow (vph)	142	45	3	126	64
v/c Ratio	0.21	0.08	0.01	0.16	0.07
Control Delay	8.6	4.3	11.3	5.3	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.6	4.3	11.3	5.3	8.4
Queue Length 50th (ft)	10	0	0	9	4
Queue Length 95th (ft)	54	15	5	25	30
Internal Link Dist (ft)	1867			481	560
Turn Bay Length (ft)		175	100		
Base Capacity (vph)	1781	1516	556	1863	1289
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.08	0.03	0.01	0.07	0.05

Intersection Summary

Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	156	87	43	80
v/c Ratio	0.27	0.16	0.10	0.18
Control Delay	12.8	9.9	14.3	6.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.8	9.9	14.3	6.1
Queue Length 50th (ft)	27	9	8	0
Queue Length 95th (ft)	65	36	28	24
Internal Link Dist (ft)	481	1255	1385	
Turn Bay Length (ft)				70
Base Capacity (vph)	1287	1262	991	921
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.12	0.07	0.04	0.09

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	47	27	291	26	122	465
v/c Ratio	0.09	0.04	0.28	0.03	0.20	0.32
Control Delay	17.7	3.9	11.5	6.2	15.5	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.7	3.9	11.5	6.2	15.5	3.5
Queue Length 50th (ft)	6	0	33	0	16	0
Queue Length 95th (ft)	38	10	137	13	74	103
Internal Link Dist (ft)	1248		978			663
Turn Bay Length (ft)	165			410	400	
Base Capacity (vph)	1016	1204	1488	1269	1165	1800
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.02	0.20	0.02	0.10	0.26

Intersection Summary

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	113	166	90	95
Average Queue (ft)	82	74	33	34
95th Queue (ft)	120	140	69	69
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	11			
Queuing Penalty (veh)	31			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	143	57	131	113	99
Average Queue (ft)	74	16	52	58	44
95th Queue (ft)	133	44	102	101	85
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	1			2	0
Queuing Penalty (veh)	3			2	0
Storage Bay Dist (ft)		100			
Storage Blk Time (%)			1		
Queuing Penalty (veh)			1		

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	63	75	86	99	17	125	77	92	126	81
Average Queue (ft)	21	26	38	36	1	47	33	27	65	30
95th Queue (ft)	50	57	71	74	8	91	62	69	109	66
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)						0				
Queuing Penalty (veh)						0				

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	133	169	102	121	134	65	106	130	153	66	65
Average Queue (ft)	37	72	54	36	47	20	50	39	82	19	30
95th Queue (ft)	92	141	93	99	110	53	85	92	133	51	56
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	0	0	1	1	1						
Queuing Penalty (veh)	0	1	0	2	2						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			1	1		0	0				
Queuing Penalty (veh)			1	1		0	0				

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	<	R	T
Maximum Queue (ft)	61	68	52	115	203	121	52
Average Queue (ft)	12	19	6	9	102	58	3
95th Queue (ft)	40	52	26	53	177	97	27
Link Distance (ft)	456	456	334	334	145	145	915
Upstream Blk Time (%)				0	4	0	
Queuing Penalty (veh)				0	0	0	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	53	69	101	103	112	94	96	143	92	162	111	70
Average Queue (ft)	15	34	41	54	58	41	39	63	29	85	42	24
95th Queue (ft)	43	63	80	91	96	79	74	110	68	136	83	57
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)						0	0					
Queuing Penalty (veh)						0	0					

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	74
Average Queue (ft)	28
95th Queue (ft)	61
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	79	118	82	73	61	59	70	70
Average Queue (ft)	33	46	31	31	20	21	23	35
95th Queue (ft)	67	93	63	60	45	51	54	59
Link Distance (ft)	211	211		1338	1338		800	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

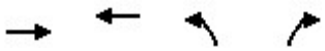
Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	90	55	138	64	60	72	60
Average Queue (ft)	41	19	61	25	12	35	27
95th Queue (ft)	78	42	111	55	43	67	49
Link Distance (ft)	1398		211	211	211	1120	1120
Upstream Blk Time (%)			0				
Queuing Penalty (veh)			0				
Storage Bay Dist (ft)		155					
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 46

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

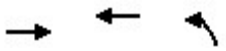
Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	131	127	34	99	21
Average Queue (ft)	70	56	11	50	1
95th Queue (ft)	114	93	35	80	10
Link Distance (ft)	1196	1196		264	401
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	401	493	274	587
v/c Ratio	0.77	0.50	0.67	0.58
Control Delay	36.8	25.0	35.2	8.6
Queue Delay	0.0	1.1	0.0	0.0
Total Delay	36.8	26.1	35.2	8.6
Queue Length 50th (ft)	165	97	117	91
Queue Length 95th (ft)	#341	172	212	192
Internal Link Dist (ft)	795	110	1248	
Turn Bay Length (ft)			400	
Base Capacity (vph)	688	1311	659	1001
Starvation Cap Reductn	0	558	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.58	0.65	0.42	0.59

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBL
Lane Group Flow (vph)	908	440	120
v/c Ratio	0.64	0.53	0.42
Control Delay	16.5	24.1	29.4
Queue Delay	0.2	0.0	0.0
Total Delay	16.7	24.1	29.4
Queue Length 50th (ft)	131	75	35
Queue Length 95th (ft)	223	141	99
Internal Link Dist (ft)	110	349	980
Turn Bay Length (ft)			
Base Capacity (vph)	2447	1826	359
Starvation Cap Reductn	692	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.52	0.24	0.33

Intersection Summary

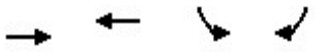
Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	10	207	207	184	279	557	48	503
v/c Ratio	0.05	0.37	0.58	0.37	0.66	0.63	0.25	0.55
Control Delay	30.7	4.5	31.3	4.4	33.3	19.6	32.6	22.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	4.5	31.3	4.4	33.3	19.6	32.6	22.5
Queue Length 50th (ft)	3	0	67	0	90	162	16	79
Queue Length 95th (ft)	19	24	163	30	#262	#410	55	157
Internal Link Dist (ft)	1255		1856			1215		1576
Turn Bay Length (ft)					550		120	
Base Capacity (vph)	317	583	465	577	454	1030	210	1475
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.36	0.45	0.32	0.61	0.54	0.23	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Group Flow (vph)	249	354	24	258	93
v/c Ratio	0.18	0.28	0.04	0.18	0.13
Control Delay	6.3	2.2	13.9	3.6	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	6.3	2.2	13.9	3.6	10.6
Queue Length 50th (ft)	0	0	0	0	1
Queue Length 95th (ft)	97	41	23	54	52
Internal Link Dist (ft)	1867			481	560
Turn Bay Length (ft)		175	100		
Base Capacity (vph)	1695	1472	765	1801	1329
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.15	0.24	0.03	0.14	0.07

Intersection Summary



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	266	320	54	132
v/c Ratio	0.46	0.53	0.16	0.32
Control Delay	18.5	16.0	21.9	7.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.5	16.0	21.9	7.8
Queue Length 50th (ft)	59	56	13	0
Queue Length 95th (ft)	146	149	47	41
Internal Link Dist (ft)	481	1255	1069	
Turn Bay Length (ft)				70
Base Capacity (vph)	969	959	773	766
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.27	0.33	0.07	0.17

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	64	212	707	161	322	341
v/c Ratio	0.31	0.34	0.84	0.20	0.75	0.22
Control Delay	33.4	9.3	30.9	3.6	36.9	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	9.3	30.9	3.6	36.9	3.1
Queue Length 50th (ft)	27	32	299	0	132	37
Queue Length 95th (ft)	63	72	#559	35	#254	75
Internal Link Dist (ft)	1215		1008			673
Turn Bay Length (ft)	165			410	400	
Base Capacity (vph)	375	702	845	804	529	1521
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.30	0.84	0.20	0.61	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	110	384	127	94
Average Queue (ft)	75	171	55	36
95th Queue (ft)	116	332	108	76
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	7			
Queuing Penalty (veh)	22			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	120	114	167	127	110
Average Queue (ft)	59	40	80	78	55
95th Queue (ft)	105	88	141	123	99
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	0			6	1
Queuing Penalty (veh)	0			10	2
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	3		
Queuing Penalty (veh)		0	7		

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	T
Maximum Queue (ft)	61	110	115	135	10	130	126	122	131	125
Average Queue (ft)	25	51	57	53	0	62	42	35	70	53
95th Queue (ft)	55	93	100	106	5	108	84	86	118	105
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)				0						
Queuing Penalty (veh)				0						
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)						1	0			
Queuing Penalty (veh)						1	0			

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	154	176	102	176	169	62	105	202	223	85	92
Average Queue (ft)	59	87	60	62	82	20	48	102	136	29	41
95th Queue (ft)	124	161	103	141	159	52	83	181	198	68	74
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	0	1	2	3	4						
Queuing Penalty (veh)	0	2	0	9	12						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			2	3		0	0	0	0		
Queuing Penalty (veh)			4	3		0	0	0	0		

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	<	R	T
Maximum Queue (ft)	110	126	92	118	210	222	401
Average Queue (ft)	33	38	22	33	146	143	78
95th Queue (ft)	81	94	69	95	220	230	291
Link Distance (ft)	456	456	327	327	138	138	890
Upstream Blk Time (%)					20	13	
Queuing Penalty (veh)					0	0	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	86	104	147	160	160	126	160	234	98	150	102	76
Average Queue (ft)	34	56	73	87	76	61	81	125	23	72	41	32
95th Queue (ft)	71	90	124	134	130	106	137	205	60	122	84	65
Link Distance (ft)			327	327			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)						0	1					
Queuing Penalty (veh)						1	2					

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	75
Average Queue (ft)	32
95th Queue (ft)	65
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	121	192	62	87	95	158	272	224
Average Queue (ft)	48	110	18	39	47	31	128	70
95th Queue (ft)	95	177	49	71	83	89	217	146
Link Distance (ft)	211	211		1558	1558		800	
Upstream Blk Time (%)	0	0						
Queuing Penalty (veh)	0	0						
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)				0			0	0
Queuing Penalty (veh)				0			2	0

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

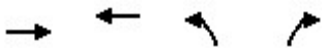
Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	208	130	132	127	130	121	96
Average Queue (ft)	95	28	54	56	53	57	44
95th Queue (ft)	167	72	104	108	109	103	76
Link Distance (ft)	548		211	211	211	1120	1120
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		155					
Storage Blk Time (%)	1	0					
Queuing Penalty (veh)	1	0					

Zone Summary

Zone wide Queuing Penalty: 80

Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

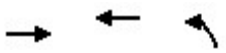
Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	211	180	37	99	50
Average Queue (ft)	107	84	13	51	8
95th Queue (ft)	179	149	38	84	30
Link Distance (ft)	1196	1196		264	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	339	1022	167	296
v/c Ratio	0.73	0.79	0.54	0.28
Control Delay	33.3	27.2	34.1	2.0
Queue Delay	0.0	50.5	0.0	0.0
Total Delay	33.3	77.7	34.1	2.0
Queue Length 50th (ft)	128	197	65	3
Queue Length 95th (ft)	230	#396	134	35
Internal Link Dist (ft)	795	110	1248	
Turn Bay Length (ft)			400	
Base Capacity (vph)	679	1299	652	1075
Starvation Cap Reductn	0	569	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.50	1.40	0.26	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBL
Lane Group Flow (vph)	679	960	164
v/c Ratio	0.68	0.74	0.65
Control Delay	24.1	23.6	40.5
Queue Delay	0.1	0.0	0.0
Total Delay	24.2	23.6	40.5
Queue Length 50th (ft)	126	177	60
Queue Length 95th (ft)	170	266	#146
Internal Link Dist (ft)	110	349	980
Turn Bay Length (ft)			
Base Capacity (vph)	2122	1350	259
Starvation Cap Reductn	504	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.42	0.71	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	76	262	64	109	281	713	152	566
v/c Ratio	0.36	0.40	0.31	0.28	0.79	0.84	0.86	0.45
Control Delay	37.3	3.6	36.0	1.8	48.4	32.4	79.8	22.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.3	3.6	36.0	1.8	48.4	32.4	79.8	22.0
Queue Length 50th (ft)	34	0	29	0	130	308	74	113
Queue Length 95th (ft)	76	29	66	0	#275	#579	#196	174
Internal Link Dist (ft)	1255		1856			1215		1576
Turn Bay Length (ft)					550		120	
Base Capacity (vph)	264	664	390	521	379	856	176	1262
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.39	0.16	0.21	0.74	0.83	0.86	0.45

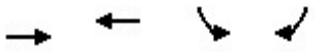
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Group Flow (vph)	435	183	16	513	461
v/c Ratio	0.60	0.25	0.06	0.65	0.73
Control Delay	15.0	3.0	22.2	13.5	26.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	3.0	22.2	13.5	26.2
Queue Length 50th (ft)	74	0	3	92	86
Queue Length 95th (ft)	166	22	20	124	#322
Internal Link Dist (ft)	1867			481	560
Turn Bay Length (ft)		175	100		
Base Capacity (vph)	1313	1169	300	1713	631
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.33	0.16	0.05	0.30	0.73

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	452	363	192	271
v/c Ratio	0.82	0.74	0.57	0.52
Control Delay	35.6	29.3	30.8	7.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	35.6	29.3	30.8	7.5
Queue Length 50th (ft)	155	114	68	0
Queue Length 95th (ft)	#309	194	123	46
Internal Link Dist (ft)	481	1255	1385	
Turn Bay Length (ft)				70
Base Capacity (vph)	624	639	461	613
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.72	0.57	0.42	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	171	395	511	52	143	682
v/c Ratio	0.51	0.54	0.73	0.08	0.43	0.53
Control Delay	31.2	9.9	24.2	5.1	29.3	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.2	9.9	24.2	5.1	29.3	7.8
Queue Length 50th (ft)	58	48	160	0	49	125
Queue Length 95th (ft)	136	130	316	20	110	223
Internal Link Dist (ft)	1251		1006			653
Turn Bay Length (ft)	165			410	400	
Base Capacity (vph)	463	986	1045	910	654	1585
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.40	0.49	0.06	0.22	0.43

Intersection Summary

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	113	523	166	166
Average Queue (ft)	84	208	69	59
95th Queue (ft)	118	451	135	120
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	16			
Queuing Penalty (veh)	47			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	146	110	236	133	120
Average Queue (ft)	89	33	90	99	81
95th Queue (ft)	148	85	166	137	124
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	1			20	7
Queuing Penalty (veh)	6			38	15
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	5		
Queuing Penalty (veh)		0	11		

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	52	128	132	166	39	254	139	220	235	169
Average Queue (ft)	21	61	61	91	3	103	80	83	128	64
95th Queue (ft)	49	107	109	162	21	199	143	182	209	129
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)		0	0	1						
Queuing Penalty (veh)		0	0	1						
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)						5	3	0		
Queuing Penalty (veh)						11	7	0		

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	180	198	102	171	184	107	195	208	227	104	113
Average Queue (ft)	110	150	63	61	104	30	92	113	140	36	45
95th Queue (ft)	192	211	103	139	182	77	161	193	203	80	84
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	1	10	1	3	8						
Queuing Penalty (veh)	5	39	0	13	30						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			1	3		0	8	0	0		
Queuing Penalty (veh)			5	4		1	2	0	0		

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	R	<	R	T
Maximum Queue (ft)	161	178	210	296	242	217	234	475
Average Queue (ft)	58	67	72	100	10	138	180	118
95th Queue (ft)	124	140	174	228	93	216	261	373
Link Distance (ft)	456	456	334	334	334	145	145	915
Upstream Blk Time (%)				0	0	12	30	
Queuing Penalty (veh)				0	0	0	0	
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	152	168	215	234	266	206	317	394	340	670	340	144
Average Queue (ft)	63	83	116	124	130	113	143	233	207	322	172	63
95th Queue (ft)	117	135	188	197	218	190	254	345	369	604	348	119
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)				0	0							
Queuing Penalty (veh)				0	0							
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)			0	0	1	9	9		0	15	0	
Queuing Penalty (veh)			0	1	2	28	16		2	86	2	

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	156	11
Average Queue (ft)	71	0
95th Queue (ft)	130	11
Link Distance (ft)	229	229
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	202	187	159	205	166	141	144	121
Average Queue (ft)	95	85	91	69	63	60	68	54
95th Queue (ft)	174	164	157	144	131	112	121	97
Link Distance (ft)	211	211		1338	1338		800	
Upstream Blk Time (%)	0	0						
Queuing Penalty (veh)	1	1						
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)			2	0				
Queuing Penalty (veh)			5	0				

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

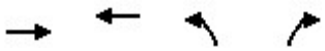
Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	611	180	238	115	123	199	72
Average Queue (ft)	255	136	174	45	43	101	35
95th Queue (ft)	537	225	259	99	101	168	61
Link Distance (ft)	1398		211	211	211	1120	1120
Upstream Blk Time (%)			5				
Queuing Penalty (veh)			14				
Storage Bay Dist (ft)		155					
Storage Blk Time (%)	16	1					
Queuing Penalty (veh)	59	6					

Zone Summary

Zone wide Queuing Penalty: 460

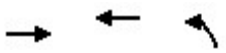
Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB
Directions Served	LT	TR	L	T
Maximum Queue (ft)	64	65	31	61
Average Queue (ft)	37	25	6	32
95th Queue (ft)	55	51	26	47
Link Distance (ft)	1196	1196		263
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			100	
Storage Blk Time (%)				
Queuing Penalty (veh)				



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	249	262	129	461
v/c Ratio	0.33	0.19	0.20	0.40
Control Delay	17.3	15.6	19.7	2.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	17.3	15.6	19.7	2.8
Queue Length 50th (ft)	55	30	30	10
Queue Length 95th (ft)	140	68	87	51
Internal Link Dist (ft)	795	110	1248	
Turn Bay Length (ft)			400	
Base Capacity (vph)	1130	2145	1082	1170
Starvation Cap Reductn	0	286	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.22	0.14	0.12	0.39

Intersection Summary



Lane Group	EBT	WBT	NBL
Lane Group Flow (vph)	711	250	57
v/c Ratio	0.53	0.31	0.18
Control Delay	12.5	17.9	19.4
Queue Delay	0.0	0.0	0.0
Total Delay	12.5	17.9	19.4
Queue Length 50th (ft)	75	30	12
Queue Length 95th (ft)	136	69	44
Internal Link Dist (ft)	110	349	980
Turn Bay Length (ft)			
Base Capacity (vph)	3022	2276	470
Starvation Cap Reductn	534	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.29	0.11	0.12

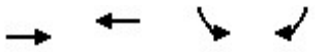
Intersection Summary

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	5	160	134	97	149	283	14	335
v/c Ratio	0.02	0.32	0.35	0.19	0.38	0.26	0.06	0.40
Control Delay	24.8	4.3	22.2	0.8	22.2	10.7	24.6	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.8	4.3	22.2	0.8	22.2	10.7	24.6	19.0
Queue Length 50th (ft)	1	0	29	0	32	31	3	37
Queue Length 95th (ft)	12	17	99	0	108	165	22	105
Internal Link Dist (ft)	1255		1856			1215		1576
Turn Bay Length (ft)					550		120	
Base Capacity (vph)	450	702	658	723	644	1358	298	2097
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.23	0.20	0.13	0.23	0.21	0.05	0.16

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Group Flow (vph)	191	273	8	162	50
v/c Ratio	0.13	0.21	0.01	0.10	0.07
Control Delay	4.6	2.0	10.1	1.8	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	4.6	2.0	10.1	1.8	8.0
Queue Length 50th (ft)	0	0	0	0	0
Queue Length 95th (ft)	70	35	10	31	29
Internal Link Dist (ft)	1867			481	560
Turn Bay Length (ft)		175	100		
Base Capacity (vph)	1755	1507	851	1859	1533
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.11	0.18	0.01	0.09	0.03

Intersection Summary



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	177	189	35	59
v/c Ratio	0.32	0.34	0.09	0.15
Control Delay	14.3	12.0	16.4	7.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.3	12.0	16.4	7.3
Queue Length 50th (ft)	31	25	6	0
Queue Length 95th (ft)	81	74	27	23
Internal Link Dist (ft)	481	1255	1954	
Turn Bay Length (ft)				70
Base Capacity (vph)	1190	1161	899	833
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.15	0.16	0.04	0.07

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	33	86	370	138	227	212
v/c Ratio	0.10	0.13	0.50	0.20	0.41	0.15
Control Delay	24.0	3.3	15.7	4.0	18.7	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	3.3	15.7	4.0	18.7	2.3
Queue Length 50th (ft)	5	0	50	0	32	0
Queue Length 95th (ft)	38	21	203	32	146	40
Internal Link Dist (ft)	1189		984			663
Turn Bay Length (ft)	165			410	400	
Base Capacity (vph)	792	1033	1385	1209	984	1707
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.08	0.27	0.11	0.23	0.12

Intersection Summary

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	97	153	65	56
Average Queue (ft)	40	64	20	17
95th Queue (ft)	86	116	50	42
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	1			
Queuing Penalty (veh)	2			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	102	57	92	86	71
Average Queue (ft)	46	18	37	39	30
95th Queue (ft)	84	46	76	69	61
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	0			0	0
Queuing Penalty (veh)	0			0	0
Storage Bay Dist (ft)		100			
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	45	46	55	76	25	66	49	50	80	51
Average Queue (ft)	11	18	20	25	3	27	17	9	36	14
95th Queue (ft)	36	39	47	55	17	57	43	33	66	38
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	71	90	78	78	91	32	34	148	163	64	62
Average Queue (ft)	10	23	28	14	26	5	8	44	88	13	23
95th Queue (ft)	40	62	65	52	71	22	30	108	144	42	50
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)			0	0	0						
Queuing Penalty (veh)			0	0	0						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			0	0							
Queuing Penalty (veh)			0	0							

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	<	R	T
Maximum Queue (ft)	26	32	18	28	175	127	26
Average Queue (ft)	2	3	1	2	84	58	1
95th Queue (ft)	14	17	8	13	153	94	12
Link Distance (ft)	456	456	327	327	138	138	890
Upstream Blk Time (%)					4	0	
Queuing Penalty (veh)					0	0	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	48	68	79	92	60	53	81	115	32	63	50	41
Average Queue (ft)	12	31	21	44	23	21	32	50	3	29	15	13
95th Queue (ft)	38	60	58	82	50	47	64	94	18	56	38	39
Link Distance (ft)			327	327			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)							0					
Queuing Penalty (veh)							0					

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	33
Average Queue (ft)	5
95th Queue (ft)	25
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	74	118	48	67	48	64	122	77
Average Queue (ft)	30	50	11	31	14	18	57	34
95th Queue (ft)	63	95	36	57	35	50	101	60
Link Distance (ft)	211	211		1417	1417		800	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	106	54	90	82	88	42	63
Average Queue (ft)	40	18	37	25	16	13	30
95th Queue (ft)	83	42	76	62	57	38	52
Link Distance (ft)	1539		211	211	211	1120	1120
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		155					
Storage Blk Time (%)	0						
Queuing Penalty (veh)	0						

Zone Summary

Zone wide Queuing Penalty: 3

3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

To SR 49

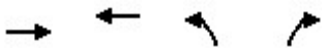
Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	660	21	151	530
v/c Ratio	0.57	0.09	0.18	0.69
Control Delay	14.9	25.1	8.7	18.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.9	25.1	8.7	18.8
Queue Length 50th (ft)	63	5	22	90
Queue Length 95th (ft)	160	28	61	#362
Internal Link Dist (ft)	1150		216	362
Turn Bay Length (ft)		100		
Base Capacity (vph)	1963	416	1574	1041
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.34	0.05	0.10	0.51

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	483	298	183	391
v/c Ratio	0.49	0.57	0.44	0.41
Control Delay	18.5	16.6	23.4	8.7
Queue Delay	0.0	0.0	0.0	0.1
Total Delay	18.5	16.6	23.4	8.8
Queue Length 50th (ft)	62	48	47	57
Queue Length 95th (ft)	130	135	124	130
Internal Link Dist (ft)	170	436		216
Turn Bay Length (ft)			100	
Base Capacity (vph)	2018	1027	616	1624
Starvation Cap Reductn	0	0	0	377
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.24	0.29	0.30	0.31

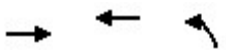
Intersection Summary



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	417	798	191	276
v/c Ratio	0.77	0.71	0.58	0.28
Control Delay	35.0	26.7	35.7	3.4
Queue Delay	0.0	51.6	0.0	0.0
Total Delay	35.0	78.3	35.7	3.4
Queue Length 50th (ft)	173	166	83	14
Queue Length 95th (ft)	#325	266	151	48
Internal Link Dist (ft)	795	110	1248	
Turn Bay Length (ft)			400	
Base Capacity (vph)	673	1286	646	985
Starvation Cap Reductn	0	580	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.62	1.13	0.30	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBL
Lane Group Flow (vph)	645	743	197
v/c Ratio	0.63	0.67	0.68
Control Delay	21.0	21.8	39.2
Queue Delay	0.1	0.0	0.0
Total Delay	21.0	21.8	39.2
Queue Length 50th (ft)	100	124	63
Queue Length 95th (ft)	166	200	#189
Internal Link Dist (ft)	110	349	980
Turn Bay Length (ft)			
Base Capacity (vph)	2344	1496	289
Starvation Cap Reductn	506	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.35	0.50	0.68

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	72	231	67	73	203	702	146	533
v/c Ratio	0.33	0.39	0.31	0.19	0.65	0.84	0.82	0.40
Control Delay	36.9	3.8	36.0	1.1	40.3	32.1	71.8	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.9	3.8	36.0	1.1	40.3	32.1	71.8	20.9
Queue Length 50th (ft)	32	0	30	0	90	300	71	103
Queue Length 95th (ft)	74	28	68	0	166	#569	#188	164
Internal Link Dist (ft)	1255		1856			1215		1576
Turn Bay Length (ft)					550		120	
Base Capacity (vph)	270	647	397	526	386	873	179	1336
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.36	0.17	0.14	0.53	0.80	0.82	0.40

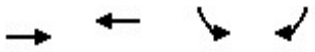
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Group Flow (vph)	350	159	14	417	401
v/c Ratio	0.54	0.24	0.05	0.58	0.59
Control Delay	14.8	3.5	20.0	12.8	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	3.5	20.0	12.8	19.5
Queue Length 50th (ft)	56	0	3	70	59
Queue Length 95th (ft)	156	29	19	117	#285
Internal Link Dist (ft)	1867			481	560
Turn Bay Length (ft)		175	100		
Base Capacity (vph)	1404	1232	321	1752	675
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.25	0.13	0.04	0.24	0.59

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	389	301	172	250
v/c Ratio	0.73	0.64	0.50	0.49
Control Delay	29.0	24.4	27.8	7.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	29.0	24.4	27.8	7.4
Queue Length 50th (ft)	114	79	53	0
Queue Length 95th (ft)	#274	168	119	53
Internal Link Dist (ft)	481	1255	1385	
Turn Bay Length (ft)				70
Base Capacity (vph)	685	699	507	632
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.57	0.43	0.34	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	199	379	448	85	198	500
v/c Ratio	0.61	0.44	0.75	0.15	0.56	0.44
Control Delay	34.9	6.4	27.6	4.9	30.3	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.9	6.4	27.6	4.9	30.3	7.2
Queue Length 50th (ft)	67	29	145	0	67	84
Queue Length 95th (ft)	#178	99	283	27	147	140
Internal Link Dist (ft)	1193		1002			683
Turn Bay Length (ft)	165			410	400	
Base Capacity (vph)	413	1034	932	833	583	1576
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.37	0.48	0.10	0.34	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	117	136	108	107
Average Queue (ft)	82	58	50	45
95th Queue (ft)	117	110	91	86
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	11			
Queuing Penalty (veh)	31			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	144	97	179	132	110
Average Queue (ft)	78	26	80	79	63
95th Queue (ft)	137	69	144	117	104
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	1			4	1
Queuing Penalty (veh)	3			5	2
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	3		
Queuing Penalty (veh)		0	6		

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	49	128	128	169	27	250	140	165	210	161
Average Queue (ft)	18	53	58	87	2	99	72	70	111	62
95th Queue (ft)	44	102	106	155	14	186	134	141	177	122
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)		0	0	0						
Queuing Penalty (veh)		0	0	1						
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)						4	1			
Queuing Penalty (veh)						9	3			

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	177	188	102	189	177	92	164	150	167	101	106
Average Queue (ft)	108	134	69	77	99	32	71	52	95	29	49
95th Queue (ft)	186	205	107	173	179	70	128	113	149	72	86
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	1	5	3	6	7						
Queuing Penalty (veh)	4	18	0	26	28						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			3	6		0	3		0		
Queuing Penalty (veh)			11	8		1	1		0		

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	R	<	R	T
Maximum Queue (ft)	173	190	262	339	169	213	236	576
Average Queue (ft)	79	84	81	106	15	139	187	176
95th Queue (ft)	151	162	201	251	128	225	259	589
Link Distance (ft)	456	456	334	334	334	145	145	915
Upstream Blk Time (%)			0	0	0	13	34	2
Queuing Penalty (veh)			0	1	1	0	0	0
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	146	151	210	224	262	202	320	394	340	623	340	146
Average Queue (ft)	68	86	119	129	118	107	139	232	194	290	162	58
95th Queue (ft)	120	134	184	194	208	181	262	356	348	490	337	113
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)					0							0
Queuing Penalty (veh)					0							0
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)			0	0	0	8	8		0	12	0	
Queuing Penalty (veh)			0	0	1	25	13		1	68	2	

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	138
Average Queue (ft)	59
95th Queue (ft)	110
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	205	199	162	208	183	126	162	129
Average Queue (ft)	97	92	95	72	65	57	68	55
95th Queue (ft)	174	183	163	153	130	104	128	101
Link Distance (ft)	211	211		1338	1338		800	
Upstream Blk Time (%)	0	1						
Queuing Penalty (veh)	1	2						
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)			3	0			0	
Queuing Penalty (veh)			7	1			0	

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

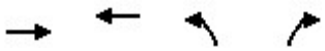
Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	475	180	236	142	132	188	72
Average Queue (ft)	211	124	165	45	42	95	34
95th Queue (ft)	394	220	249	105	103	161	59
Link Distance (ft)	1398		211	211	211	1120	1120
Upstream Blk Time (%)			4				
Queuing Penalty (veh)			11				
Storage Bay Dist (ft)		155					
Storage Blk Time (%)	12	2					
Queuing Penalty (veh)	44	8					

Zone Summary

Zone wide Queuing Penalty: 344

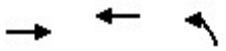
Intersection: 3: E. Bennett St & Tinloy St/SR 49 WB Off-Ramp

Movement	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	TR
Maximum Queue (ft)	94	82	31	58	20
Average Queue (ft)	51	39	11	32	1
95th Queue (ft)	79	64	34	48	10
Link Distance (ft)	1196	1196		264	402
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)					
Queuing Penalty (veh)					



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	177	362	79	139
v/c Ratio	0.30	0.31	0.16	0.16
Control Delay	15.1	13.2	17.0	1.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	15.1	13.2	17.0	1.8
Queue Length 50th (ft)	34	37	16	0
Queue Length 95th (ft)	87	78	52	17
Internal Link Dist (ft)	795	110	1248	
Turn Bay Length (ft)			400	
Base Capacity (vph)	1310	2534	1271	1203
Starvation Cap Reductn	0	256	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.14	0.16	0.06	0.12

Intersection Summary



Lane Group	EBT	WBT	NBL
Lane Group Flow (vph)	277	318	51
v/c Ratio	0.34	0.38	0.17
Control Delay	13.9	14.3	12.7
Queue Delay	0.0	0.0	0.0
Total Delay	13.9	14.3	12.7
Queue Length 50th (ft)	24	28	6
Queue Length 95th (ft)	53	60	28
Internal Link Dist (ft)	110	349	980
Turn Bay Length (ft)			
Base Capacity (vph)	3461	2328	433
Starvation Cap Reductn	73	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.08	0.14	0.12

Intersection Summary

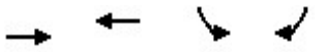
Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	38	160	45	54	100	316	109	341
v/c Ratio	0.10	0.28	0.12	0.10	0.23	0.37	0.28	0.22
Control Delay	24.0	3.1	23.6	0.4	22.0	15.9	27.1	16.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	3.1	23.6	0.4	22.0	15.9	27.1	16.0
Queue Length 50th (ft)	9	0	10	0	22	60	25	34
Queue Length 95th (ft)	39	19	44	0	77	174	#107	97
Internal Link Dist (ft)	1255		1856			1215		1576
Turn Bay Length (ft)					550		120	
Base Capacity (vph)	599	896	844	862	826	1371	397	2249
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.18	0.05	0.06	0.12	0.23	0.27	0.15

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Group Flow (vph)	142	45	3	126	64
v/c Ratio	0.21	0.08	0.01	0.16	0.07
Control Delay	8.6	4.3	11.3	5.3	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.6	4.3	11.3	5.3	8.4
Queue Length 50th (ft)	10	0	0	9	4
Queue Length 95th (ft)	54	15	5	25	30
Internal Link Dist (ft)	1867			481	560
Turn Bay Length (ft)		175	100		
Base Capacity (vph)	1781	1516	556	1863	1289
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.08	0.03	0.01	0.07	0.05

Intersection Summary



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	156	87	43	80
v/c Ratio	0.27	0.16	0.10	0.18
Control Delay	12.8	9.9	14.3	6.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.8	9.9	14.3	6.1
Queue Length 50th (ft)	27	9	8	0
Queue Length 95th (ft)	65	36	28	24
Internal Link Dist (ft)	481	1255	1385	
Turn Bay Length (ft)				70
Base Capacity (vph)	1287	1262	991	921
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.12	0.07	0.04	0.09

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	47	27	291	26	122	465
v/c Ratio	0.09	0.04	0.28	0.03	0.20	0.32
Control Delay	17.7	3.9	11.5	6.2	15.5	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.7	3.9	11.5	6.2	15.5	3.5
Queue Length 50th (ft)	6	0	33	0	16	0
Queue Length 95th (ft)	38	10	137	13	74	103
Internal Link Dist (ft)	1233		1049			653
Turn Bay Length (ft)	165			410	400	
Base Capacity (vph)	1016	1204	1488	1269	1165	1800
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.02	0.20	0.02	0.10	0.26

Intersection Summary

Intersection: 1: Tinloy St /Tinloy St & Neal St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	112	178	83	83
Average Queue (ft)	80	77	33	33
95th Queue (ft)	118	144	71	68
Link Distance (ft)	93	1538	960	960
Upstream Blk Time (%)	10			
Queuing Penalty (veh)	29			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: SR 49 On-Ramp/Tinloy St & Auburn St

Movement	EB	WB	WB	SB	SB
Directions Served	TR	LT	T	LT	TR
Maximum Queue (ft)	143	55	119	106	99
Average Queue (ft)	73	16	49	55	43
95th Queue (ft)	129	45	97	93	83
Link Distance (ft)	135		897	99	99
Upstream Blk Time (%)	1			1	0
Queuing Penalty (veh)	2			1	0
Storage Bay Dist (ft)		100			
Storage Blk Time (%)			1		
Queuing Penalty (veh)			1		

Intersection: 8: Main St & Brunswick Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	R	L	L	TR
Maximum Queue (ft)	63	76	98	96	15	131	88	118	140	89
Average Queue (ft)	23	28	37	34	1	50	34	26	67	31
95th Queue (ft)	53	58	73	73	10	99	70	74	117	66
Link Distance (ft)	777	160	160	160		1486				1622
Upstream Blk Time (%)			0							
Queuing Penalty (veh)			0							
Storage Bay Dist (ft)					115		115	360	360	
Storage Blk Time (%)						0	0			
Queuing Penalty (veh)						0	0			

Intersection: 9: Maltman Dr/SR 49/20 WB Off-Ramp & Brunswick Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	T	TR	L	T	T	LT	R	L	L	T	R
Maximum Queue (ft)	145	162	99	133	124	60	102	145	162	59	56
Average Queue (ft)	40	70	52	32	47	20	50	39	85	16	29
95th Queue (ft)	99	139	89	93	103	51	83	97	140	45	52
Link Distance (ft)	160	160		103	103		1666			1351	
Upstream Blk Time (%)	0	0	1	1	1						
Queuing Penalty (veh)	0	1	0	1	1						
Storage Bay Dist (ft)			140			100		240	240		240
Storage Blk Time (%)			1	1			0				
Queuing Penalty (veh)			1	1			0				

Intersection: 10: Brunswick Rd & SR 49/20 EB On Ramp

Movement	EB	EB	WB	WB	WB	NB	NB	B52
Directions Served	T	TR	T	T	R	<	R	T
Maximum Queue (ft)	65	87	45	69	4	197	117	43
Average Queue (ft)	12	23	5	8	0	106	57	2
95th Queue (ft)	42	63	27	40	4	179	96	25
Link Distance (ft)	456	456	334	334	334	145	145	915
Upstream Blk Time (%)						4	0	
Queuing Penalty (veh)						0	0	
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Sutton Way & Brunswick Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	L	T	T	R	UL	T	TR	L	L	TR	L
Maximum Queue (ft)	57	80	100	98	128	94	99	154	95	160	116	61
Average Queue (ft)	16	33	40	54	55	43	44	65	29	85	44	23
95th Queue (ft)	46	62	81	88	95	79	82	116	66	139	84	54
Link Distance (ft)			334	334			1884	1884		1476		229
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			240	120			280		280	
Storage Blk Time (%)						0	0					
Queuing Penalty (veh)						0	0					

Intersection: 11: Sutton Way & Brunswick Rd

Movement	SB
Directions Served	T
Maximum Queue (ft)	78
Average Queue (ft)	30
95th Queue (ft)	65
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 22: SR 49 EB Ramps & Dorsey Dr

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	TR	L	LT	R
Maximum Queue (ft)	102	134	79	80	50	65	77	81
Average Queue (ft)	37	50	33	33	19	22	28	36
95th Queue (ft)	75	100	66	62	41	52	60	63
Link Distance (ft)	211	211		1338	1338		800	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			140			220		220
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 23: Dorsey Dr & Sr 49 WB Ramps

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	T	T	LT	R
Maximum Queue (ft)	116	69	149	63	53	84	58
Average Queue (ft)	45	20	63	25	13	36	25
95th Queue (ft)	88	49	114	57	43	69	49
Link Distance (ft)	1398		211	211	211	1120	1120
Upstream Blk Time (%)			0				
Queuing Penalty (veh)			0				
Storage Bay Dist (ft)		155					
Storage Blk Time (%)	0						
Queuing Penalty (veh)	0						

Zone Summary

Zone wide Queuing Penalty: 39

TECHNICAL LOS APPENDIX V

FOR

IDAHO-MARYLAND MINE PROJECT
TRAFFIC IMPACT ANALYSIS

Nevada County, CA

ROADWAY LEVEL OF SERVICE

Prepared For:

Rise Grass Valley Inc.

Prepared By:

KD Anderson & Associates, Inc.
3853 Taylor Road, Suite G
Loomis, CA 95650
(916) 660-1555

April 8, 2021

ROADWAY LEVEL OF SERVICE

EPAP PLUS PROJECT – CENTENNIAL

EPAP PLUS PROJECT – SR 49

CUMULATIVE

CUMULATIVE PLUS PROJECT – CENTENNIAL

CUMULATIVE PLUS PROJECT – SR 49

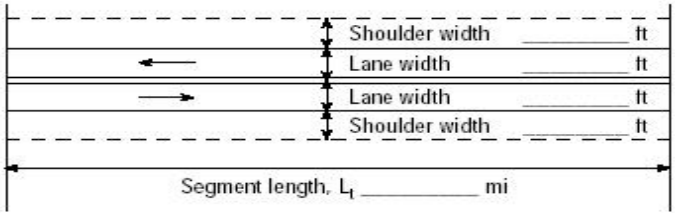
KDA

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines and SR 49/20*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period		Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.89*

No-passing zone *100%*

% Trucks and Buses , P_T *6 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *6*/mi

Analysis direction vol., V_d *532*veh/h

Opposing direction vol., V_o *549*veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *1.0*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.7*	*1.7*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.960*	*0.960*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.97*	*0.97*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*642*	*662*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*1.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.6 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.5 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*31.8 mi/h*
		Percent free flow speed, PFFS	*73.0 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.2*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.988*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.97*	*0.97*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*624*	*636*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*59.5*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*32.6*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*75.6*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.38*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1583*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1666*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*73.0*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*597.8*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.73*
Bicycle level of service (Exhibit 15-4)	*D*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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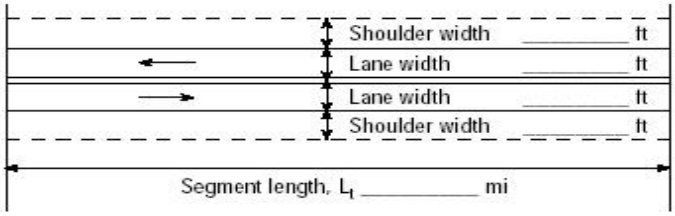
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines and SR 49/20*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.89*

No-passing zone *100%*

% Trucks and Buses , P_T *6 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *6*/mi

Analysis direction vol., V_d *549*veh/h

Opposing direction vol., V_o *532*veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *1.0*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.7*	*1.7*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.960*	*0.960*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.97*	*0.97*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*662*	*642*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*1.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.7 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.5 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*31.7 mi/h*
		Percent free flow speed, PFFS	*72.9 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.2*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.988*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.97*	*0.97*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*636*	*624*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*59.8*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*32.6*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*76.3*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.39*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1583*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1649*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*72.9*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*616.9*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.74*
Bicycle level of service (Exhibit 15-4)	*D*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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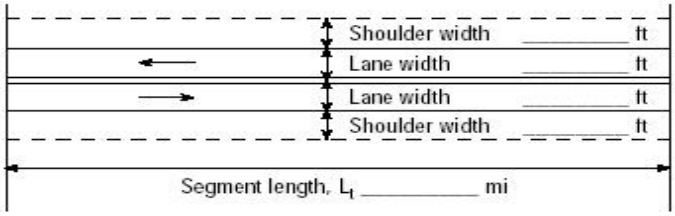
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines to Bennett*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period		Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.88*

No-passing zone *100%*

% Trucks and Buses , P_T *9 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *4*/mi

Analysis direction vol., V_d *404*veh/h

Opposing direction vol., V_o *651*veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *0.7*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.9*	*1.5*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.925*	*0.957*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.93*	*0.98*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*534*	*789*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*1.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.3 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*49.0 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*37.4 mi/h*
		Percent free flow speed, PFFS	*76.4 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.4*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.965*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.94*	*0.99*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*506*	*747*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*55.0*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*29.8*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*67.0*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.31*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1594*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1683*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*76.4*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*459.1*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*4.65*
Bicycle level of service (Exhibit 15-4)	*E*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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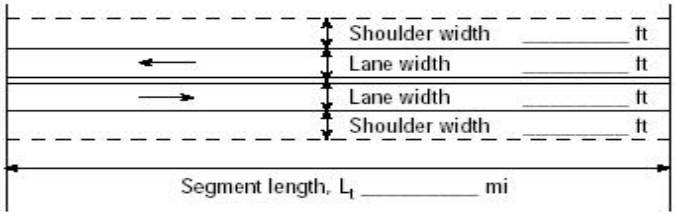
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines to Bennett*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.88*

No-passing zone *100%*

% Trucks and Buses , P_T *9 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *4*/mi

Analysis direction vol., V_d *651*veh/h

Opposing direction vol., V_o *404*veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *0.7*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.5*	*1.9*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.957*	*0.925*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.98*	*0.93*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*789*	*534*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*1.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*2.2 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*49.0 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*36.6 mi/h*
		Percent free flow speed, PFFS	*74.7 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.4*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.965*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.99*	*0.94*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*747*	*506*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*64.8*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*29.8*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*82.6*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.46*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1507*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1603*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*74.7*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*739.8*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*4.90*
Bicycle level of service (Exhibit 15-4)	*E*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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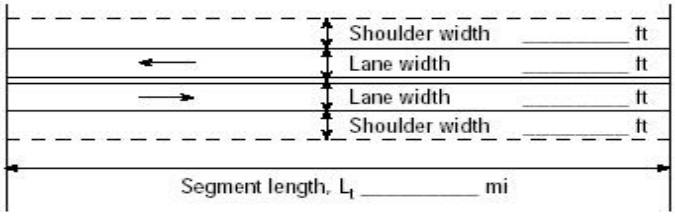
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*E. Bennett Rd EB*
Agency or Company	*Nevada County*	From/To	*west of Brunswick*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *62*veh/h

Opposing direction vol., V_o *91*veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.1*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.79*

No-passing zone *100%*

% Trucks and Buses , P_T *6 %*

% Recreational vehicles, P_R *2%*

Access points *mi* *3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*2.7*	*2.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.906*	*0.911*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.67*	*0.68*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*129*	*186*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*3.8 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*41.7 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*35.4 mi/h*
		Percent free flow speed, PFFS	*85.1 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.9*	*1.8*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.949*	*0.954*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.73*	*0.74*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*113*	*163*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*13.0*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*54.7*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*35.4*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*B*
Volume to capacity ratio, *v/c*	*0.08*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1127*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1249*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*85.1*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*78.5*
Effective width, Wv (Eq. 15-29) ft	*23.66*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.77*
Bicycle level of service (Exhibit 15-4)	*C*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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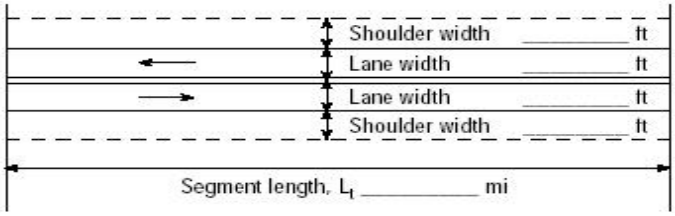
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*E. Bennett Rd WB*
Agency or Company	*Nevada County*	From/To	*west of Brunswick*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period		Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *91*veh/h

Opposing direction vol., V_o *62*veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.1*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.79*

No-passing zone *100*%

% Trucks and Buses , P_T *6* %

% Recreational vehicles, P_R *2*%

Access points *mi* *3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*2.6*	*2.7*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.911*	*0.906*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.68*	*0.67*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*186*	*129*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*2.9 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*41.7 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*36.3 mi/h*
		Percent free flow speed, PFFS	*87.3* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.8*	*1.9*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.954*	*0.949*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.74*	*0.73*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*163*	*113*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*18.0*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*54.7*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*50.3*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*B*
Volume to capacity ratio, *v/c*	*0.11*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1053*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1200*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*87.3*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*115.2*
Effective width, Wv (Eq. 15-29) ft	*21.63*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.43*
Bicycle level of service (Exhibit 15-4)	*C*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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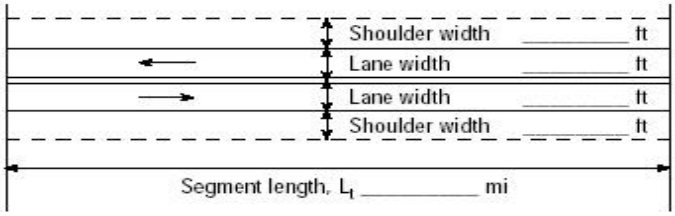
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Bennett to Project Access*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period		Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☐ Rolling

Grade Length *0.40* mi Up/down *5.0*

Peak-hour factor, PHF *0.87*

No-passing zone *100%*

% Trucks and Buses , P_T *6* %

% Recreational vehicles, P_R *0%*

Access points *mi* *2*/mi

Analysis direction vol., V_d *354*veh/h

Opposing direction vol., V_o *525*veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.4*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*5.0*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.807*	*0.994*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.84*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*600*	*607*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.8 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*46.9 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*35.7 mi/h*
		Percent free flow speed, PFFS	*76.2 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*407*	*603*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*45.7*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*36.5*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*60.4*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.35*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1364*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1693*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*76.2*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*406.9*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.43*
Bicycle level of service (Exhibit 15-4)	*E*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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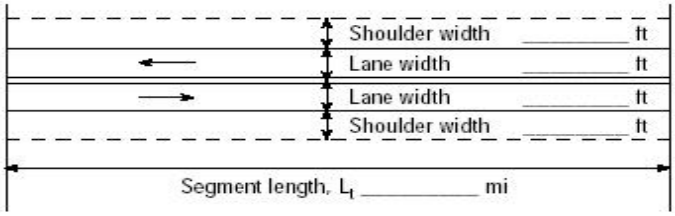
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Bennett to Project Access*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☐ Rolling

Grade Length *0.40* mi Up/down *-5.0*

Peak-hour factor, PHF *0.87*

No-passing zone *100%*

% Trucks and Buses , P_T *6 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *2*/mi

Analysis direction vol., V_d *525*veh/h

Opposing direction vol., V_o *354*veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.4*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*5.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.994*	*0.807*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*0.84*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*607*	*600*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.8 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*46.9 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*35.7 mi/h*
		Percent free flow speed, PFFS	*76.1 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*603*	*407*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*55.1*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*36.5*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*76.9*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.36*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1670*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*76.1*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*603.4*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.63*
Bicycle level of service (Exhibit 15-4)	*F*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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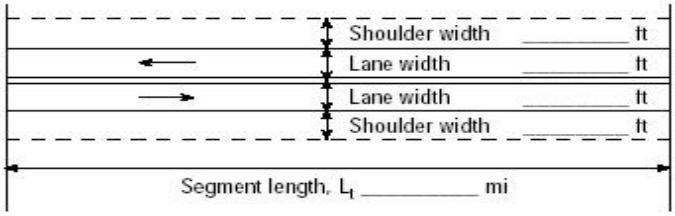
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Project Access to SR 174*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Analysis direction vol., V_d	*354*veh/h	Grade Length mi	Up/down
Opposing direction vol., V_o	*526*veh/h	Peak-hour factor, PHF	*0.80*
Shoulder width ft	*2.0*	No-passing zone	*100*%
Lane Width ft	*12.0*	% Trucks and Buses , P_T	*6* %
Segment Length mi	*0.7*	% Recreational vehicles, P_R	*0*%
		Access points *mi*	*10*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.9*	*1.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.949*	*0.965*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.92*	*0.98*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*507*	*695*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0* *mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6* *mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.5* *mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.5* *mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*44.9* *mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*34.1* *mi/h*
		Percent free flow speed, PFFS	*75.9* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.4*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.977*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.93*	*0.98*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*487*	*671*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*52.5*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*33.0*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*66.4*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.30*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1608*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1666*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*75.9*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*442.5*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.47*
Bicycle level of service (Exhibit 15-4)	*E*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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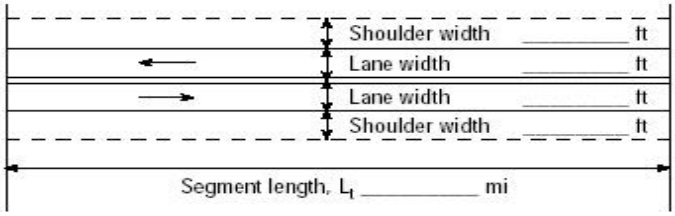
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Project Access to SR 174*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period		Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.80*

No-passing zone *100%*

Analysis direction vol., V_d *526*veh/h

Opposing direction vol., V_o *354*veh/h

% Trucks and Buses , P_T *6 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *10*/mi

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.7*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.6*	*1.9*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.965*	*0.949*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.98*	*0.92*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*695*	*507*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*2.2 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*44.9 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*33.4 mi/h*
		Percent free flow speed, PFFS	*74.3 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.4*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.977*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.98*	*0.93*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*671*	*487*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*61.1*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*33.0*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*80.2*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.41*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1524*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1577*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*74.3*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*657.5*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.67*
Bicycle level of service (Exhibit 15-4)	*F*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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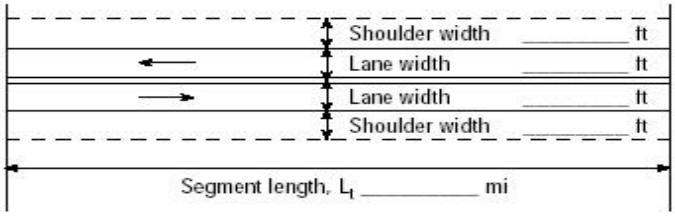
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*SR 174 EB*
Agency or Company	*Nevada County*	From/To	*Empire to SR 174*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Show North Arrow

☑ Class I highway ☐ Class II highway ☐ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.86*

No-passing zone *100%*

Analysis direction vol., V_d *289*veh/h

Opposing direction vol., V_o *527*veh/h

% Trucks and Buses , P_T *8* %

% Recreational vehicles, P_R *0%*

Access points *mi* *8*/mi

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *2.1*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*2.1*	*1.7*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.919*	*0.947*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.86*	*0.97*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*425*	*667*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.6 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*40.4 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*30.3 mi/h*
		Percent free flow speed, PFFS	*75.1 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.6*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.954*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.87*	*0.97*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*405*	*632*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*46.6*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*33.3*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*59.6*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*E*
Volume to capacity ratio, *v/c*	*0.25*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1562*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1666*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*75.1*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*336.0*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*6.02*
Bicycle level of service (Exhibit 15-4)	*F*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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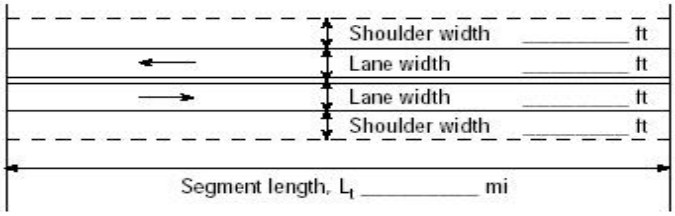
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*SR 174 WB*
Agency or Company	*Nevada County*	From/To	*Empire to SR 174*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Show North Arrow

☑ Class I highway ☐ Class II highway ☐ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.86*

No-passing zone *100%*

Analysis direction vol., V_d *527*veh/h

Opposing direction vol., V_o *289*veh/h

% Trucks and Buses , P_T *8* %

% Recreational vehicles, P_R *0%*

Access points *mi* *8*/mi

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *2.1*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.7*	*2.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.947*	*0.919*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.97*	*0.86*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*667*	*425*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*2.6 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*40.4 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*29.3 mi/h*
		Percent free flow speed, PFFS	*72.6 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.954*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.97*	*0.87*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*632*	*405*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*56.9*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*33.3*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*77.2*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*E*
Volume to capacity ratio, *v/c*	*0.39*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1417*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1483*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*72.6*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*612.8*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*6.33*
Bicycle level of service (Exhibit 15-4)	*F*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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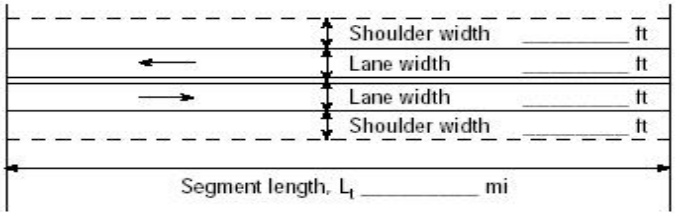
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines and SR 49/20*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *548*veh/h

Opposing direction vol., V_o *567*veh/h

Shoulder width ft *6.0*
Lane Width ft *12.0*
Segment Length mi *1.0*

Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.89*

No-passing zone *100*%

% Trucks and Buses , P_T *6* %

% Recreational vehicles, P_R *0*%

Access points *mi* *6*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.7*	*1.7*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.960*	*0.960*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.97*	*0.97*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*661*	*684*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*1.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.5 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.5 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*31.5 mi/h*
		Percent free flow speed, PFFS	*72.4* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.97*	*0.98*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*635*	*650*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*60.6*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*31.9*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*76.4*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.39*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1599*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1666*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*72.4*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*615.7*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.74*
Bicycle level of service (Exhibit 15-4)	*D*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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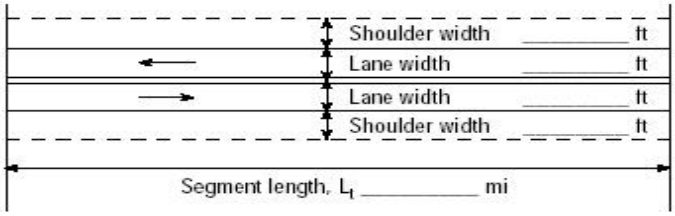
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines and SR 49/20*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *567* veh/h

Opposing direction vol., V_o *548* veh/h

Shoulder width ft *6.0*
Lane Width ft *12.0*
Segment Length mi *1.0*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling
Grade Length mi Up/down
Peak-hour factor, PHF *0.89*
No-passing zone *100%*
% Trucks and Buses , P_T *6 %*
% Recreational vehicles, P_R *0%*
Access points *mi* *6*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.7*	*1.7*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.960*	*0.960*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.97*	*0.97*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*684*	*661*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*1.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.6 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.5 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*31.4 mi/h*
		Percent free flow speed, PFFS	*72.3 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.98*	*0.97*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*650*	*635*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*61.0*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*31.9*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*77.1*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.40*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1583*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1666*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*72.3*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*637.1*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.76*
Bicycle level of service (Exhibit 15-4)	*D*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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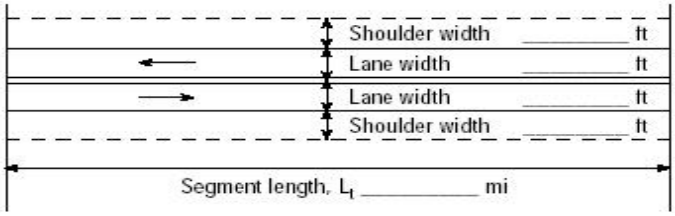
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines to Bennett*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.88*

No-passing zone *100%*

% Trucks and Buses , P_T *9 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *4*/mi

Analysis direction vol., V_d *425*veh/h

Opposing direction vol., V_o *679*veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *0.7*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.8*	*1.5*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.933*	*0.957*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.94*	*0.99*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*551*	*814*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*1.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.3 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*49.0 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*37.1 mi/h*
		Percent free flow speed, PFFS	*75.8 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.4*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.965*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.95*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*527*	*772*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*56.0*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*28.9*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*67.7*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.32*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1611*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*75.8*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*483.0*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*4.68*
Bicycle level of service (Exhibit 15-4)	*E*
Notes	
1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain. 2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F. 3. For the analysis direction only and for v>200 veh/h. 4. For the analysis direction only 5. Exhibit 15-20 provides coefficients a and b for Equation 15-10. 6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.	

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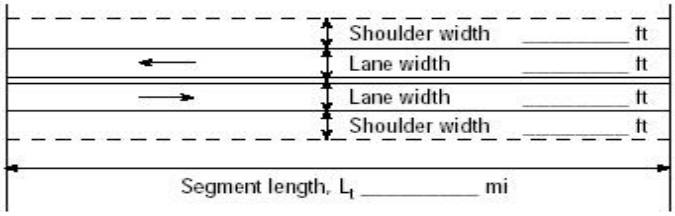
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines to Bennett*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *679*veh/h

Opposing direction vol., V_o *425*veh/h

Shoulder width ft *6.0*
Lane Width ft *12.0*
Segment Length mi *0.7*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling
Grade Length mi Up/down
Peak-hour factor, PHF *0.88*
No-passing zone *100%*
% Trucks and Buses , P_T *9 %*
% Recreational vehicles, P_R *0%*
Access points *mi* *4*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.5*	*1.8*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.957*	*0.933*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.99*	*0.94*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*814*	*551*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*1.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*2.1 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*49.0 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*36.3 mi/h*
		Percent free flow speed, PFFS	*74.1 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.4*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.965*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*0.95*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*772*	*527*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*65.7*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*28.9*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*82.9*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.48*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1523*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1603*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*74.1*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*771.6*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*4.92*
Bicycle level of service (Exhibit 15-4)	*E*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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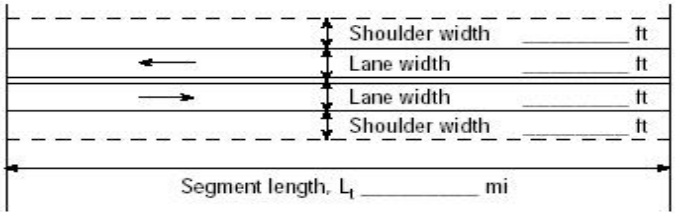
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*E. Bennett Rd EB*
Agency or Company	*Nevada County*	From/To	*west of Brunswick*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.79*

No-passing zone *100%*

% Trucks and Buses , P_T *6 %*

% Recreational vehicles, P_R *2%*

Access points *mi* *3*/mi

Analysis direction vol., V_d *68*veh/h

Opposing direction vol., V_o *104*veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.1*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*2.7*	*2.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.906*	*0.911*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.67*	*0.70*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*142*	*206*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*4.0 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*41.7 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*35.0 mi/h*
		Percent free flow speed, PFFS	*84.0 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.9*	*1.8*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.949*	*0.954*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.73*	*0.75*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*124*	*184*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*14.1*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*54.7*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*36.1*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*B*
Volume to capacity ratio, *v/c*	*0.08*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1159*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1281*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*84.0*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*86.1*
Effective width, Wv (Eq. 15-29) ft	*23.24*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.92*
Bicycle level of service (Exhibit 15-4)	*C*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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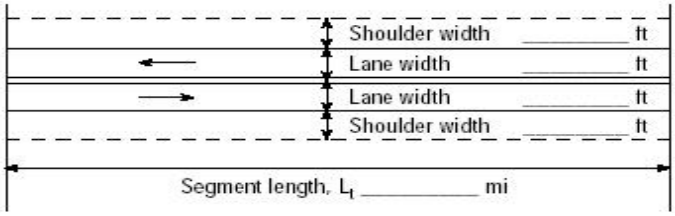
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*E. Bennett Rd WB*
Agency or Company	*Nevada County*	From/To	*west of Brunswick*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *104*veh/h

Opposing direction vol., V_o *68*veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.1*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.79*

No-passing zone *100*%

% Trucks and Buses , P_T *6* %

% Recreational vehicles, P_R *2*%

Access points *mi* *3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*2.6*	*2.7*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.911*	*0.906*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.70*	*0.67*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*206*	*142*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*3.1 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*41.7 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*35.9 mi/h*
		Percent free flow speed, PFFS	*86.1* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.8*	*1.9*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.954*	*0.949*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.75*	*0.73*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*184*	*124*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*20.0*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*54.7*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*52.7*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*B*
Volume to capacity ratio, *v/c*	*0.12*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1069*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1217*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*86.1*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*131.6*
Effective width, Wv (Eq. 15-29) ft	*20.72*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.69*
Bicycle level of service (Exhibit 15-4)	*D*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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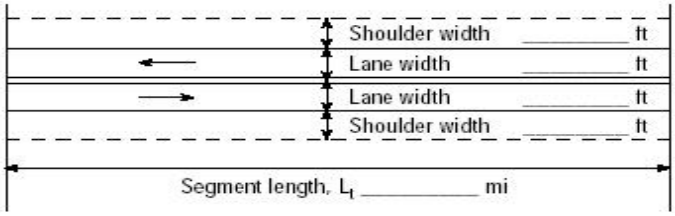
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Bennett to Project Access*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *365*veh/h

Opposing direction vol., V_o *537*veh/h

Shoulder width ft *2.0*
Lane Width ft *12.0*
Segment Length mi *0.4*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☐ Rolling

Grade Length *0.40* mi Up/down *5.0*
Peak-hour factor, PHF *0.87*
No-passing zone *100*%
% Trucks and Buses , P_T *6* %
% Recreational vehicles, P_R *0*%
Access points *mi* *2*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*4.9*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.809*	*0.994*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.85*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*610*	*621*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.8 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*46.9 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*35.6 mi/h*
		Percent free flow speed, PFFS	*75.8* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*420*	*617*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*47.2*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*35.9*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*61.7*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.36*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1364*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1693*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*75.8*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*419.5*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.45*
Bicycle level of service (Exhibit 15-4)	*E*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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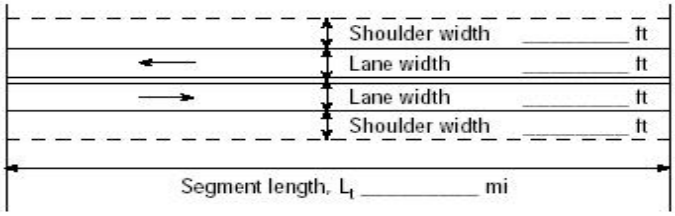
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Bennett to Project Access*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☐ Rolling
Grade Length *0.40* mi Up/down *-5.0*
Peak-hour factor, PHF *0.87*
No-passing zone *100*%

Analysis direction vol., V_d	*537*veh/h	% Trucks and Buses , P_T	*6* %
Opposing direction vol., V_o	*365*veh/h	% Recreational vehicles, P_R	*0*%
Shoulder width ft	*2.0*	Access points *mi*	*2*/mi
Lane Width ft	*12.0*		
Segment Length mi	*0.4*		

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*4.9*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.994*	*0.809*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*0.85*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*621*	*610*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.8 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*46.9 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*35.5 mi/h*
		Percent free flow speed, PFFS	*75.8* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*617*	*420*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*56.7*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*35.9*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*78.1*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.37*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1670*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*75.8*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*617.2*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.64*
Bicycle level of service (Exhibit 15-4)	*F*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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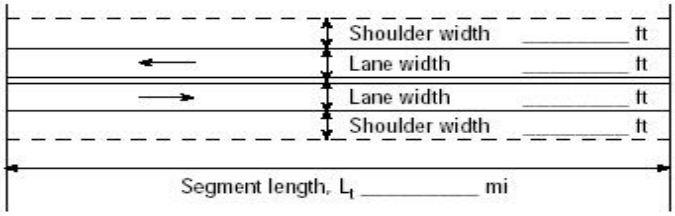
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Project Access to SR 174*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.80*

No-passing zone *100%*

% Trucks and Buses , P_T *6 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *10*/mi

Analysis direction vol., V_d *365*veh/h

Opposing direction vol., V_o *537*veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.7*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.9*	*1.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.949*	*0.965*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.93*	*0.98*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*517*	*710*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.5 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*44.9 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*33.9 mi/h*
		Percent free flow speed, PFFS	*75.5 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.4*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.977*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.93*	*0.98*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*502*	*685*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*53.7*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*32.4*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*67.4*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.30*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1608*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1683*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*75.5*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*456.3*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.49*
Bicycle level of service (Exhibit 15-4)	*E*
Notes	
1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain. 2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F. 3. For the analysis direction only and for v>200 veh/h. 4. For the analysis direction only 5. Exhibit 15-20 provides coefficients a and b for Equation 15-10. 6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.	

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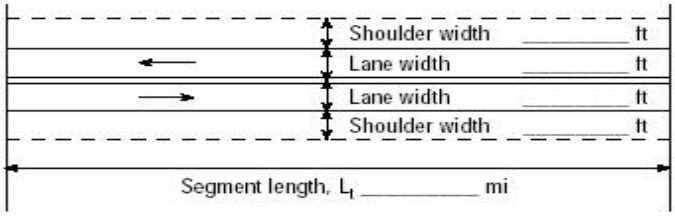
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Project Access to SR 174*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.80*

No-passing zone *100%*

% Trucks and Buses , P_T *6 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *10*/mi

Analysis direction vol., V_d *537*veh/h

Opposing direction vol., V_o *365*veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.7*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.6*	*1.9*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.965*	*0.949*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.98*	*0.93*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*710*	*517*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*2.2 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*44.9 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*33.2 mi/h*
		Percent free flow speed, PFFS	*74.0 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.4*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.977*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.98*	*0.93*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*685*	*502*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*62.2*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*32.4*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*80.9*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.42*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1541*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1613*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*74.0*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*671.3*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.68*
Bicycle level of service (Exhibit 15-4)	*F*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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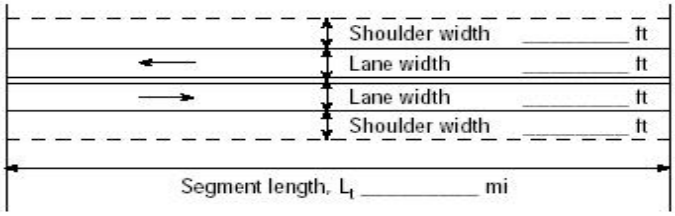
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*SR 174 EB*
Agency or Company	*Nevada County*	From/To	*Empire to SR 174*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Show North Arrow

☑ Class I highway ☐ Class II highway ☐ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.86*

No-passing zone *100%*

Analysis direction vol., V_d *292*veh/h

Opposing direction vol., V_o *529*veh/h

% Trucks and Buses , P_T *8* %

% Recreational vehicles, P_R *0%*

Access points *mi* *8*/mi

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *2.1*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*2.1*	*1.7*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.919*	*0.947*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.86*	*0.97*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*430*	*670*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.6 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*40.4 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*30.3 mi/h*
		Percent free flow speed, PFFS	*74.9 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.6*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.954*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.87*	*0.97*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*409*	*634*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*46.8*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*33.2*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*59.8*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*E*
Volume to capacity ratio, *v/c*	*0.25*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1562*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1666*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*74.9*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*339.5*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*6.03*
Bicycle level of service (Exhibit 15-4)	*F*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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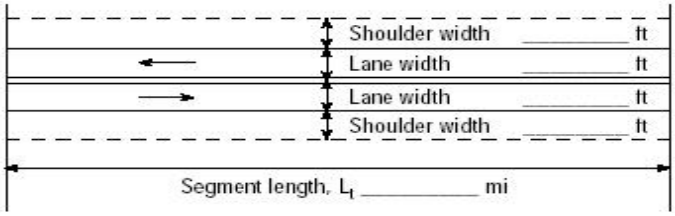
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*SR 174 WB*
Agency or Company	*Nevada County*	From/To	*Empire to SR 174*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *529*veh/h

Opposing direction vol., V_o *292*veh/h

Shoulder width ft *2.0*
Lane Width ft *12.0*
Segment Length mi *2.1*

☑ Class I highway ☐ Class II highway ☐ Class III highway

Terrain ☐ Level ☑ Rolling
Grade Length mi Up/down
Peak-hour factor, PHF *0.86*
No-passing zone *100*%
% Trucks and Buses , P_T *8* %
% Recreational vehicles, P_R *0*%
Access points *mi* *8*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.7*	*2.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.947*	*0.919*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.97*	*0.86*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*670*	*430*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*2.6 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*40.4 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*29.3 mi/h*
		Percent free flow speed, PFFS	*72.5* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.954*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.97*	*0.87*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*634*	*409*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*56.7*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*33.2*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*76.9*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*E*
Volume to capacity ratio, *v/c*	*0.39*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1417*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1499*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*72.5*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*615.1*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*6.33*
Bicycle level of service (Exhibit 15-4)	*F*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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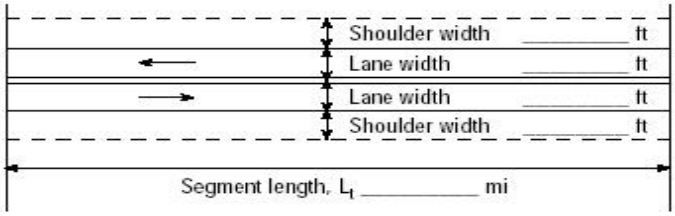
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines and SR 49/20*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP plus Project Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.89*

No-passing zone *100%*

% Trucks and Buses , P_T *6 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *6*/mi

Analysis direction vol., V_d *575*veh/h

Opposing direction vol., V_o *584*veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *1.0*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.7*	*1.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.960*	*0.965*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.97*	*0.98*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*694*	*694*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*1.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.5 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.5 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*31.2 mi/h*
		Percent free flow speed, PFFS	*71.7 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.98*	*0.98*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*659*	*670*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*61.9*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*30.7*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*77.1*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.41*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1608*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1666*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*71.7*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*646.1*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.77*
Bicycle level of service (Exhibit 15-4)	*D*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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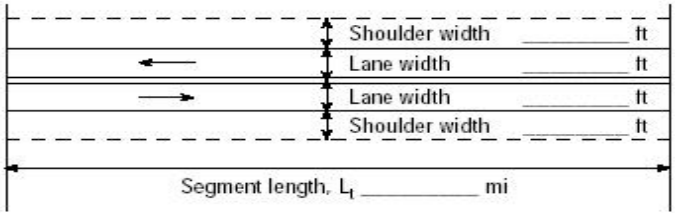
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines and SR 49/20*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP plus Project Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.89*

No-passing zone *100%*

% Trucks and Buses , P_T *6 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *6*/mi

Analysis direction vol., V_d *584*veh/h

Opposing direction vol., V_o *575*veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *1.0*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.6*	*1.7*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.965*	*0.960*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.98*	*0.97*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*694*	*694*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*1.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.5 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.5 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*31.2 mi/h*
		Percent free flow speed, PFFS	*71.7 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.98*	*0.98*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*670*	*659*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*62.9*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*30.7*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*78.4*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.41*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1608*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1666*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*71.7*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*656.2*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.77*
Bicycle level of service (Exhibit 15-4)	*D*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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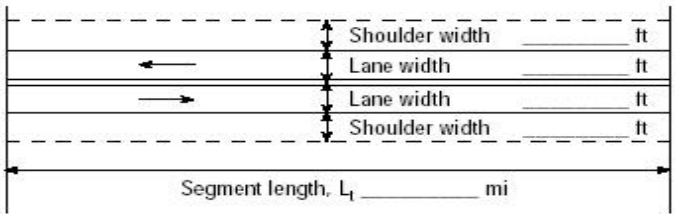
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines to Bennett*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP plus Project Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.88*

No-passing zone *100%*

% Trucks and Buses , P_T *9 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *4*/mi

Show North Arrow

Analysis direction vol., V_d *508*veh/h

Opposing direction vol., V_o *736*veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *0.7*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.7*	*1.4*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.941*	*0.965*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.97*	*0.99*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*632*	*875*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*1.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.2 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*49.0 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*36.1 mi/h*
		Percent free flow speed, PFFS	*73.7 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.2*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.982*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.97*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*606*	*836*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*61.3*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*26.7*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*72.5*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.37*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1624*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*73.7*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*577.3*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*4.77*
Bicycle level of service (Exhibit 15-4)	*E*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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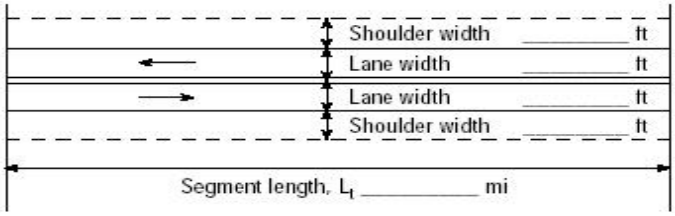
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines to Bennett*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP plus Project Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.88*

No-passing zone *100%*

Analysis direction vol., V_d *736*veh/h

% Trucks and Buses , P_T *9* %

Opposing direction vol., V_o *508*veh/h

% Recreational vehicles, P_R *0%*

Shoulder width ft *6.0*

Lane Width ft *12.0*

Access points *mi* *4*/mi

Segment Length mi *0.7*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.4*	*1.7*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.965*	*0.941*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.99*	*0.97*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*875*	*632*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*1.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.8 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*49.0 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*35.5 mi/h*
		Percent free flow speed, PFFS	*72.5 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.2*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.982*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*0.97*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*836*	*606*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*68.1*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*26.7*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*83.6*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.51*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1552*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1649*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*72.5*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*836.4*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*4.96*
Bicycle level of service (Exhibit 15-4)	*E*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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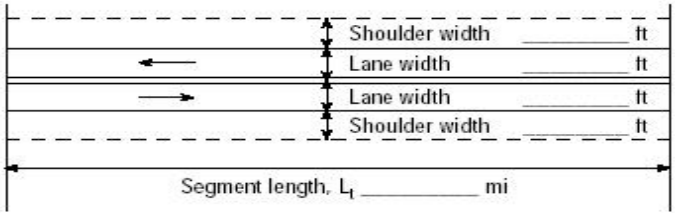
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*E. Bennett Rd EB*
Agency or Company	*Nevada County*	From/To	*west of Brunswick*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP plus Project Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☐ Rolling

Grade Length *0.25* mi Up/down *3.0*

Peak-hour factor, PHF *0.79*

No-passing zone *100*%

Show North Arrow

Analysis direction vol., V_d	*90*veh/h
Opposing direction vol., V_o	*112*veh/h
Shoulder width ft	*2.0*
Lane Width ft	*12.0*
Segment Length mi	*0.1*
% Trucks and Buses , P_T	*6* %
% Recreational vehicles, P_R	*2*%
Access points *mi*	*3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*2.6*	*1.7*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.912*	*0.960*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.79*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*158*	*148*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*3.2 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*41.7 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*36.1 mi/h*
		Percent free flow speed, PFFS	*86.7* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.994*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*114*	*143*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*13.1*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*55.2*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*37.6*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*B*
Volume to capacity ratio, *v/c*	*0.09*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1260*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1693*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*86.7*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*113.9*
Effective width, Wv (Eq. 15-29) ft	*21.70*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.41*
Bicycle level of service (Exhibit 15-4)	*C*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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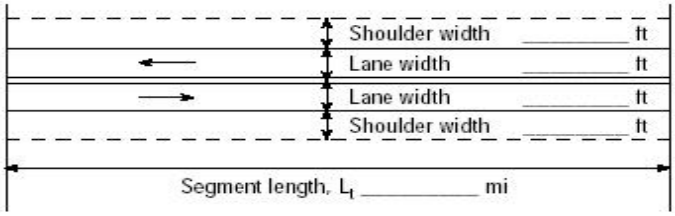
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*E. Bennett Rd WB*
Agency or Company	*Nevada County*	From/To	*west of Brunswick*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP plus Project Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *112*veh/h

Opposing direction vol., V_o *90*veh/h

Shoulder width ft *2.0*
Lane Width ft *12.0*
Segment Length mi *0.1*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling
Grade Length mi Up/down
Peak-hour factor, PHF *0.79*
No-passing zone *100*%
% Trucks and Buses , P_T *6* %
% Recreational vehicles, P_R *2*%
Access points *mi* *3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*2.5*	*2.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.916*	*0.911*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.70*	*0.68*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*221*	*184*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*3.7 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*41.7 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*34.8 mi/h*
		Percent free flow speed, PFFS	*83.5* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.8*	*1.8*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.954*	*0.954*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.76*	*0.74*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*195*	*161*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*21.1*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*59.0*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*53.4*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*B*
Volume to capacity ratio, *v/c*	*0.13*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1121*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1249*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*83.5*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*141.8*
Effective width, Wv (Eq. 15-29) ft	*20.16*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.85*
Bicycle level of service (Exhibit 15-4)	*D*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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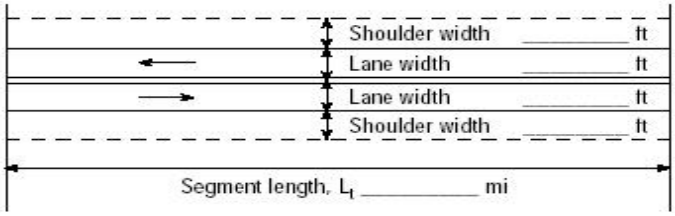
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Bennett to Project Access*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP plus Project Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☐ Rolling

Grade Length *0.40* mi Up/down *5.0*

Peak-hour factor, PHF *0.87*

No-passing zone *100*%

% Trucks and Buses , P_T *6* %

% Recreational vehicles, P_R *0*%

Access points *mi* *2*/mi

Show North Arrow

Analysis direction vol., V_d *450*veh/h

Opposing direction vol., V_o *601*veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.4*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*4.6*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.822*	*0.994*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.97*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*649*	*695*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0* *mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6* *mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.5* *mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.6* *mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*46.9* *mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*34.9* *mi/h*
		Percent free flow speed, PFFS	*74.5* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*518*	*691*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*54.4*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*32.5*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*68.3*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.38*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1381*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1693*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*74.5*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*517.2*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.55*
Bicycle level of service (Exhibit 15-4)	*F*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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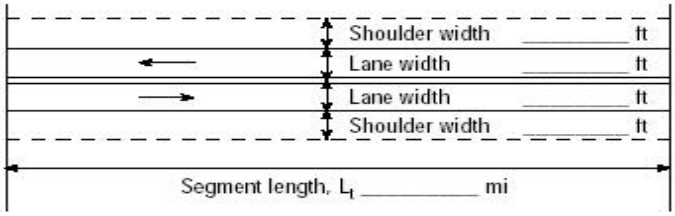
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Bennett to Project Access*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP plus Project Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☐ Rolling

Grade Length *0.40* mi Up/down *-5.0*

Peak-hour factor, PHF *0.87*

No-passing zone *100%*

% Trucks and Buses , P_T *6 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *2*/mi

Show North Arrow

Analysis direction vol., V_d *601*veh/h

Opposing direction vol., V_o *450*veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.4*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*4.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.994*	*0.822*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*0.97*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*695*	*649*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.7 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*46.9 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*34.8 mi/h*
		Percent free flow speed, PFFS	*74.2 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*691*	*518*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*61.5*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*32.5*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*80.1*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.41*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1680*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*74.2*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*690.8*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.70*
Bicycle level of service (Exhibit 15-4)	*F*
Notes	
1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain. 2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F. 3. For the analysis direction only and for v>200 veh/h. 4. For the analysis direction only 5. Exhibit 15-20 provides coefficients a and b for Equation 15-10. 6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.	

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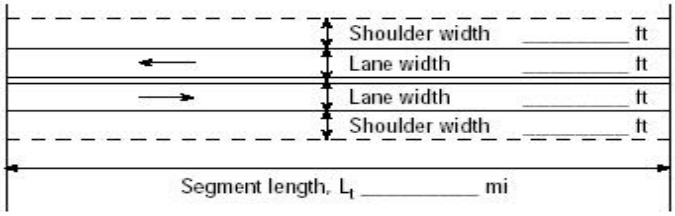
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Project Access to SR 174*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP plus Project Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *380*veh/h

Opposing direction vol., V_o *559*veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.7*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.80*

No-passing zone *100*%

% Trucks and Buses , P_T *6* %

% Recreational vehicles, P_R *0*%

Access points *mi* *10*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.8*	*1.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.954*	*0.965*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.94*	*0.98*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*530*	*739*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0* *mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6* *mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.5* *mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.4* *mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*44.9* *mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*33.7* *mi/h*
		Percent free flow speed, PFFS	*75.0* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.4*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.977*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.94*	*0.99*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*517*	*706*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*54.6*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*31.5*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*67.9*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.31*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1608*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1683*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*75.0*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*475.0*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.51*
Bicycle level of service (Exhibit 15-4)	*F*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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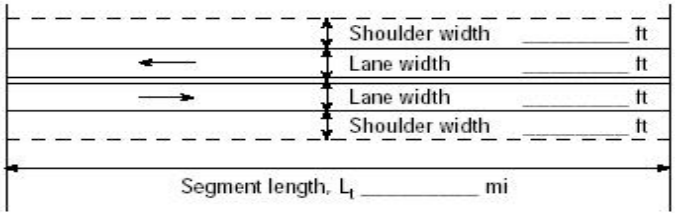
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Project Access to SR 174*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP plus Project Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *559*veh/h

Opposing direction vol., V_o *380*veh/h

Shoulder width ft *2.0*
Lane Width ft *12.0*
Segment Length mi *0.7*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☐ Rolling

Grade Length *0.25* mi Up/down *3.0*
Peak-hour factor, PHF *0.80*
No-passing zone *100*%
% Trucks and Buses , P_T *6* %
% Recreational vehicles, P_R *0*%
Access points *mi* *10*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.7*	*1.2*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.960*	*0.988*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*728*	*481*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0* *mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6* *mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.5* *mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*2.3* *mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*44.9* *mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*33.2* *mi/h*
		Percent free flow speed, PFFS	*73.9* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.92*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*760*	*475*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*64.6*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*31.3*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*83.9*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.43*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1581*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1581*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*73.9*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*698.8*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.71*
Bicycle level of service (Exhibit 15-4)	*F*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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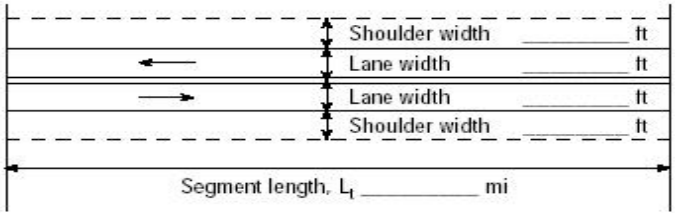
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*SR 174 EB*
Agency or Company	*Nevada County*	From/To	*Empire to SR 174*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP plus Project Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *296*veh/h

Opposing direction vol., V_o *535*veh/h

Shoulder width ft *2.0*
Lane Width ft *12.0*
Segment Length mi *2.1*

☑ Class I highway ☐ Class II highway ☐ Class III highway

Terrain ☐ Level ☑ Rolling
Grade Length mi Up/down
Peak-hour factor, PHF *0.86*
No-passing zone *100*%
% Trucks and Buses , P_T *8* %
% Recreational vehicles, P_R *0*%
Access points *mi* *8*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*2.1*	*1.7*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.919*	*0.947*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.86*	*0.97*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*435*	*677*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.6 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*40.4 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*30.2 mi/h*
		Percent free flow speed, PFFS	*74.8* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.6*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.954*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.87*	*0.97*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*415*	*641*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*46.9*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*32.9*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*59.8*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*E*
Volume to capacity ratio, *v/c*	*0.26*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1562*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1666*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*74.8*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*344.2*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*6.03*
Bicycle level of service (Exhibit 15-4)	*F*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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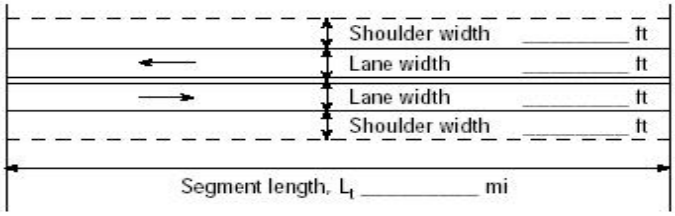
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*SR 174 WB*
Agency or Company	*Nevada County*	From/To	*Empire to SR 174*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP plus Project Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *535*veh/h

Opposing direction vol., V_o *296*veh/h

Shoulder width ft *2.0*
Lane Width ft *12.0*
Segment Length mi *2.1*

☑ Class I highway ☐ Class II highway ☐ Class III highway

Terrain ☐ Level ☑ Rolling
Grade Length mi Up/down
Peak-hour factor, PHF *0.86*
No-passing zone *100*%
% Trucks and Buses , P_T *8* %
% Recreational vehicles, P_R *0*%
Access points *mi* *8*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.7*	*2.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.947*	*0.919*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.97*	*0.86*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*677*	*435*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*2.5 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*40.4 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*29.2 mi/h*
		Percent free flow speed, PFFS	*72.3* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.954*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.97*	*0.87*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*641*	*415*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*58.2*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*32.9*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*78.2*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*E*
Volume to capacity ratio, *v/c*	*0.40*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1433*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1499*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*72.3*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*622.1*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*6.33*
Bicycle level of service (Exhibit 15-4)	*F*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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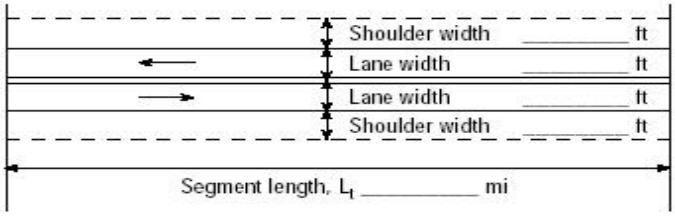
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines and SR 49/20*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP plus Project Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley SR 49*

Input Data



Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.89*

No-passing zone *100%*

Show North Arrow

Analysis direction vol., V_d	*583*veh/h	% Trucks and Buses , P_T	*6* %
Opposing direction vol., V_o	*592*veh/h	% Recreational vehicles, P_R	*0%*
Shoulder width ft	*6.0*	Access points *mi*	*6*/mi
Lane Width ft	*12.0*		
Segment Length mi	*1.0*		

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.6*	*1.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.965*	*0.965*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.98*	*0.98*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*693*	*703*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*1.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.5 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.5 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*31.2 mi/h*
		Percent free flow speed, PFFS	*71.7 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.98*	*0.98*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*668*	*679*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*62.8*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*30.1*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*77.7*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.41*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1608*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1683*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*71.7*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*655.1*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.77*
Bicycle level of service (Exhibit 15-4)	*D*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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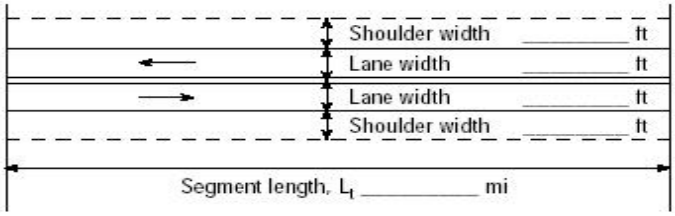
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines and SR 49/20*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP plus Project Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley SR 49*

Input Data



Analysis direction vol., V_d *592*veh/h

Opposing direction vol., V_o *583*veh/h

Shoulder width ft *6.0*
Lane Width ft *12.0*
Segment Length mi *1.0*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling
Grade Length mi Up/down
Peak-hour factor, PHF *0.89*
No-passing zone *100*%
% Trucks and Buses , P_T *6* %
% Recreational vehicles, P_R *0*%
Access points *mi* *6*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.6*	*1.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.965*	*0.965*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.98*	*0.98*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*703*	*693*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*1.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.5 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.5 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*31.1 mi/h*
		Percent free flow speed, PFFS	*71.6* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.98*	*0.98*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*679*	*668*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*62.8*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*30.1*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*78.0*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.41*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1608*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1666*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*71.6*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*665.2*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.78*
Bicycle level of service (Exhibit 15-4)	*D*
Notes	
1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain. 2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F. 3. For the analysis direction only and for v>200 veh/h. 4. For the analysis direction only 5. Exhibit 15-20 provides coefficients a and b for Equation 15-10. 6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.	

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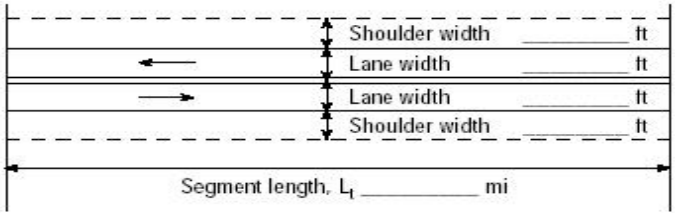
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines to Bennett*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP plus Project Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley SR 49*

Input Data



Analysis direction vol., V_d *508*veh/h

Opposing direction vol., V_o *736*veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *0.7*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.88*

No-passing zone *100%*

% Trucks and Buses , P_T *9 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *4*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.7*	*1.4*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.941*	*0.965*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.97*	*0.99*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*632*	*875*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*1.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.2 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*49.0 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*36.1 mi/h*
		Percent free flow speed, PFFS	*73.7 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.2*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.982*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.97*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*606*	*836*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*61.3*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*26.7*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*72.5*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.37*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1624*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*73.7*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*577.3*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*4.77*
Bicycle level of service (Exhibit 15-4)	*E*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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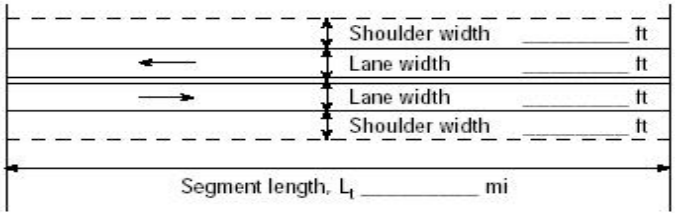
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines to Bennett*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP plus Project Peak Hour*	Analysis Year	*2019*

Project Description:

Input Data



Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.88*

No-passing zone *100%*

% Trucks and Buses , P_T *9 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *4*/mi

Analysis direction vol., V_d	*736*veh/h
Opposing direction vol., V_o	*508*veh/h
Shoulder width ft	*6.0*
Lane Width ft	*12.0*
Segment Length mi	*0.7*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.4*	*1.7*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.965*	*0.941*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.99*	*0.97*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*875*	*632*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*1.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.8 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*49.0 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*35.5 mi/h*
		Percent free flow speed, PFFS	*72.5 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.2*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.982*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*0.97*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*836*	*606*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*68.1*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*26.7*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*83.6*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.51*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1552*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1649*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*72.5*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*836.4*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*4.96*
Bicycle level of service (Exhibit 15-4)	*E*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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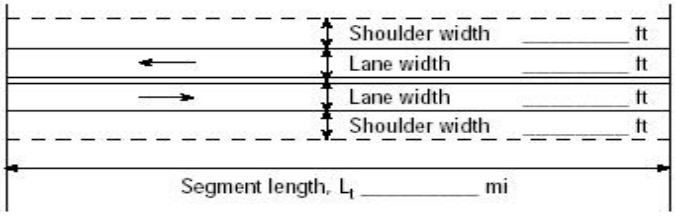
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*E. Bennett Rd EB*
Agency or Company	*Nevada County*	From/To	*west of Brunswick*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP plus Project Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley SR 49*

Input Data



Analysis direction vol., V_d *90*veh/h

Opposing direction vol., V_o *112*veh/h

Shoulder width ft *2.0*
Lane Width ft *12.0*
Segment Length mi *0.1*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☐ Rolling

Grade Length *0.25* mi Up/down *3.0*
Peak-hour factor, PHF *0.79*
No-passing zone *100*%
% Trucks and Buses , P_T *6* %
% Recreational vehicles, P_R *2*%
Access points *mi* *3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*2.6*	*1.7*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.912*	*0.960*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.79*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*158*	*148*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*3.2 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*41.7 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*36.1 mi/h*
		Percent free flow speed, PFFS	*86.7* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.994*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*114*	*143*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*13.1*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*55.2*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*37.6*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*B*
Volume to capacity ratio, *v/c*	*0.09*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1260*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1693*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*86.7*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*113.9*
Effective width, Wv (Eq. 15-29) ft	*21.70*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.41*
Bicycle level of service (Exhibit 15-4)	*C*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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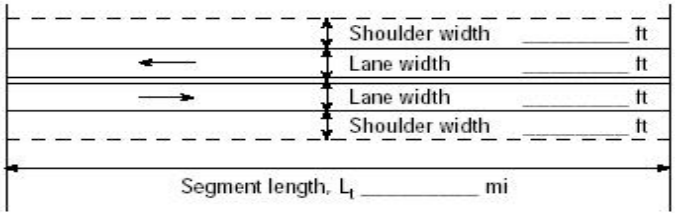
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*E. Bennett Rd WB*
Agency or Company	*Nevada County*	From/To	*west of Brunswick*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP plus Project Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley SR 49*

Input Data



Analysis direction vol., V_d *112*veh/h

Opposing direction vol., V_o *90*veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.1*

Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.79*

No-passing zone *100*%

% Trucks and Buses , P_T *6* %

% Recreational vehicles, P_R *2*%

Access points *mi* *3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*2.5*	*2.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.916*	*0.911*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.70*	*0.68*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*221*	*184*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*3.7 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*41.7 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*34.8 mi/h*
		Percent free flow speed, PFFS	*83.5* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.8*	*1.8*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.954*	*0.954*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.76*	*0.74*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*195*	*161*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*21.1*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*59.0*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*53.4*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*B*
Volume to capacity ratio, *v/c*	*0.13*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1121*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1249*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*83.5*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*141.8*
Effective width, Wv (Eq. 15-29) ft	*20.16*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.85*
Bicycle level of service (Exhibit 15-4)	*D*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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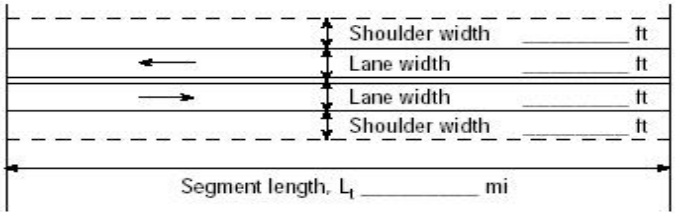
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Bennett to Project Access*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP plus Project Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley SR 49*

Input Data



Analysis direction vol., V_d *450*veh/h

Opposing direction vol., V_o *601*veh/h

Shoulder width ft *2.0*
Lane Width ft *12.0*
Segment Length mi *0.4*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☐ Rolling

Grade Length *0.40* mi Up/down *5.0*
Peak-hour factor, PHF *0.87*
No-passing zone *100*%
% Trucks and Buses , P_T *6* %
% Recreational vehicles, P_R *0*%
Access points *mi* *2*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*4.6*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.822*	*0.994*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.97*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*649*	*695*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0* *mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6* *mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.5* *mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.6* *mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*46.9* *mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*34.9* *mi/h*
		Percent free flow speed, PFFS	*74.5* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*518*	*691*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*54.4*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*32.5*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*68.3*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.38*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1381*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1693*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*74.5*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*517.2*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.55*
Bicycle level of service (Exhibit 15-4)	*F*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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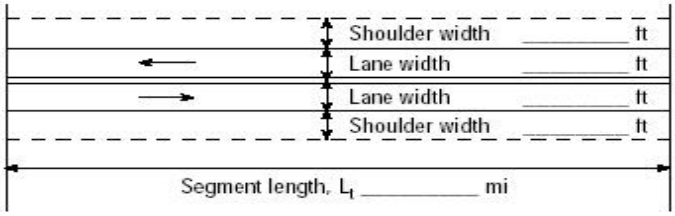
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Bennett to Project Access*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP plus Project Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley SR 49*

Input Data



Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☐ Rolling

Grade Length *0.40* mi Up/down *-5.0*

Peak-hour factor, PHF *0.87*

No-passing zone *100%*

% Trucks and Buses , P_T *6* %

% Recreational vehicles, P_R *0%*

Access points *mi* *2*/mi

Analysis direction vol., V_d *601*veh/h

Opposing direction vol., V_o *450*veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.4*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*4.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.994*	*0.822*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*0.97*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*695*	*649*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.7 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*46.9 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*34.8 mi/h*
		Percent free flow speed, PFFS	*74.2 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*691*	*518*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*61.5*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*32.5*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*80.1*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.41*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1680*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*74.2*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*690.8*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.70*
Bicycle level of service (Exhibit 15-4)	*F*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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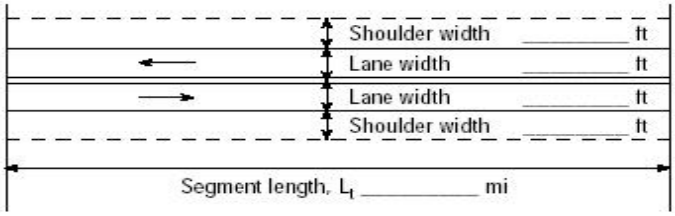
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Project Access to SR 174*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP plus Project Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley SR 49*

Input Data



Analysis direction vol., V_d *380*veh/h

Opposing direction vol., V_o *559*veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.7*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.80*

No-passing zone *100*%

% Trucks and Buses , P_T *6* %

% Recreational vehicles, P_R *0*%

Access points *mi* *10*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.8*	*1.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.954*	*0.965*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.94*	*0.98*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*530*	*739*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0* *mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6* *mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*2.5* *mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.4* *mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*44.9* *mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*33.7* *mi/h*
		Percent free flow speed, PFFS	*75.0* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.4*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.977*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.94*	*0.99*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*517*	*706*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*54.6*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*31.5*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*67.9*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.31*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1608*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1683*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*75.0*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*475.0*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.51*
Bicycle level of service (Exhibit 15-4)	*F*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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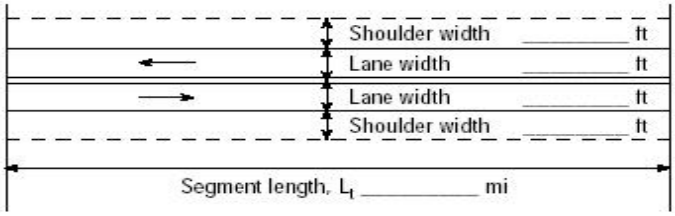
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Project Access to SR 174*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP plus Project Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley SR 49*

Input Data



Analysis direction vol., V_d *559*veh/h

Opposing direction vol., V_o *380*veh/h

Shoulder width ft *2.0*
Lane Width ft *12.0*
Segment Length mi *0.7*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☐ Rolling

Grade Length *0.25* mi Up/down *3.0*
Peak-hour factor, PHF *0.80*
No-passing zone *100*%
% Trucks and Buses , P_T *6* %
% Recreational vehicles, P_R *0*%
Access points *mi* *10*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.7*	*1.2*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.960*	*0.988*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*728*	*481*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0* *mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6* *mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.5* *mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*2.3* *mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*44.9* *mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*33.2* *mi/h*
		Percent free flow speed, PFFS	*73.9* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.92*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*760*	*475*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*64.6*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*31.3*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*83.9*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.43*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1581*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1581*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*73.9*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*698.8*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.71*
Bicycle level of service (Exhibit 15-4)	*F*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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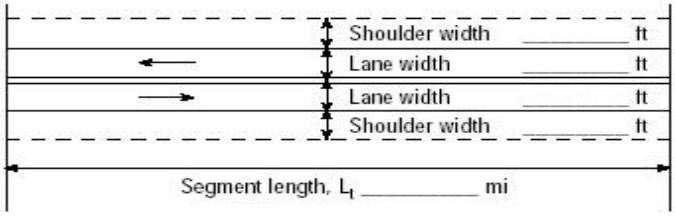
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*SR 174 EB*
Agency or Company	*Nevada County*	From/To	*Empire to SR 174*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP plus Project Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley SR 49*

Input Data



Analysis direction vol., V_d *296*veh/h

Opposing direction vol., V_o *535*veh/h

Shoulder width ft *2.0*
Lane Width ft *12.0*
Segment Length mi *2.1*

☑ Class I highway ☐ Class II highway ☐ Class III highway

Terrain ☐ Level ☑ Rolling
Grade Length mi Up/down
Peak-hour factor, PHF *0.86*
No-passing zone *100*%
% Trucks and Buses , P_T *8* %
% Recreational vehicles, P_R *0*%
Access points *mi* *8*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*2.1*	*1.7*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.919*	*0.947*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.86*	*0.97*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*435*	*677*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.6 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*40.4 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*30.2 mi/h*
		Percent free flow speed, PFFS	*74.8* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.6*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.954*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.87*	*0.97*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*415*	*641*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*46.9*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*32.9*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*59.8*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*E*
Volume to capacity ratio, *v/c*	*0.26*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1562*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1666*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*74.8*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*344.2*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*6.03*
Bicycle level of service (Exhibit 15-4)	*F*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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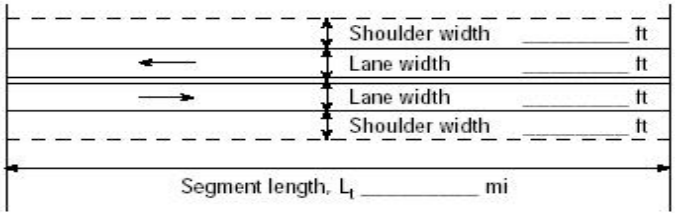
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*SR 174 WB*
Agency or Company	*Nevada County*	From/To	*Empire to SR 174*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*EPAP plus Project Peak Hour*	Analysis Year	*2019*

Project Description: *Rise Grass Valley SR 49*

Input Data



Analysis direction vol., V_d *535*veh/h

Opposing direction vol., V_o *296*veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *2.1*

☑ Class I highway ☐ Class II highway ☐ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.86*

No-passing zone *100*%

% Trucks and Buses , P_T *8* %

% Recreational vehicles, P_R *0*%

Access points *mi* *8*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.7*	*2.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.947*	*0.919*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.97*	*0.86*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*677*	*435*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*2.5 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*40.4 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*29.2 mi/h*
		Percent free flow speed, PFFS	*72.3* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.954*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.97*	*0.87*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*641*	*415*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*58.2*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*32.9*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*78.2*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*E*
Volume to capacity ratio, *v/c*	*0.40*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1433*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1499*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*72.3*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*622.1*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*6.33*
Bicycle level of service (Exhibit 15-4)	*F*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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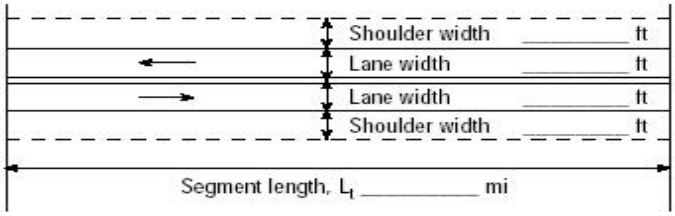
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines to SR 49/20*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Cumulative*

Project Description: *Rise Grass Valley 2 Lanes SB*

Input Data



Analysis direction vol., V_d *690*veh/h

Opposing direction vol., V_o *671*veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *1.0*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.89*

No-passing zone *100*%

% Trucks and Buses , P_T *6* %

% Recreational vehicles, P_R *0*%

Access points *mi* *6*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.4*	*1.5*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.977*	*0.971*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.99*	*0.99*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*802*	*784*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*1.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.2 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.5 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*29.9 mi/h*
		Percent free flow speed, PFFS	*68.8* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*775*	*754*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*67.9*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*26.4*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*81.3*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.47*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1634*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*68.8*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*775.3*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.86*
Bicycle level of service (Exhibit 15-4)	*D*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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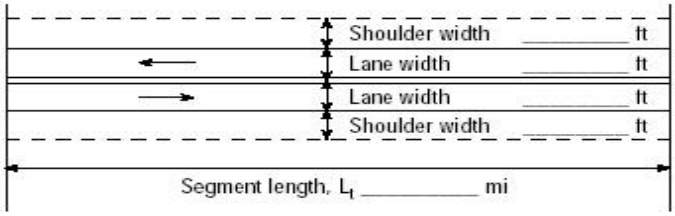
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines to SR 49/20*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Cumulative*

Project Description: *Rise Grass Valley - 2 lanes SB*

Input Data



Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.89*

No-passing zone *100%*

% Trucks and Buses , P_T *6 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *6*/mi

Analysis direction vol., V_d *671*veh/h

Opposing direction vol., V_o *690*veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *1.0*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.5*	*1.4*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.971*	*0.977*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.99*	*0.99*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*784*	*802*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*1.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.2 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.5 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*30.0 mi/h*
		Percent free flow speed, PFFS	*69.0 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*754*	*775*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*67.8*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*26.4*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*80.8*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.46*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1644*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*69.0*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*753.9*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.84*
Bicycle level of service (Exhibit 15-4)	*D*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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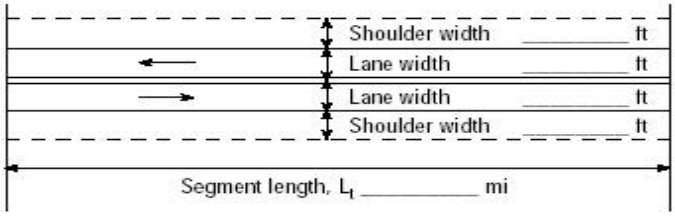
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines to Bennett*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*Peak Hour*	Analysis Year	*Cumulative*

Project Description: *Rise Grass Valley*

Input Data



Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.88*

No-passing zone *100%*

% Trucks and Buses , P_T *9 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *4*/mi

Analysis direction vol., V_d *804*veh/h

Opposing direction vol., V_o *507*veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *0.7*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.3*	*1.7*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.974*	*0.941*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*0.97*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*938*	*631*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*1.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.8 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*49.0 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*35.0 mi/h*
		Percent free flow speed, PFFS	*71.5 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.2*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.982*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*0.97*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*914*	*605*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*70.9*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*24.7*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*85.8*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.55*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1552*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1649*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*71.5*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*913.6*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.00*
Bicycle level of service (Exhibit 15-4)	*E*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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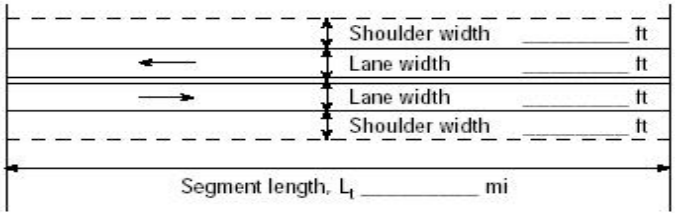
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines to Bennett*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*Peak Hour*	Analysis Year	*Cumulative*

Project Description: *Rise Grass Valley*

Input Data



Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☐ Rolling

Grade Length *0.25* mi Up/down *3.0*

Peak-hour factor, PHF *0.88*

No-passing zone *100*%

% Trucks and Buses , P_T *9* %

% Recreational vehicles, P_R *0*%

Access points *mi* *4*/mi

Analysis direction vol., V_d *507*veh/h

Opposing direction vol., V_o *804*veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *0.7*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.8*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.933*	*1.000*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*618*	*914*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*1.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.2 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*49.0 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*35.9 mi/h*
		Percent free flow speed, PFFS	*73.3* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.92*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*626*	*914*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*62.9*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*24.4*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*72.8*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.36*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1685*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1564*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*73.3*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*576.1*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*4.77*
Bicycle level of service (Exhibit 15-4)	*E*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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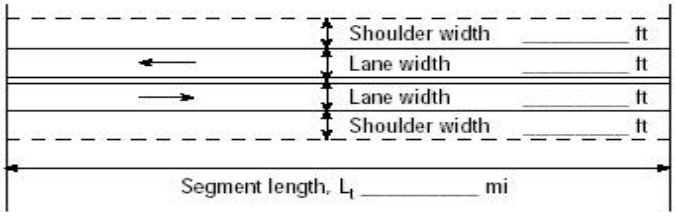
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*E. Bennett Rd EB*
Agency or Company	*Nevada County*	From/To	*west of Brunswick*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Cumulative*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *66*veh/h

Opposing direction vol., V_o *127*veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.1*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☐ Rolling

Grade Length *0.25* mi Up/down *3.0*

Peak-hour factor, PHF *0.79*

No-passing zone *100*%

% Trucks and Buses , P_T *6* %

% Recreational vehicles, P_R *2*%

Access points *mi* *3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*2.6*	*1.7*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.911*	*0.960*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.78*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*118*	*168*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*3.5 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*41.7 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*35.9 mi/h*
		Percent free flow speed, PFFS	*86.3* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.994*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*84*	*162*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*9.9*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*51.1*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*27.3*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*B*
Volume to capacity ratio, *v/c*	*0.07*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1278*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1689*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*86.3*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*83.5*
Effective width, Wv (Eq. 15-29) ft	*23.38*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.88*
Bicycle level of service (Exhibit 15-4)	*C*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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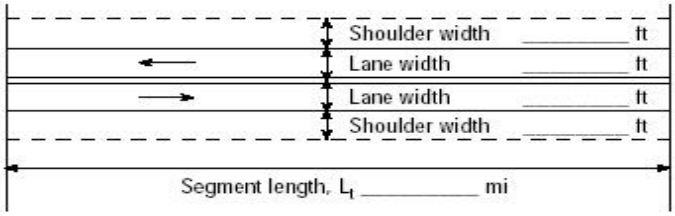
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*E. Bennett Rd WB*
Agency or Company	*Nevada County*	From/To	*west of Brunswick*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Cumulative*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *127*veh/h

Opposing direction vol., V_o *66*veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.1*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.79*

No-passing zone *100*%

% Trucks and Buses , P_T *6* %

% Recreational vehicles, P_R *2*%

Access points *mi* *3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*2.5*	*2.7*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.916*	*0.906*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.72*	*0.67*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*244*	*138*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*3.0 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*41.7 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*35.7 mi/h*
		Percent free flow speed, PFFS	*85.7* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.8*	*1.9*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.954*	*0.949*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.77*	*0.73*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*219*	*121*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*23.3*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*51.6*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*56.5*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*B*
Volume to capacity ratio, *v/c*	*0.14*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1069*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1200*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*85.7*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*160.8*
Effective width, Wv (Eq. 15-29) ft	*19.11*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*4.12*
Bicycle level of service (Exhibit 15-4)	*D*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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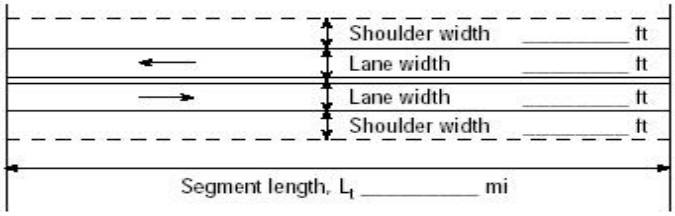
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Bennett to Project Access*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Cumulative*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *378*veh/h

Opposing direction vol., V_o *561*veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.4*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☐ Rolling

Grade Length *0.40* mi Up/down *5.0*

Peak-hour factor, PHF *0.87*

No-passing zone *100*%

% Trucks and Buses , P_T *6* %

% Recreational vehicles, P_R *0*%

Access points *mi* *2*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*4.9*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.812*	*0.994*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.87*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*615*	*649*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0* *mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6* *mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*0.5* *mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.7* *mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*46.9* *mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*35.4* *mi/h*
		Percent free flow speed, PFFS	*75.5* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*434*	*645*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*49.1*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*34.9*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*63.1*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.36*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1379*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1693*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*75.5*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*434.5*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.46*
Bicycle level of service (Exhibit 15-4)	*E*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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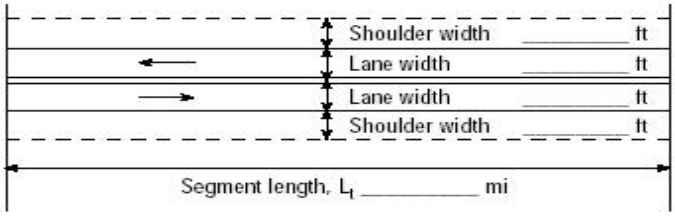
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Bennett to Project Access*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Cumulative*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *561* veh/h

Opposing direction vol., V_o *378* veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.4*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☐ Rolling

Grade Length *0.40* mi Up/down *-5.0*

Peak-hour factor, PHF *0.87*

No-passing zone *100*%

% Trucks and Buses , P_T *6* %

% Recreational vehicles, P_R *0*%

Access points *mi* *2*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*4.9*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.994*	*0.812*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*0.87*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*649*	*615*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*0.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.8 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*46.9 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*35.3 mi/h*
		Percent free flow speed, PFFS	*75.3* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*645*	*434*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*58.8*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*34.9*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*79.7*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.38*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1670*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*75.3*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*644.8*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.66*
Bicycle level of service (Exhibit 15-4)	*F*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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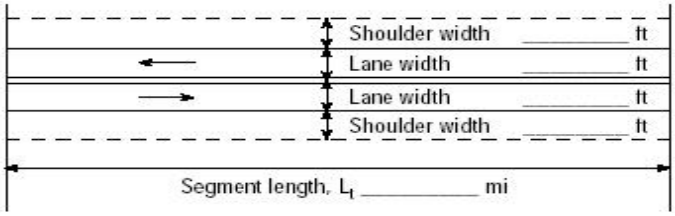
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Project Access to SR 174*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Cumulative*

Project Description: *Rise Grass Valley*

Input Data



Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.80*

No-passing zone *100%*

% Trucks and Buses , P_T *6 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *10*/mi

Analysis direction vol., V_d *378*veh/h

Opposing direction vol., V_o *561*veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.7*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.9*	*1.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.949*	*0.965*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.94*	*0.98*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*530*	*742*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*2.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.4 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*44.9 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*33.7 mi/h*
		Percent free flow speed, PFFS	*75.0 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.4*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.977*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.94*	*0.99*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*515*	*708*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*54.5*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*31.5*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*67.8*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.31*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1608*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1683*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*75.0*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*472.5*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.51*
Bicycle level of service (Exhibit 15-4)	*F*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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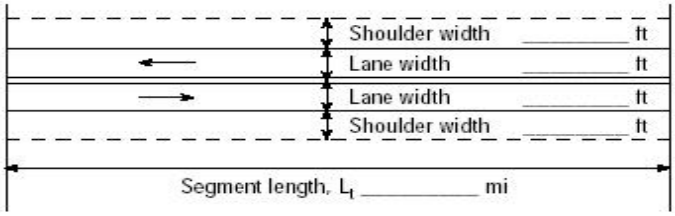
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Project Access to SR 174*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period		Analysis Year	*Cumulaitve*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *561* veh/h

Opposing direction vol., V_o *378* veh/h

Shoulder width ft *2.0*
Lane Width ft *12.0*
Segment Length mi *0.7*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling
Grade Length mi Up/down
Peak-hour factor, PHF *0.80*
No-passing zone *100*%
% Trucks and Buses , P_T *6* %
% Recreational vehicles, P_R *0*%
Access points *mi* *10*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.6*	*1.9*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.965*	*0.949*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.98*	*0.94*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*742*	*530*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0* *mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6* *mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.5* *mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*2.1* *mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*44.9* *mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*32.9* *mi/h*
		Percent free flow speed, PFFS	*73.3* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.4*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.977*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.99*	*0.94*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*708*	*515*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*62.6*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*31.5*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*80.8*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.44*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1541*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1613*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*73.3*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*701.3*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.71*
Bicycle level of service (Exhibit 15-4)	*F*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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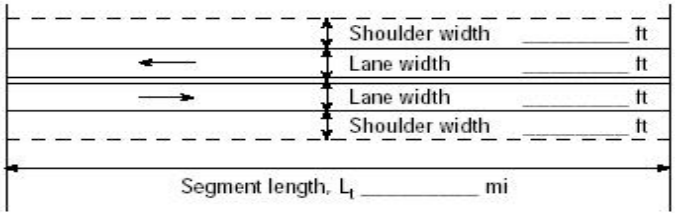
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*SR 174 EB*
Agency or Company	*Nevada County*	From/To	*Empire to SR 174*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Cumulative*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *303* veh/h

Opposing direction vol., V_o *606* veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *2.1*

☑ Class I highway ☐ Class II highway ☐ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.86*

No-passing zone *100*%

% Trucks and Buses , P_T *8* %

% Recreational vehicles, P_R *0*%

Access points *mi* *8*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*2.0*	*1.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.926*	*0.954*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.87*	*0.98*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*437*	*754*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.3 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*40.4 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*29.8 mi/h*
		Percent free flow speed, PFFS	*73.8* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.6*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.954*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.88*	*0.99*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*420*	*712*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*49.1*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*30.0*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*60.2*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*E*
Volume to capacity ratio, *v/c*	*0.26*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1589*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1683*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*73.8*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*352.3*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*6.04*
Bicycle level of service (Exhibit 15-4)	*F*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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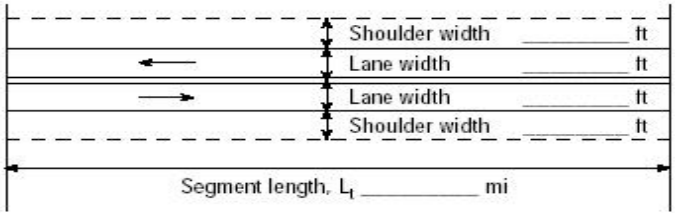
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*SR 174 WB*
Agency or Company	*Nevada County*	From/To	*Empire to SR 174*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Cumulative*

Project Description: *Rise Grass Valley*

Input Data



Show North Arrow

☑ Class I highway ☐ Class II highway ☐ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.86*

No-passing zone *100%*

% Trucks and Buses , P_T *8 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *8*/mi

Analysis direction vol., V_d *606*veh/h

Opposing direction vol., V_o *303*veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *2.1*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.6*	*2.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.954*	*0.926*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.98*	*0.87*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*754*	*437*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*2.5 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*40.4 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*28.6 mi/h*
		Percent free flow speed, PFFS	*70.9 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.954*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.99*	*0.88*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*712*	*420*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*61.5*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*30.0*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*80.4*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*E*
Volume to capacity ratio, *v/c*	*0.44*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1433*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1499*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*70.9*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*704.7*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*6.40*
Bicycle level of service (Exhibit 15-4)	*F*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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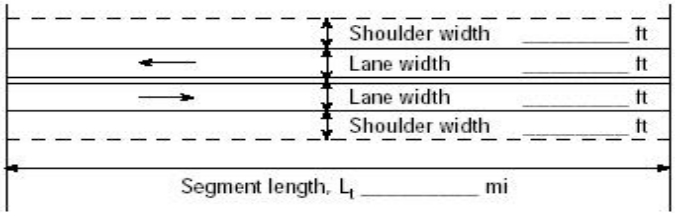
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines to SR 49/20*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*CPP Centennial*

Project Description: *Rise Grass Valley 2 Lanes SB*

Input Data



Analysis direction vol., V_d *717* veh/h

Opposing direction vol., V_o veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *1.0*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.89*

No-passing zone *100%*

% Trucks and Buses , P_T *6 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *6*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.4*	*1.5*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.977*	*0.971*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.99*	*0.99*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*833*	*784*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*1.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.2 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.5 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*29.7 mi/h*
		Percent free flow speed, PFFS	*68.3 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*806*	*754*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*69.1*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*25.8*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*82.4*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.49*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1634*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*68.3*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*805.6*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.88*
Bicycle level of service (Exhibit 15-4)	*D*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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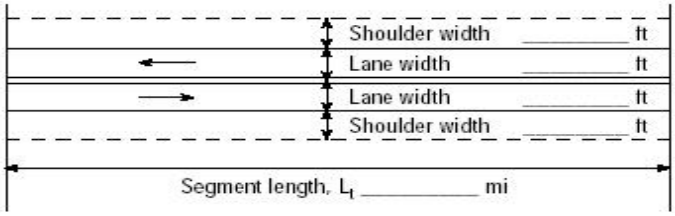
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines to SR 49/20*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*CPP Centennial*

Project Description: *Rise Grass Valley - 2 lanes SB*

Input Data



Analysis direction vol., V_d *688*veh/h

Opposing direction vol., V_o *717*veh/h

Shoulder width ft *6.0*
Lane Width ft *12.0*
Segment Length mi *1.0*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☐ Rolling

Grade Length *0.25* mi Up/down *3.0*
Peak-hour factor, PHF *0.89*
No-passing zone *100*%
% Trucks and Buses , P_T *6* %
% Recreational vehicles, P_R *0*%
Access points *mi* *6*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.4*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.976*	*0.994*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*792*	*810*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*1.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.2 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.5 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*29.9 mi/h*
		Percent free flow speed, PFFS	*68.7* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.92*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*840*	*806*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*70.7*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*24.4*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*83.2*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.47*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1671*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1564*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*68.7*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*773.0*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.86*
Bicycle level of service (Exhibit 15-4)	*D*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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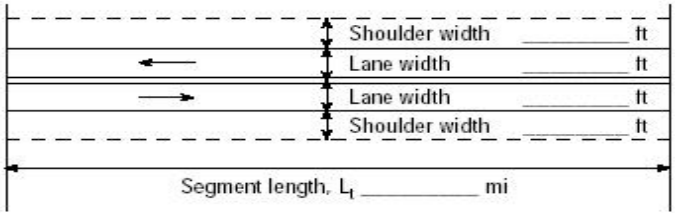
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines to Bennett*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*Peak Hour*	Analysis Year	*CPP Centennial*

Project Description: *Rise Grass Valley*

Input Data



Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.88*

No-passing zone *100%*

% Trucks and Buses , P_T *9 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *4*/mi

Analysis direction vol., V_d *861*veh/h

Opposing direction vol., V_o veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *0.7*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.3*	*1.7*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.974*	*0.941*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*0.97*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*1005*	*631*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*1.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.8 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*49.0 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*34.5 mi/h*
		Percent free flow speed, PFFS	*70.4 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.2*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.982*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*0.97*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*978*	*605*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*73.0*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*23.0*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*87.2*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.59*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1552*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1649*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*70.4*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*978.4*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.04*
Bicycle level of service (Exhibit 15-4)	*E*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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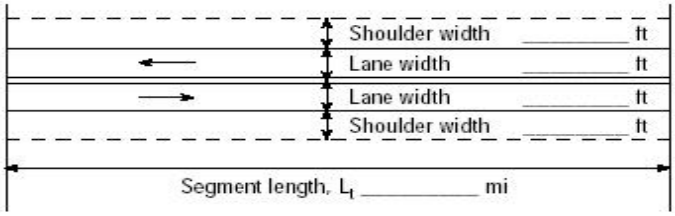
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines to Bennett*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*Peak Hour*	Analysis Year	*CPP Centennial*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *590*veh/h

Opposing direction vol., V_o *861*veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *0.7*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.88*

No-passing zone *100*%

% Trucks and Buses , P_T *9* %

% Recreational vehicles, P_R *0*%

Access points *mi* *4*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.6*	*1.3*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.949*	*0.974*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.98*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*721*	*1005*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0* *mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0* *mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*1.0* *mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.1* *mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*49.0* *mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*34.5* *mi/h*
		Percent free flow speed, PFFS	*70.4* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.98*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*684*	*978*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*66.6*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*23.0*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*76.1*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.42*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1656*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*70.4*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*670.5*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*4.84*
Bicycle level of service (Exhibit 15-4)	*E*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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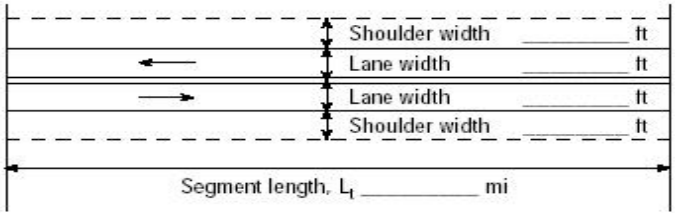
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*E. Bennett Rd EB*
Agency or Company	*Nevada County*	From/To	*west of Brunswick*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*CPP Centennial*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *84* veh/h

Opposing direction vol., V_o *139* veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.1*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.79*

No-passing zone *100*%

% Trucks and Buses , P_T *6* %

% Recreational vehicles, P_R *2*%

Access points *mi* *3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*2.7*	*2.4*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.906*	*0.921*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.67*	*0.73*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*175*	*262*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*3.6 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*41.7 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*34.7 mi/h*
		Percent free flow speed, PFFS	*83.2* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.8*	*1.8*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.954*	*0.954*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.73*	*0.78*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*153*	*236*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*17.4*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*54.4*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*38.8*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.10*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1345*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1338*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*83.2*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*106.3*
Effective width, Wv (Eq. 15-29) ft	*22.12*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.28*
Bicycle level of service (Exhibit 15-4)	*C*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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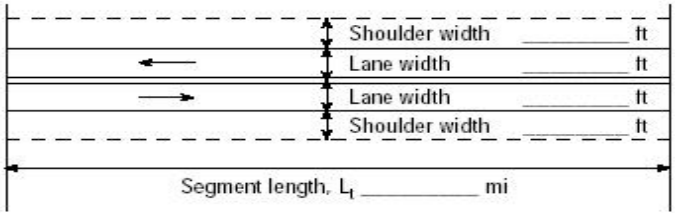
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*E. Bennett Rd WB*
Agency or Company	*Nevada County*	From/To	*west of Brunswick*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*Peak Hour*	Analysis Year	*CPP Centennial*

Project Description: *Rise Grass Valley*

Input Data



Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.79*

No-passing zone *100%*

% Trucks and Buses , P_T *6 %*

% Recreational vehicles, P_R *2%*

Access points *mi* *3*/mi

Analysis direction vol., V_d *139*veh/h

Opposing direction vol., V_o *84*veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.1*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*2.4*	*2.7*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.921*	*0.906*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.73*	*0.67*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*262*	*175*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*3.6 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*41.7 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*34.7 mi/h*
		Percent free flow speed, PFFS	*83.2 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.8*	*1.8*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.954*	*0.954*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.78*	*0.73*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*236*	*153*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*24.8*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*54.4*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*57.8*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.15*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1106*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1249*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*83.2*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*175.9*
Effective width, Wv (Eq. 15-29) ft	*18.27*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*4.32*
Bicycle level of service (Exhibit 15-4)	*D*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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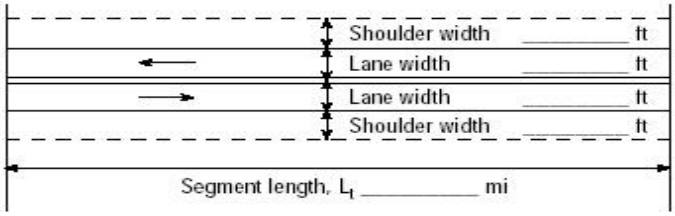
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Bennett to Project Access*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*Peak Hour*	Analysis Year	*CPP Centennial*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *463* veh/h

Opposing direction vol., V_o veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.4*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☐ Rolling

Grade Length *0.40* mi Up/down *5.0*

Peak-hour factor, PHF *0.87*

No-passing zone *100*%

% Trucks and Buses , P_T *6* %

% Recreational vehicles, P_R *0*%

Access points *mi* *2*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*4.6*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.823*	*0.994*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.97*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*667*	*711*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*0.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.5 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*46.9 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*34.7 mi/h*
		Percent free flow speed, PFFS	*74.0* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*533*	*707*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*55.5*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*31.7*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*69.1*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.39*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1384*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1692*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*74.0*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*532.2*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.57*
Bicycle level of service (Exhibit 15-4)	*F*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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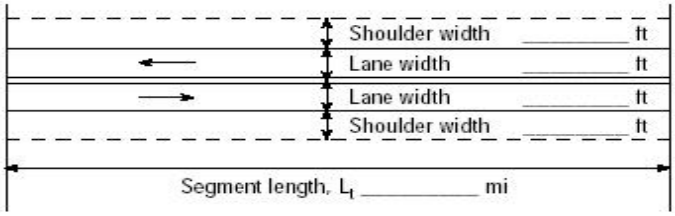
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Bennett to Project Access*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*Peak Hour*	Analysis Year	*CPP Centennial*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *625*veh/h

Opposing direction vol., V_o *463*veh/h

Shoulder width ft *2.0*
Lane Width ft *12.0*
Segment Length mi *0.4*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☐ Rolling

Grade Length *0.40* mi Up/down *-5.0*
Peak-hour factor, PHF *0.87*
No-passing zone *100*%
% Trucks and Buses , P_T *6* %
% Recreational vehicles, P_R *0*%
Access points *mi* *2*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*4.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.994*	*0.823*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*0.97*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*723*	*667*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.6 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*46.9 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*34.5 mi/h*
		Percent free flow speed, PFFS	*73.5* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*718*	*533*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*63.1*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*31.4*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*81.1*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.43*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1680*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*73.5*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*718.4*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.72*
Bicycle level of service (Exhibit 15-4)	*F*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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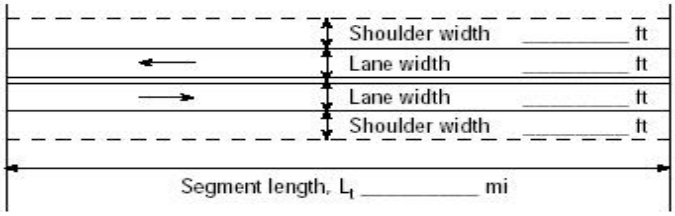
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Project Access to SR 174*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*Peak Hour*	Analysis Year	*CPP Centennial*

Project Description: *Rise Grass Valley*

Input Data



Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.80*

No-passing zone *100*%

Analysis direction vol., V_d *393*veh/h

Opposing direction vol., V_o *583*veh/h

% Trucks and Buses , P_T *6* %

% Recreational vehicles, P_R *0*%

Access points *mi* *10*/mi

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.7*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.8*	*1.5*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.954*	*0.971*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.95*	*0.98*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*542*	*766*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.3 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*44.9 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*33.4 mi/h*
		Percent free flow speed, PFFS	*74.5* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.4*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.977*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.95*	*0.99*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*530*	*736*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*56.0*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*30.5*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*68.8*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.32*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1618*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1683*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*74.5*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*491.3*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.53*
Bicycle level of service (Exhibit 15-4)	*F*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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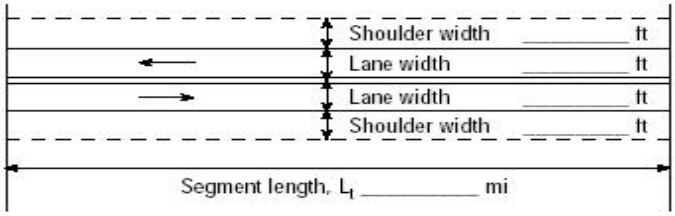
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Project Access to SR 174*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*Peak Hour*	Analysis Year	*CPP Centennial*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *583* veh/h

Opposing direction vol., V_o *393* veh/h

Shoulder width ft *2.0*
Lane Width ft *12.0*
Segment Length mi *0.7*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling
Grade Length mi Up/down
Peak-hour factor, PHF *0.80*
No-passing zone *100*%
% Trucks and Buses , P_T *6* %
% Recreational vehicles, P_R *0*%
Access points *mi* *10*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.5*	*1.8*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.971*	*0.954*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.98*	*0.95*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*766*	*542*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0* *mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6* *mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*2.5* *mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*2.1* *mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*44.9* *mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*32.7* *mi/h*
		Percent free flow speed, PFFS	*72.8* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.4*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.977*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.99*	*0.95*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*736*	*530*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*64.1*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*30.5*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*81.8*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.45*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1557*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1613*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*72.8*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*728.8*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.73*
Bicycle level of service (Exhibit 15-4)	*F*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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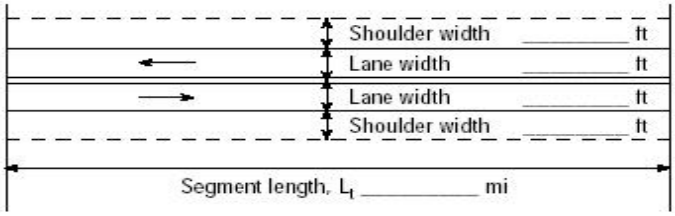
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*JF*	Highway / Direction of Travel	*SR 174 EB*
Agency or Company	*Nevada County*	From/To	*Empire to SR 174*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*Peak Hour*	Analysis Year	*CPP Centennial*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *309* veh/h

Opposing direction vol., V_o *610* veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *2.1*

☑ Class I highway ☐ Class II highway ☐ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.86*

No-passing zone *100*%

% Trucks and Buses , P_T *8* %

% Recreational vehicles, P_R *0*%

Access points *mi* *8*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*2.0*	*1.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.926*	*0.954*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.87*	*0.98*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*446*	*759*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS} (Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.3 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*40.4 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*29.7 mi/h*
		Percent free flow speed, PFFS	*73.6* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19)	*1.6*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.954*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.88*	*0.99*
Directional flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*428*	*716*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*49.6*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*29.9*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*60.8*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*E*
Volume to capacity ratio, *v/c*	*0.26*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1589*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1683*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*73.6*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*359.3*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*6.05*
Bicycle level of service (Exhibit 15-4)	*F*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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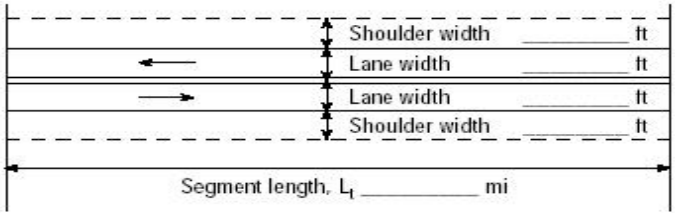
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*SR 174 WB*
Agency or Company	*Nevada County*	From/To	*Empire to SR 174*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*Peak Hour*	Analysis Year	*CPP Centennial*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *610*veh/h

Opposing direction vol., V_o *309*veh/h

Shoulder width ft *2.0*
Lane Width ft *12.0*
Segment Length mi *2.1*

☑ Class I highway ☐ Class II highway ☐ Class III highway

Terrain ☐ Level ☑ Rolling
Grade Length mi Up/down
Peak-hour factor, PHF *0.86*
No-passing zone *100*%
% Trucks and Buses , P_T *8* %
% Recreational vehicles, P_R *0*%
Access points *mi* *8*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.6*	*2.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.954*	*0.926*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.98*	*0.87*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*759*	*446*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*2.5 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*40.4 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*28.6 mi/h*
		Percent free flow speed, PFFS	*70.7* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.954*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.99*	*0.88*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*716*	*428*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*62.8*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*29.9*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*81.5*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*E*
Volume to capacity ratio, *v/c*	*0.45*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1443*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1516*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*70.7*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*709.3*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*6.40*
Bicycle level of service (Exhibit 15-4)	*F*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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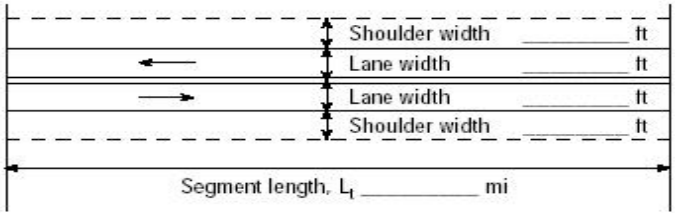
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines to SR 49/20*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*CPP SR 49*

Project Description: *Rise Grass Valley 2 Lanes SB*

Input Data



Analysis direction vol., V_d *724*veh/h

Opposing direction vol., V_o *696*veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *1.0*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.89*

No-passing zone *100*%

% Trucks and Buses , P_T *6* %

% Recreational vehicles, P_R *0*%

Access points *mi* *6*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.4*	*1.4*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.977*	*0.977*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.99*	*0.99*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*841*	*809*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*1.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.2 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.5 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*29.5 mi/h*
		Percent free flow speed, PFFS	*67.8* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*813*	*782*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*69.6*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*25.3*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*82.5*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.49*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1644*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*67.8*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*813.5*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.88*
Bicycle level of service (Exhibit 15-4)	*D*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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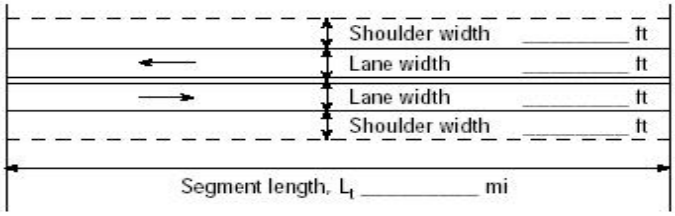
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines to SR 49/20*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*CPP SR 49*

Project Description: *Rise Grass Valley - 2 lanes SB*

Input Data



Analysis direction vol., V_d *696*veh/h

Opposing direction vol., V_o *724*veh/h

Shoulder width ft *6.0*
Lane Width ft *12.0*
Segment Length mi *1.0*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☐ Rolling
Grade Length *0.25* mi Up/down *3.0*
Peak-hour factor, PHF *0.89*
No-passing zone *100*%
% Trucks and Buses , P_T *6* %
% Recreational vehicles, P_R *0*%
Access points *mi* *6*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.4*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.978*	*0.994*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*800*	*818*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*1.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.2 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.5 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*29.8 mi/h*
		Percent free flow speed, PFFS	*68.4* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.92*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*850*	*813*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*71.1*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*24.2*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*83.5*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.47*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1673*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1564*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*68.4*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*782.0*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.86*
Bicycle level of service (Exhibit 15-4)	*D*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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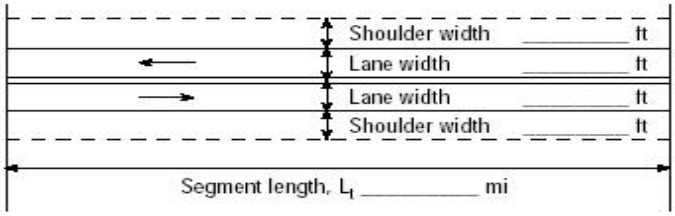
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines to Bennett*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*Peak Hour*	Analysis Year	*CPP SR 49*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *861*veh/h

Opposing direction vol., V_o *590*veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *0.7*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.88*

No-passing zone *100*%

% Trucks and Buses , P_T *9* %

% Recreational vehicles, P_R *0*%

Access points *mi* *4*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.3*	*1.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.974*	*0.949*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*0.98*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*1005*	*721*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*1.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.5 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*49.0 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*34.1 mi/h*
		Percent free flow speed, PFFS	*69.6* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*0.98*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*978*	*684*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*74.3*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*23.0*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*87.8*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.59*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1581*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1683*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*69.6*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*978.4*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.04*
Bicycle level of service (Exhibit 15-4)	*E*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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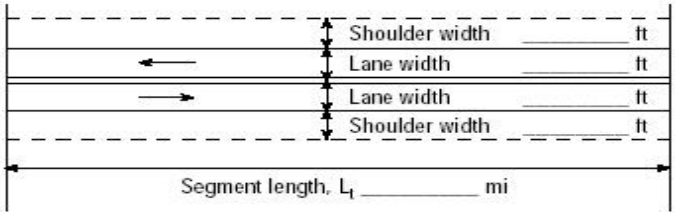
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Whispering Pines to Bennett*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*Peak Hour*	Analysis Year	

Project Description: *Rise Grass Valley*

Input Data



Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.88*

No-passing zone *100%*

% Trucks and Buses , P_T *9 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *4*/mi

Analysis direction vol., V_d *590*veh/h

Opposing direction vol., V_o *861*veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *0.7*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.6*	*1.3*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.949*	*0.974*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.98*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*721*	*1005*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*1.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.1 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*49.0 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*34.5 mi/h*
		Percent free flow speed, PFFS	*70.4 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.98*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*684*	*978*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*66.6*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*23.0*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*76.1*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.42*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1656*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*70.4*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*670.5*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*4.84*
Bicycle level of service (Exhibit 15-4)	*E*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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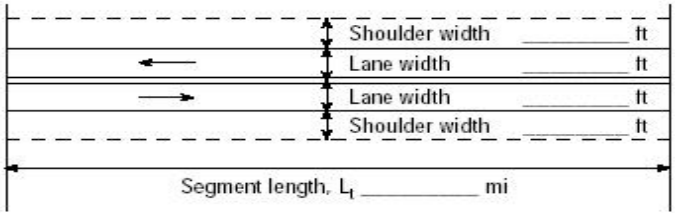
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*JF*	Highway / Direction of Travel	*E. Bennett Rd EB*
Agency or Company	*Nevada County*	From/To	*west of Brunswick*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period		Analysis Year	*CPP SR 49*

Project Description: *Rise Grass Valley*

Input Data



Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.79*

No-passing zone *100%*

% Trucks and Buses , P_T *6 %*

% Recreational vehicles, P_R *2%*

Access points *mi* *3*/mi

Analysis direction vol., V_d *84*veh/h

Opposing direction vol., V_o *139*veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.1*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*2.7*	*2.4*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.906*	*0.921*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.67*	*0.73*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*175*	*262*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*3.6 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*41.7 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*34.7 mi/h*
		Percent free flow speed, PFFS	*83.2 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.8*	*1.8*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.954*	*0.954*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.73*	*0.78*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*153*	*236*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*17.4*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*54.4*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*38.8*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.10*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1235*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1338*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*83.2*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*106.3*
Effective width, Wv (Eq. 15-29) ft	*22.12*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.28*
Bicycle level of service (Exhibit 15-4)	*C*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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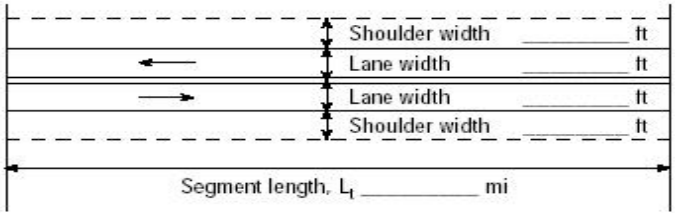
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*JF*	Highway / Direction of Travel	*E. Bennett Rd WB*
Agency or Company	*Nevada County*	From/To	*west of Brunswick*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*Peak Hour*	Analysis Year	

Project Description: *Rise Grass Valley*

Input Data



Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.79*

No-passing zone *100%*

% Trucks and Buses , P_T *6 %*

% Recreational vehicles, P_R *2%*

Access points *mi* *3*/mi

Show North Arrow

Analysis direction vol., V_d *139*veh/h

Opposing direction vol., V_o *84*veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.1*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*2.4*	*2.7*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.921*	*0.906*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.73*	*0.67*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*262*	*175*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*3.6 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*41.7 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*34.7 mi/h*
		Percent free flow speed, PFFS	*83.2 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.8*	*1.8*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.954*	*0.954*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.78*	*0.73*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*236*	*153*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*24.8*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*54.4*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*57.8*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.15*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1106*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1249*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*83.2*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*175.9*
Effective width, Wv (Eq. 15-29) ft	*18.27*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*4.32*
Bicycle level of service (Exhibit 15-4)	*D*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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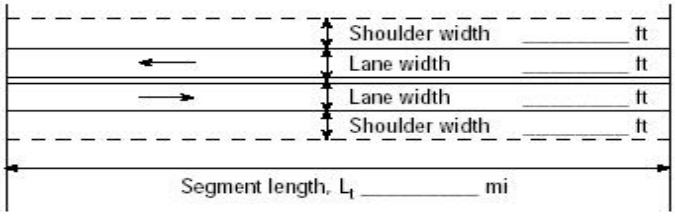
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Bennett to Project Access*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*Peak Hour*	Analysis Year	*CPP SR 49*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *463*veh/h

Opposing direction vol., V_o *625*veh/h

Shoulder width ft *2.0*
Lane Width ft *12.0*
Segment Length mi *0.4*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☐ Rolling

Grade Length *0.40* mi Up/down *5.0*
Peak-hour factor, PHF *0.87*
No-passing zone *100*%
% Trucks and Buses , P_T *6* %
% Recreational vehicles, P_R *0*%
Access points *mi* *2*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*4.6*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.823*	*0.994*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.97*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*667*	*723*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0* *mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6* *mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.5* *mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.5* *mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*46.9* *mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*34.6* *mi/h*
		Percent free flow speed, PFFS	*73.9* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*533*	*718*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*56.0*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*31.4*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*69.4*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.39*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1404*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1691*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*73.9*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*532.2*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.57*
Bicycle level of service (Exhibit 15-4)	*F*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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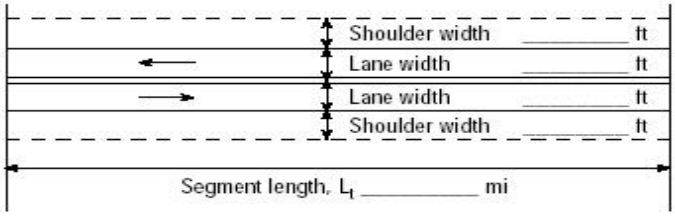
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Bennett to Project Access*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*Peak Hour*	Analysis Year	*CPP SR 49*

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *625*veh/h

Opposing direction vol., V_o *463*veh/h

Shoulder width ft *2.0*
Lane Width ft *12.0*
Segment Length mi *0.4*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☐ Rolling

Grade Length *0.40* mi Up/down *-5.0*
Peak-hour factor, PHF *0.87*
No-passing zone *100*%
% Trucks and Buses , P_T *6* %
% Recreational vehicles, P_R *0*%
Access points *mi* *2*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*4.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.994*	*0.823*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*0.97*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*723*	*667*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.5 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.6 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*46.9 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*34.5 mi/h*
		Percent free flow speed, PFFS	*73.5* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*718*	*533*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*63.1*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*31.4*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*81.1*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.43*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1680*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*73.5*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*718.4*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.72*
Bicycle level of service (Exhibit 15-4)	*F*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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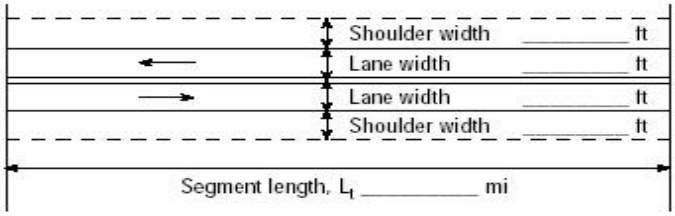
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd NB*
Agency or Company	*Nevada County*	From/To	*Project Access to SR 174*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*Peak Hour*	Analysis Year	

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *393* veh/h

Opposing direction vol., V_o *583* veh/h

Shoulder width ft *2.0*

Lane Width ft *12.0*

Segment Length mi *0.7*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.80*

No-passing zone *100*%

% Trucks and Buses , P_T *6* %

% Recreational vehicles, P_R *0*%

Access points *mi* *10*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.8*	*1.5*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.954*	*0.971*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.95*	*0.98*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*542*	*766*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0* *mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6* *mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*2.5* *mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.3* *mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*44.9* *mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*33.4* *mi/h*
		Percent free flow speed, PFFS	*74.5* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.4*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.977*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.95*	*0.99*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*530*	*736*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*56.0*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*30.5*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*68.8*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.32*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1618*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1683*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*74.5*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*491.3*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.53*
Bicycle level of service (Exhibit 15-4)	*F*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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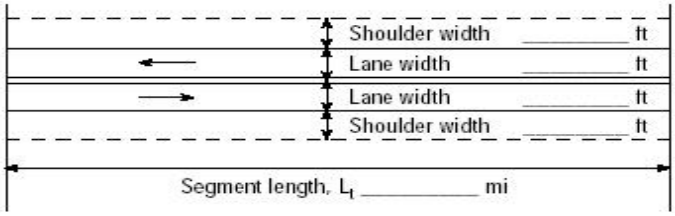
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*Brunswick Rd SB*
Agency or Company	*Nevada County*	From/To	*Project Access to SR 174*
Date Performed	*10/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*Peak Hour*	Analysis Year	

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *583* veh/h

Opposing direction vol., V_o *393* veh/h

Shoulder width ft *2.0*
Lane Width ft *12.0*
Segment Length mi *0.7*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☐ Level ☑ Rolling
Grade Length mi Up/down
Peak-hour factor, PHF *0.80*
No-passing zone *100*%
% Trucks and Buses , P_T *6* %
% Recreational vehicles, P_R *0*%
Access points *mi* *10*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.5*	*1.8*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.971*	*0.954*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.98*	*0.95*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*766*	*542*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*50.0* *mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6* *mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*2.5* *mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*2.1* *mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*44.9* *mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*32.7* *mi/h*
		Percent free flow speed, PFFS	*72.8* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.4*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.977*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.99*	*0.95*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*736*	*530*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*64.1*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*30.5*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*81.8*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.45*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1557*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1613*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*72.8*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*728.8*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.73*
Bicycle level of service (Exhibit 15-4)	*F*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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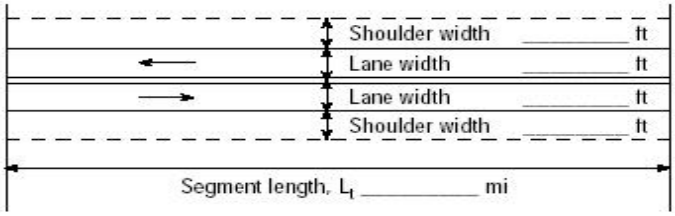
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*SR 174 EB*
Agency or Company	*Nevada County*	From/To	*Empire to SR 174*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*Peak Hour*	Analysis Year	

Project Description: *Rise Grass Valley*

Input Data



Analysis direction vol., V_d *309*veh/h

Opposing direction vol., V_o *610*veh/h

Shoulder width ft *2.0*
Lane Width ft *12.0*
Segment Length mi *2.1*

☑ Class I highway ☐ Class II highway ☐ Class III highway

Terrain ☐ Level ☑ Rolling
Grade Length mi Up/down
Peak-hour factor, PHF *0.86*
No-passing zone *100*%
% Trucks and Buses , P_T *8* %
% Recreational vehicles, P_R *0*%
Access points *mi* *8*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*2.0*	*1.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.926*	*0.954*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.87*	*0.98*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*446*	*759*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0* *mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6* *mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0* *mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.3* *mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*40.4* *mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*29.7* *mi/h*
		Percent free flow speed, PFFS	*73.6* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.6*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.954*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.88*	*0.99*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*428*	*716*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*49.6*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*29.9*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*60.8*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*E*
Volume to capacity ratio, *v/c*	*0.26*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1589*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1683*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*73.6*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*359.3*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*6.05*
Bicycle level of service (Exhibit 15-4)	*F*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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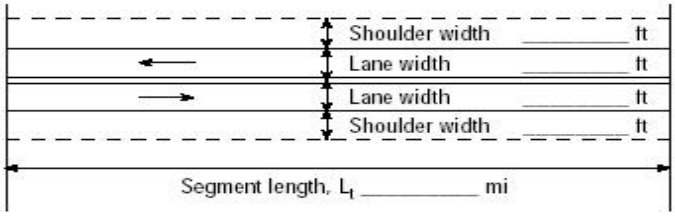
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*JF*	Highway / Direction of Travel	*SR 174 WB*
Agency or Company	*Nevada County*	From/To	*Empire to SR 174*
Date Performed	*12/23/2019*	Jurisdiction	*NV County*
Analysis Time Period	*Peak Hour*	Analysis Year	

Project Description: *Rise Grass Valley*

Input Data



Show North Arrow

☑ Class I highway ☐ Class II highway ☐ Class III highway

Terrain ☐ Level ☑ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.86*

No-passing zone *100*%

Analysis direction vol., V_d	*610*veh/h
Opposing direction vol., V_o	*309*veh/h
Shoulder width ft	*2.0*
Lane Width ft	*12.0*
Segment Length mi	*2.1*
% Trucks and Buses , P_T	*8* %
% Recreational vehicles, P_R	*0*%
Access points *mi*	*8*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.6*	*2.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.1*	*1.1*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.954*	*0.926*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*0.98*	*0.87*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*759*	*446*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0* *mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*2.6* *mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0* *mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*2.5* *mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*40.4* *mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*28.6* *mi/h*
		Percent free flow speed, PFFS	*70.7* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.6*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.954*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*0.99*	*0.88*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*716*	*428*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*62.8*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*29.9*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*81.5*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*E*
Volume to capacity ratio, *v/c*	*0.45*

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1443*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1516*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*70.7*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*709.3*
Effective width, Wv (Eq. 15-29) ft	*14.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*6.40*
Bicycle level of service (Exhibit 15-4)	*F*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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TECHNICAL LOS APPENDIX VI

FOR

IDAHO-MARYLAND MINE PROJECT
TRAFFIC IMPACT ANALYSIS

Nevada County, CA

PEAK HOUR SIGNAL WARRANTS

Prepared For:

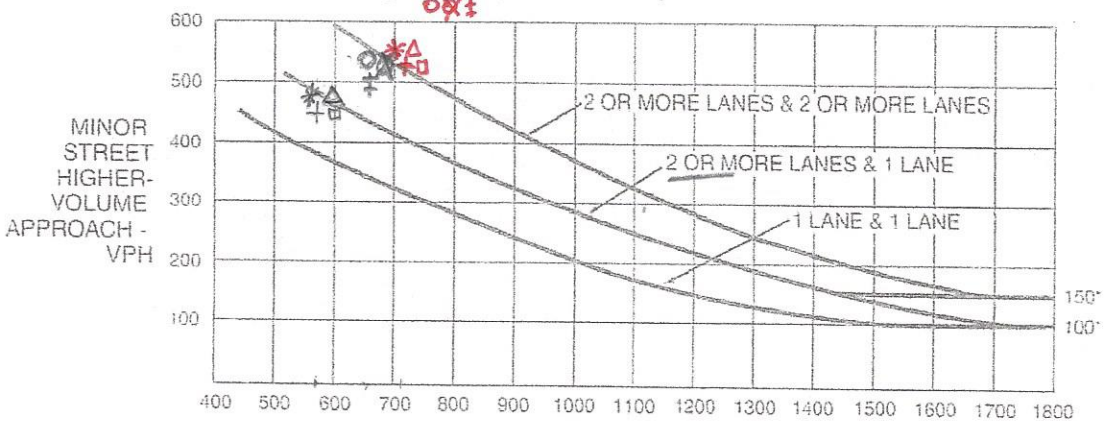
Rise Grass Valley Inc.

Prepared By:

KD Anderson & Associates, Inc.
3853 Taylor Road, Suite G
Loomis, CA 95650
(916) 660-1555

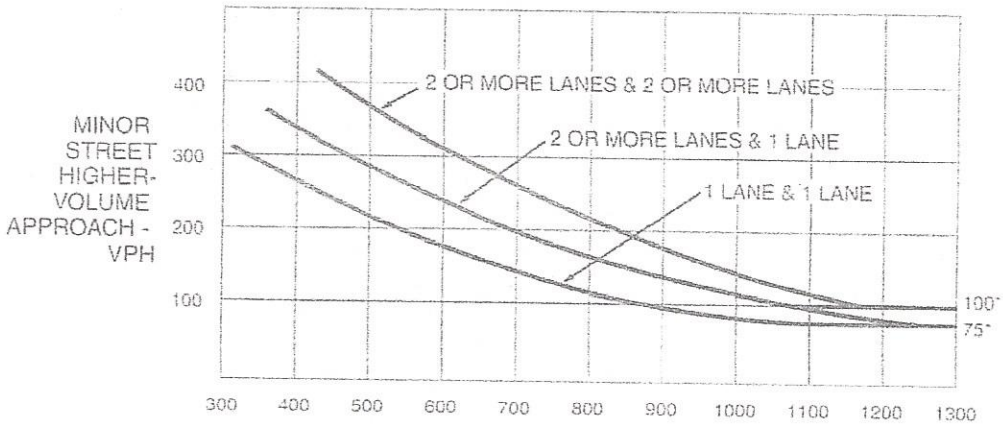
April 8, 2021

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

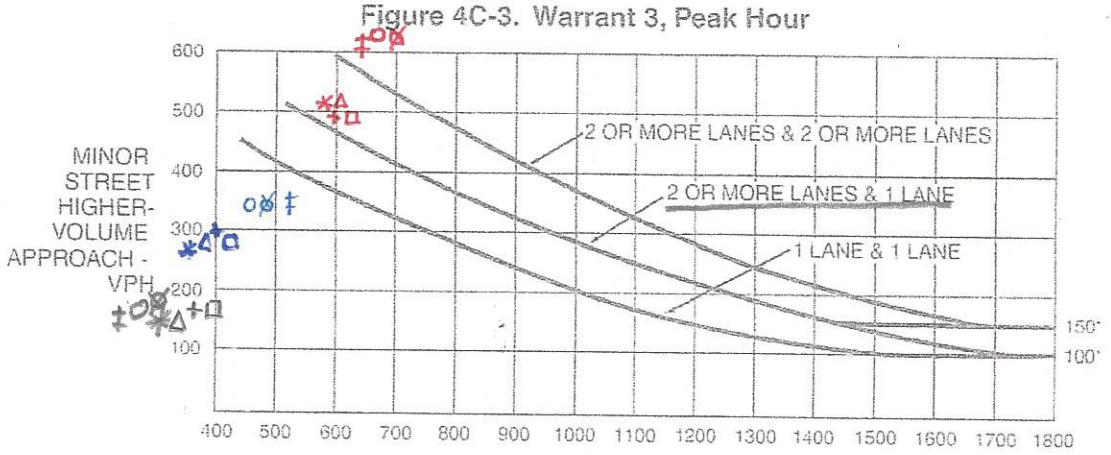


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

	AM	PM
EXIST	*	*
EPAP	△	△
EPAP PP CENTENNIAL	+	+
EPAP PP SR 49	□	□
CUM	○	○''
CPP CENTENNIAL	⊠	⊠
CPP SR 49	‡	‡

#3 E.BENNETT/ TW LOY

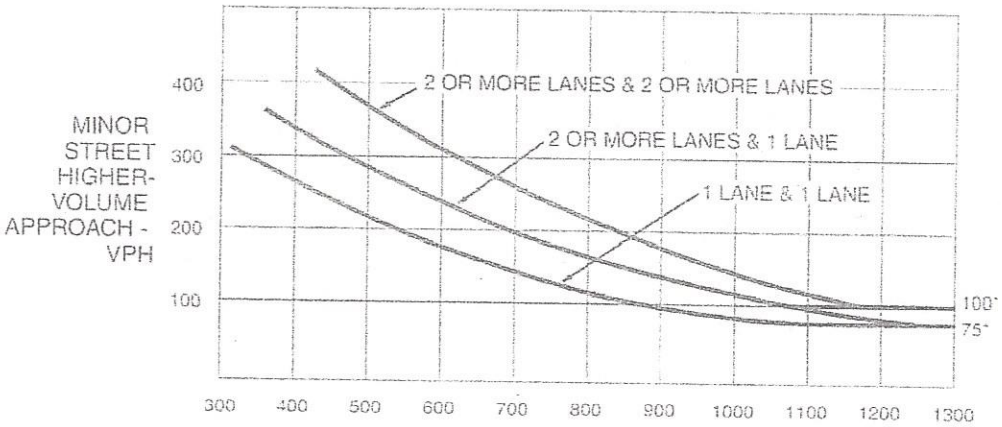
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

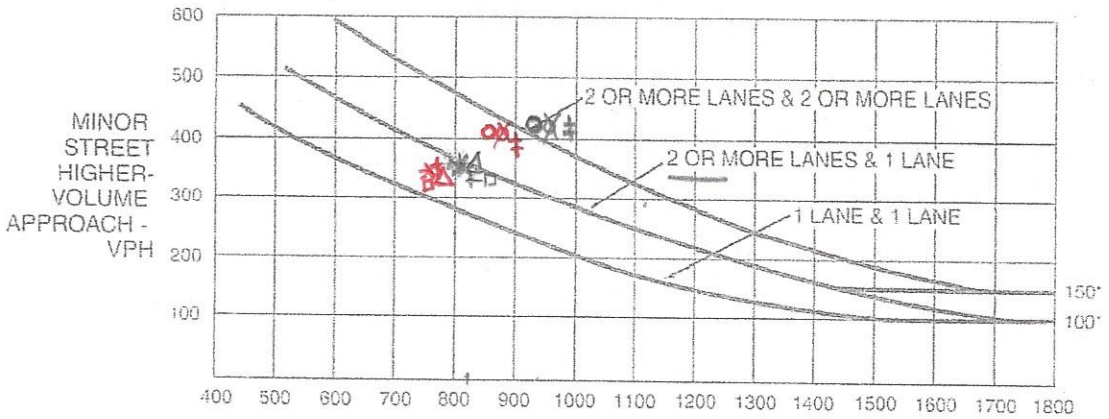


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

	6:30 AM	3:30 PM	6:30 PM
EXIST	*	*	*
EPAP	Δ	Δ	Δ
EPAPPP CENTENNIAL	+	+	+
EPAPPP SR49	□	□	□
CUMULATIVE	○	○	○
CPP CENTENNIAL	⊗	⊗	⊗
CPP - SR49	‡	‡	‡

3, E BENNETT / TINLOY

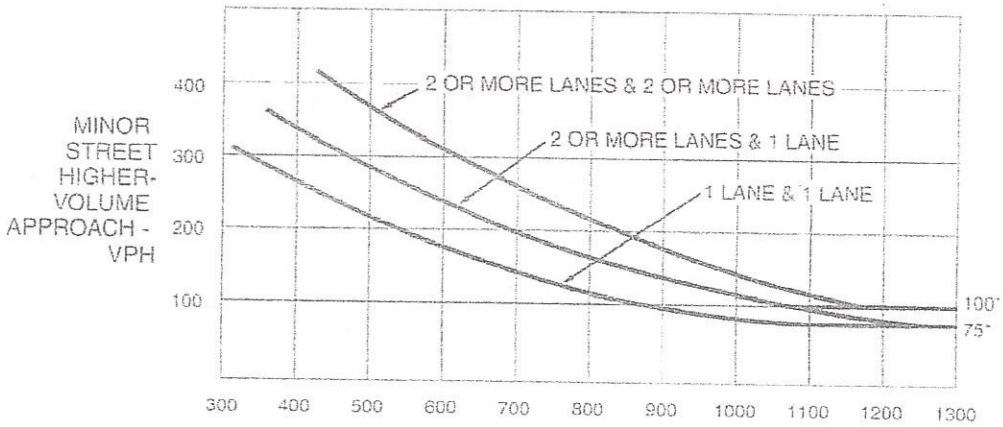
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

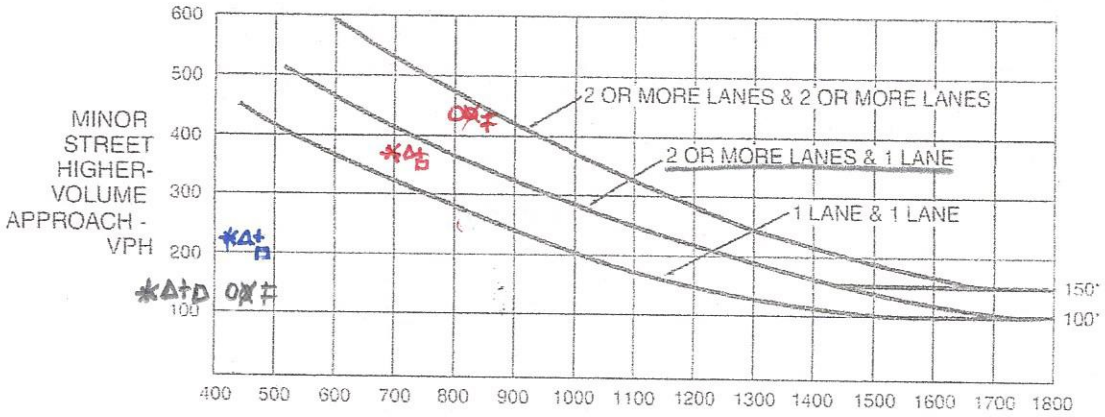


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

	AM	PM
EXIST	*	*
EP AP	△	△
EP APPP CENTENNIAL	+	+
EP APPP SR49	□	□
CUM	○	○
CPP CENTENNIAL	⊠	⊠
CPP SR49	‡	‡

#4 E. BENNETT/ HANSEN

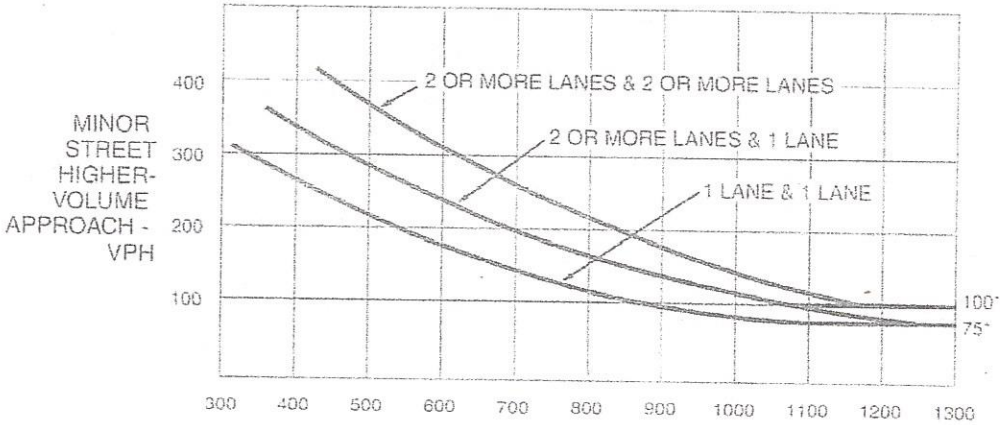
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



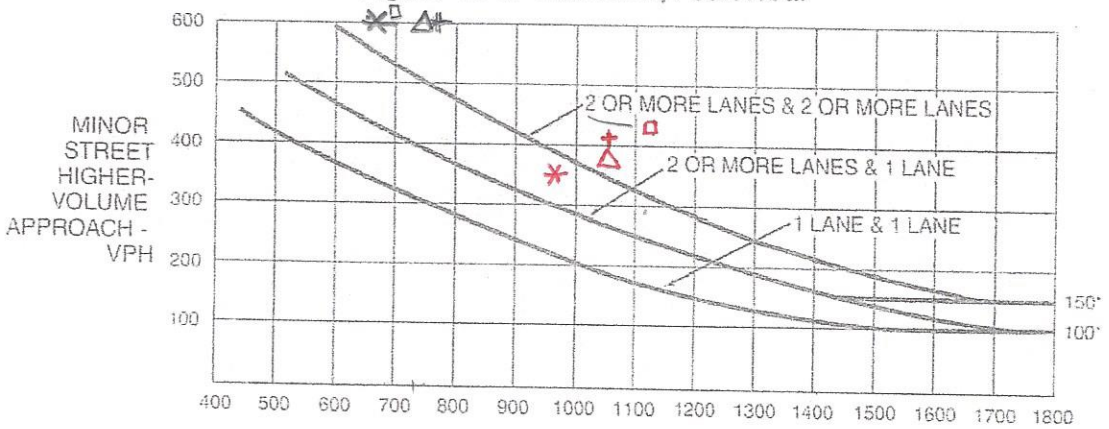
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

6 30 AM 3 30 PM 6 30 PM

EXIST
EPAP
EPAPPP CENTENNIAL
EPAPPP SR49
CUMULATIVE -
CPP CENTENNIAL
CPP SR 49

4. E BENNETT / HANSEN

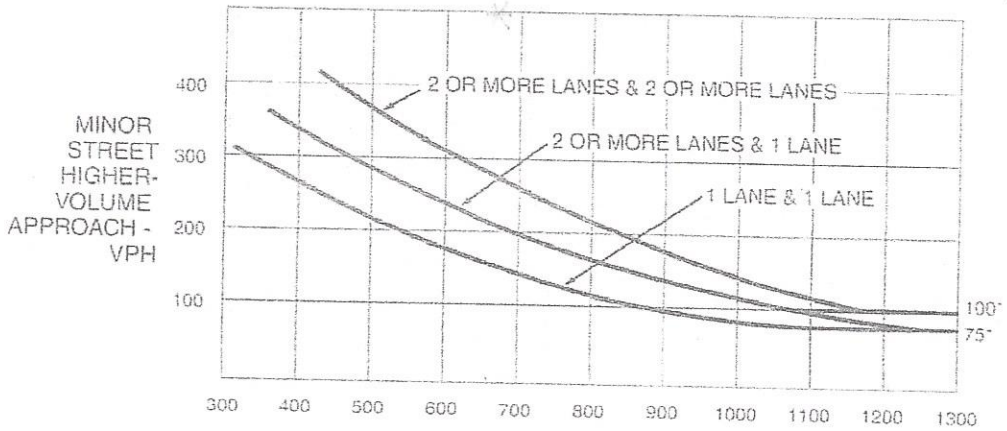
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

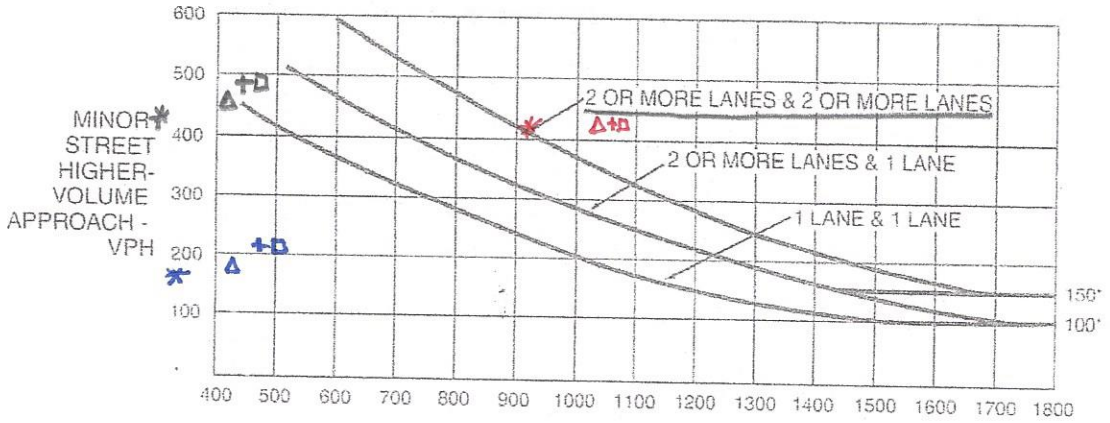


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

	AM	PM
EXIST	✳	✳
EPAP	△	△
EPAPP LEWTENNAL	+	+
EPAPP SR49	□	□
CUM — —	SIGNALIZED	

#6 IDAHOMARYLAND/
SR49/20 EB

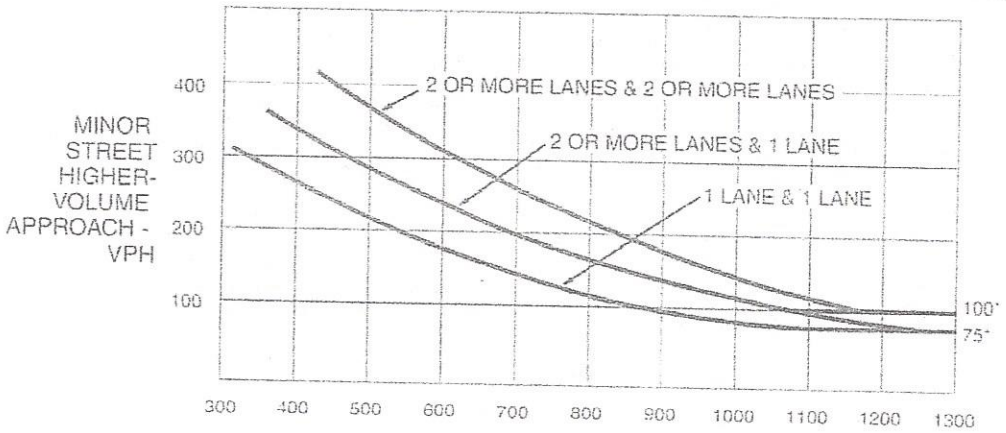
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



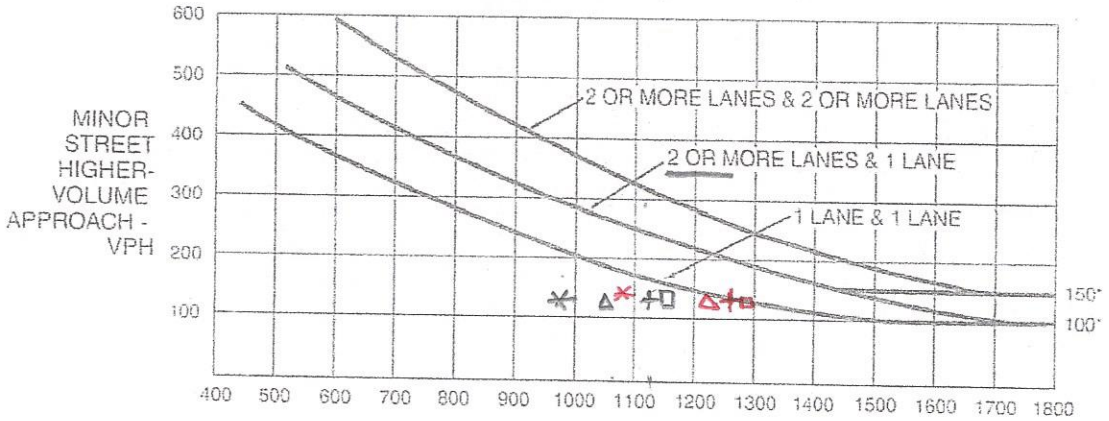
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

6:30 AM 3:30 PM 6:30 PM

EXIST
EPAP
EPAPPP CENTENNIAL
EPAPPP SR49
CUMULATIVE- SIGNAL

6. IDAHO MARYLAND / SR49/20 NB RAB

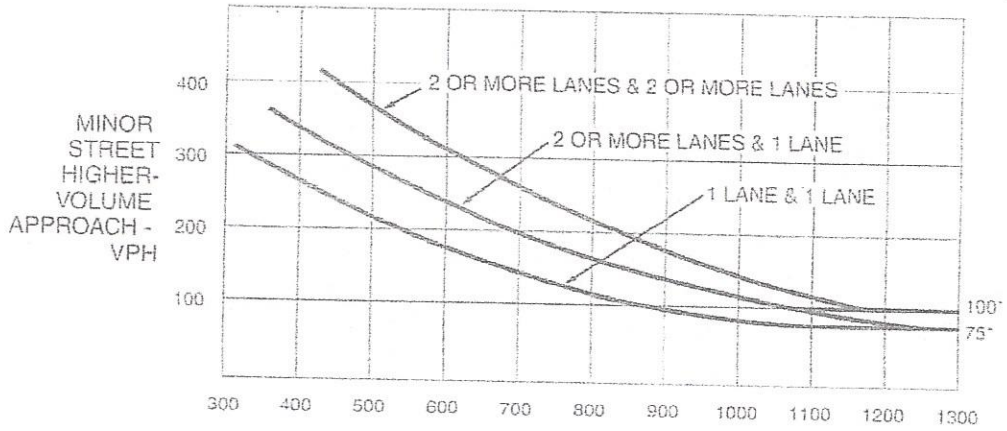
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

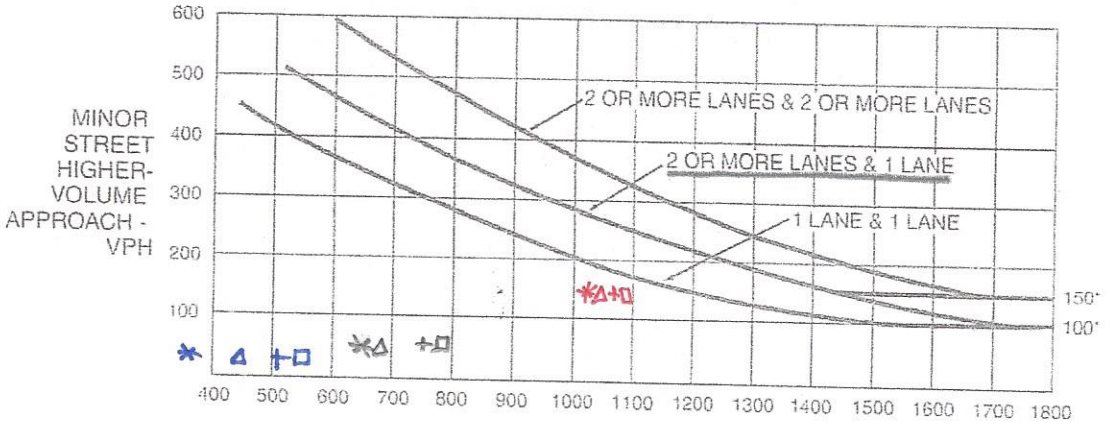


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

	AM	PM
EXIST	*	*
EPAP	△	△
EOAPPP CENTENNIAL	+	+
EPAPPP SR49	□	□
CUM	- - SIGNALIZED	

7. IDAHO MARYLAND/ RAILROAD

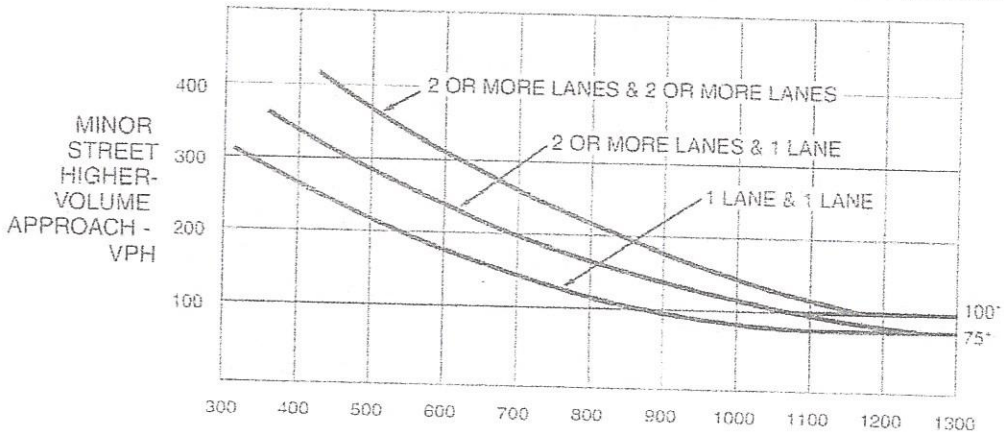
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



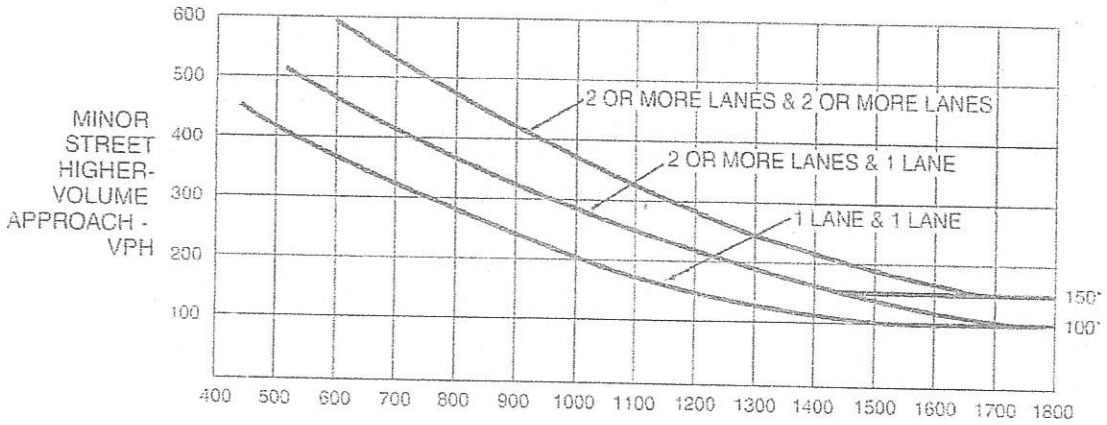
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

6:30 AM 3:30 PM 6:30 PM

EXIST
EPAP
EPAPPP CENTENNIAL
EPAPPP SR49
CUMULATIVE - SIGNAL

7. IDAHO MARYLAND/ RAILROAD

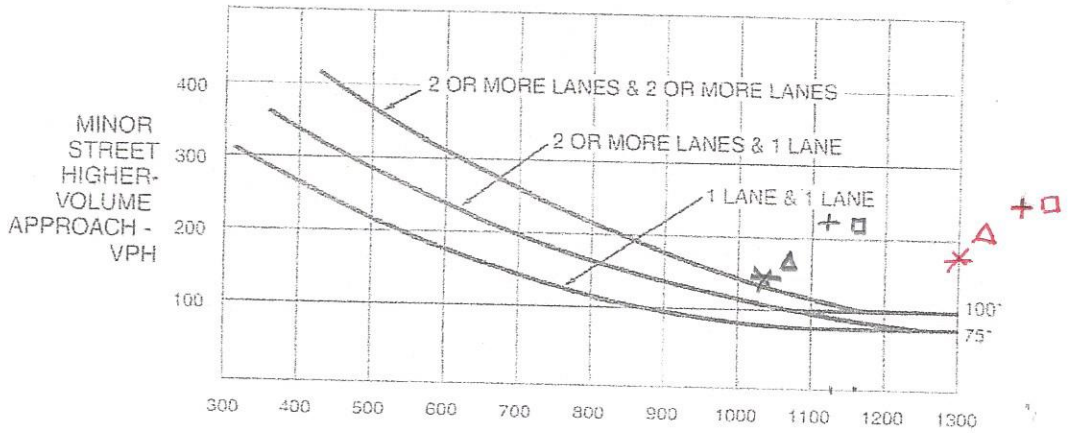
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

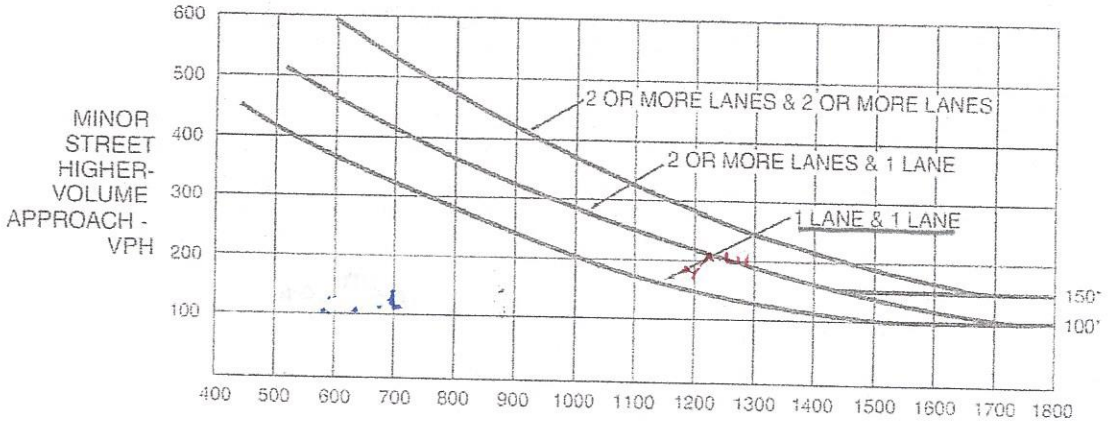


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

	AM	PM
EXIST	*	*
EPAP	△	△
EPAPPP CENTENNIAL	+	+
EPAPPP SR49	□	□
CUM -- SIGNALIZED		

12, BRUNSWICK / IDAHO MARYLAND

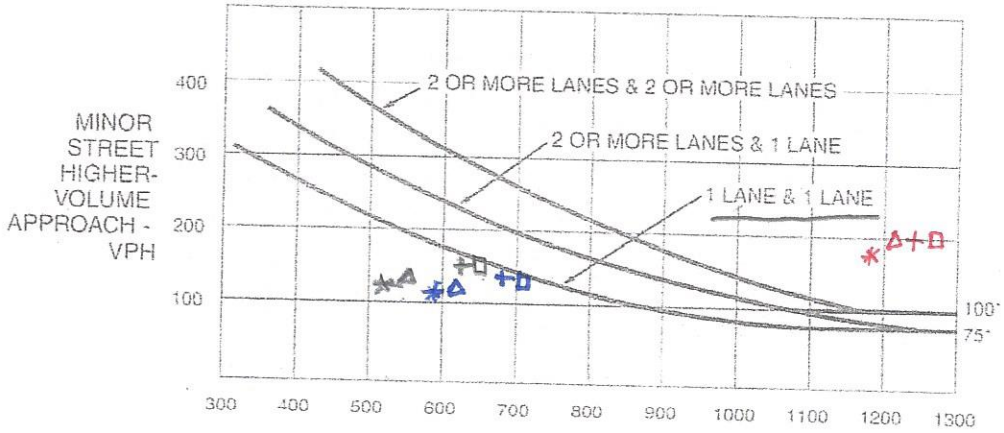
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

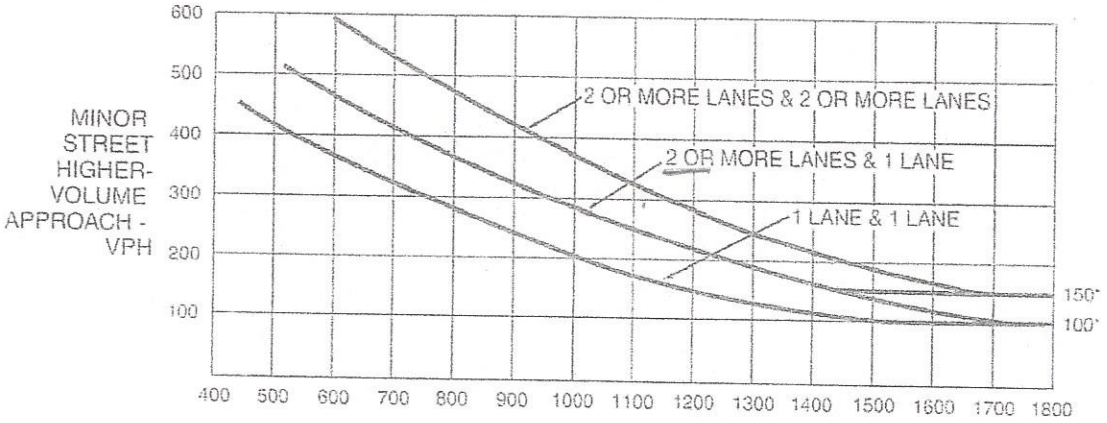
6^{30} AM · 3^{30} PM 6^{30} PM

EXIST
EPAP
EPAPPP CENTENNIAL
EPAPPP SR49

CUMULATIVE- SIGNAL

12. BRUNSWICK/
IDAHO MARYLAND

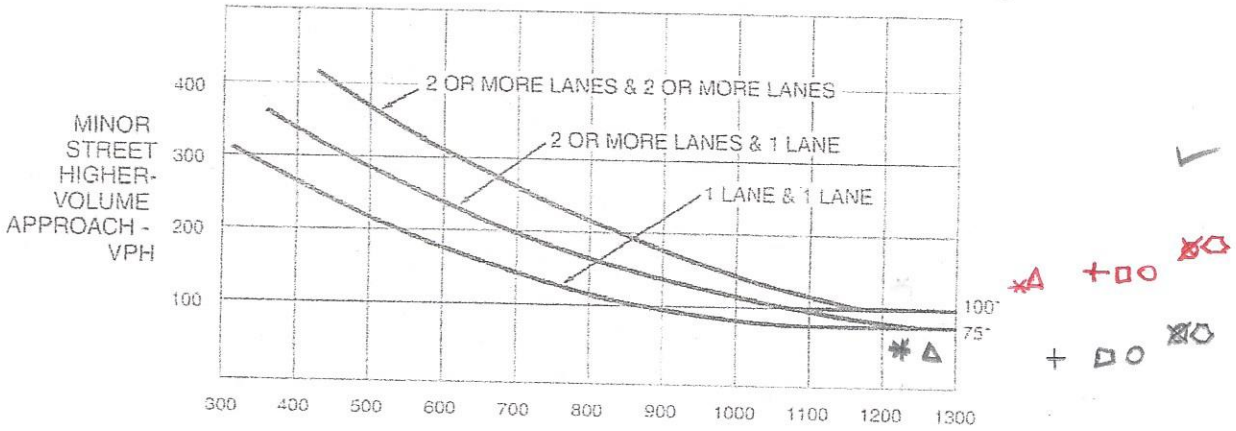
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

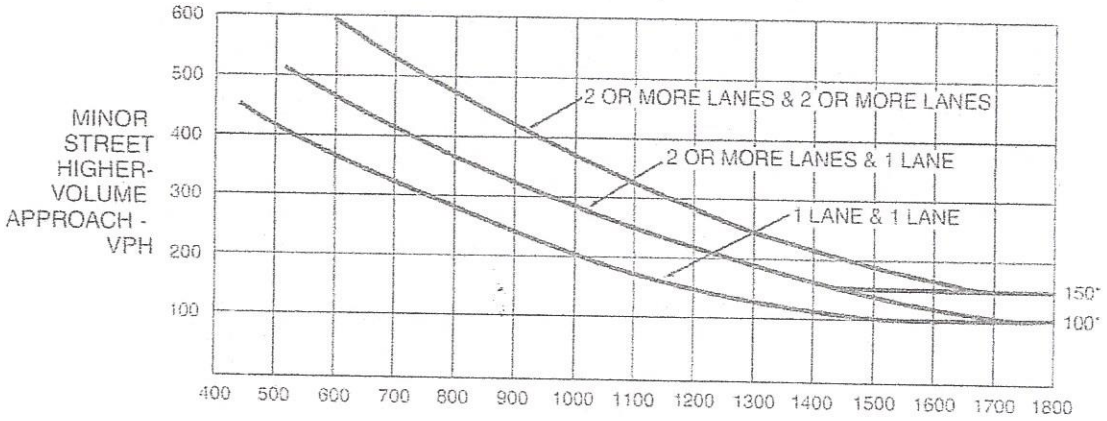


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

	AM	PM
EXIST	✳	✳
EPAP	△	△
EPAPPP CENTENNIAL	+	+
EPAPPP SR49	□	□
CUM	○	○
CPP CENT	⊠	⊠
CPP SR49	⬠	⬠

13. BRUNSWICK/ WHISPERING PINES

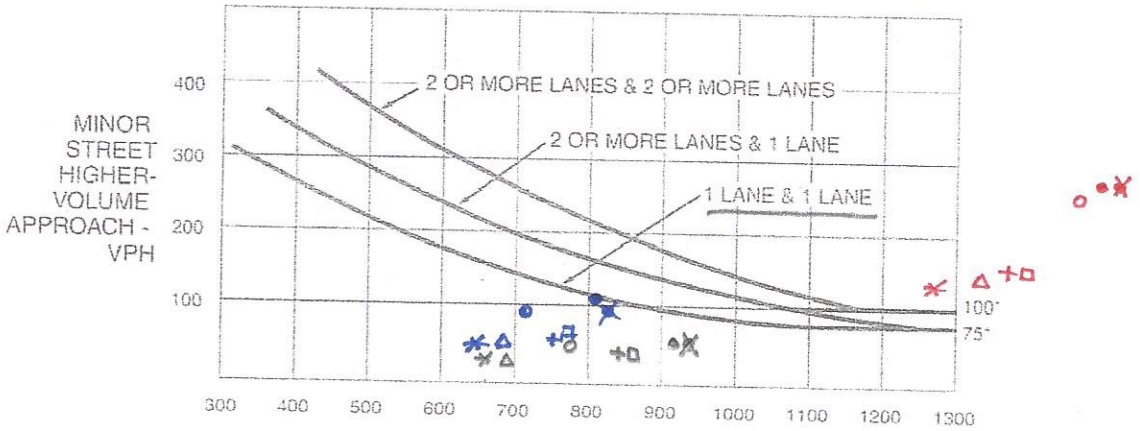
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

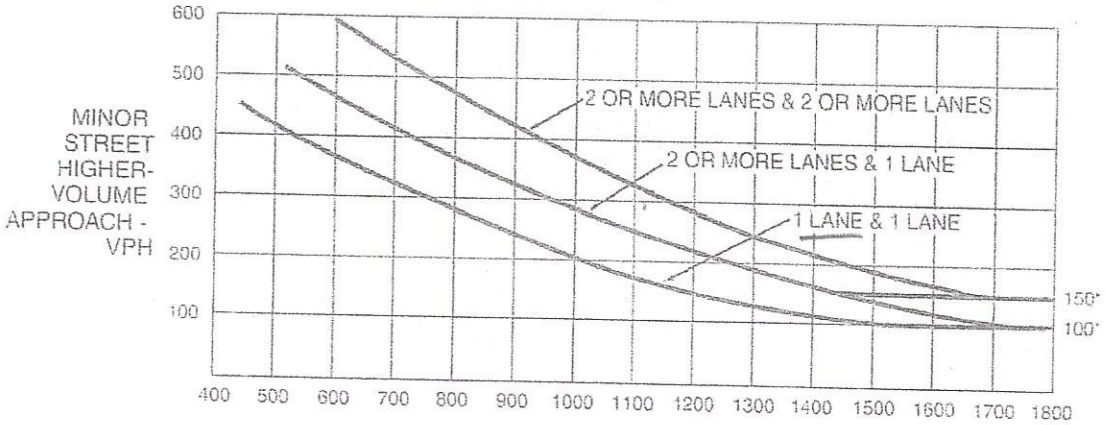


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

	6:30 AM	3:30 PM	6:30 PM
EXIST.	*	*	*
EPAP	△	△	△
EPAPP CENTENNIAL	+	+	+
EPAPP SR49	□	□	□
CUM	○	○	○
CPP CENTENNIAL	●	●	●
CPP SR49	✱	✱	✱

13. BRUNSWICK/ WHISPERING PINES

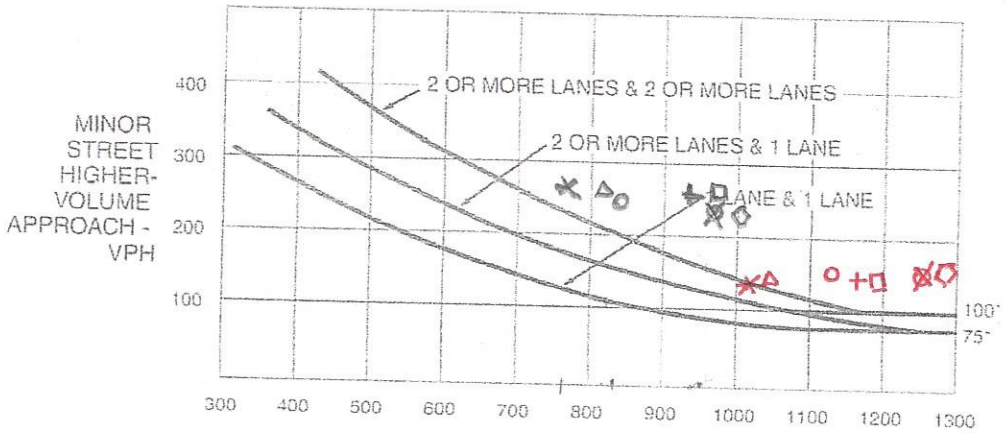
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

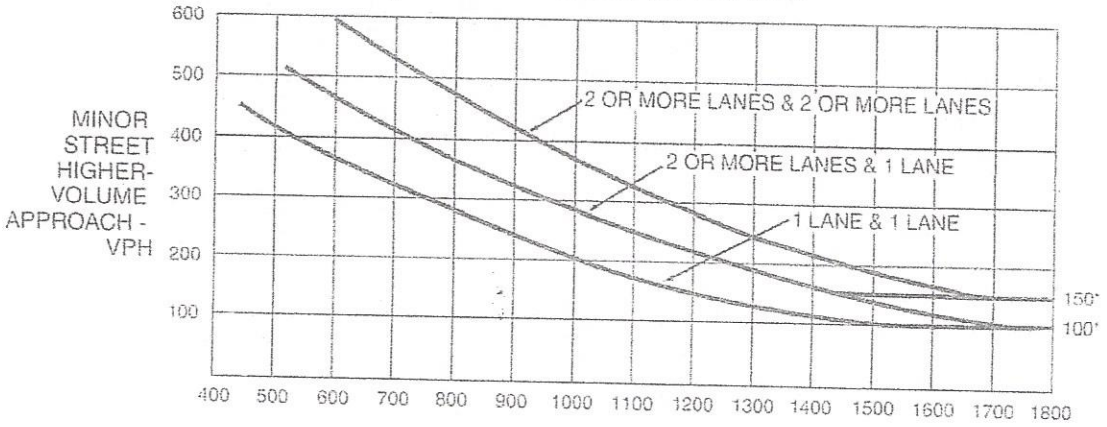


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

	AM	PM
EAST	*	*
EPAP	△	△
EPAPP CENTENNIAL	+	+
EPAPP SR49	□	□
CUM	○	○
CPP CENT	⊗	⊗
CPP SR49	⬡	⬡

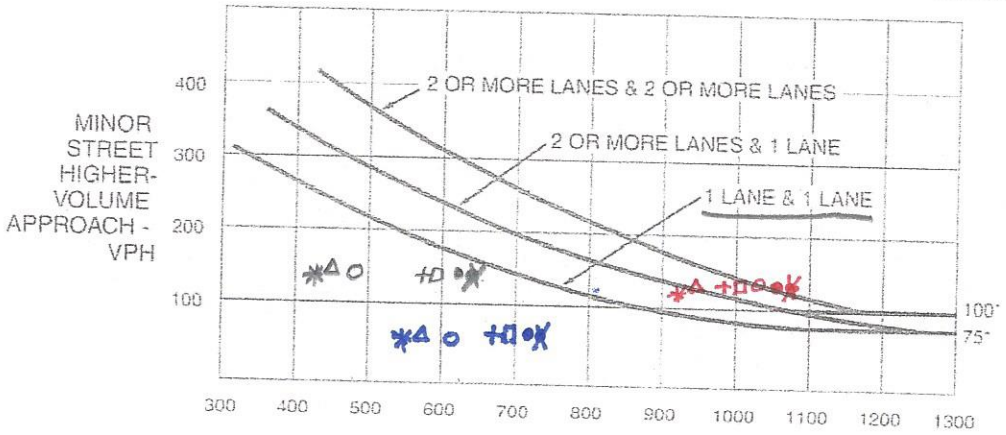
14. BRUNSWICK / E. BENNETT

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



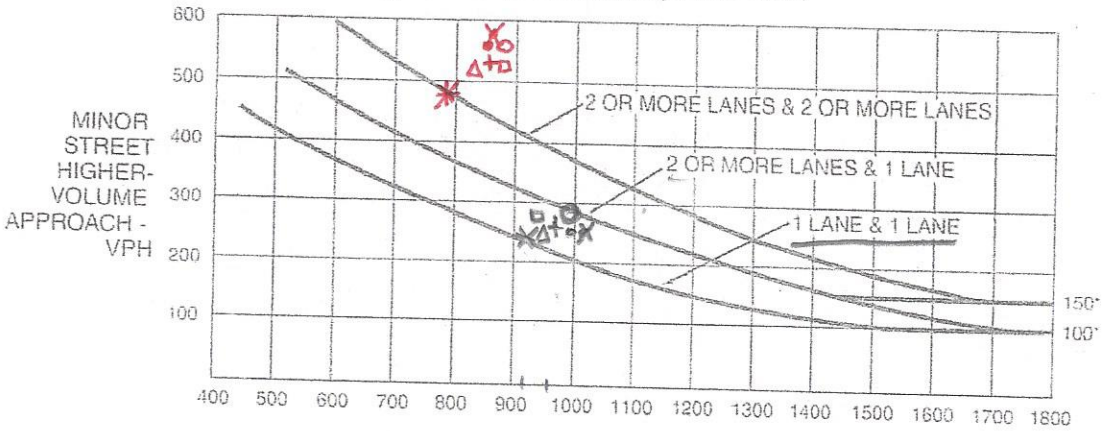
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

6 30 AM . 3 30 PM 6 30 PM

EXIST *
EPAP △
EPAPPP CENTENNIAL +
EPAPPP SR49 □
CUM ○
CPP CENTENNIAL •
CPP SR49 ✗

14. BRUNSWICK/
E. BENNETT

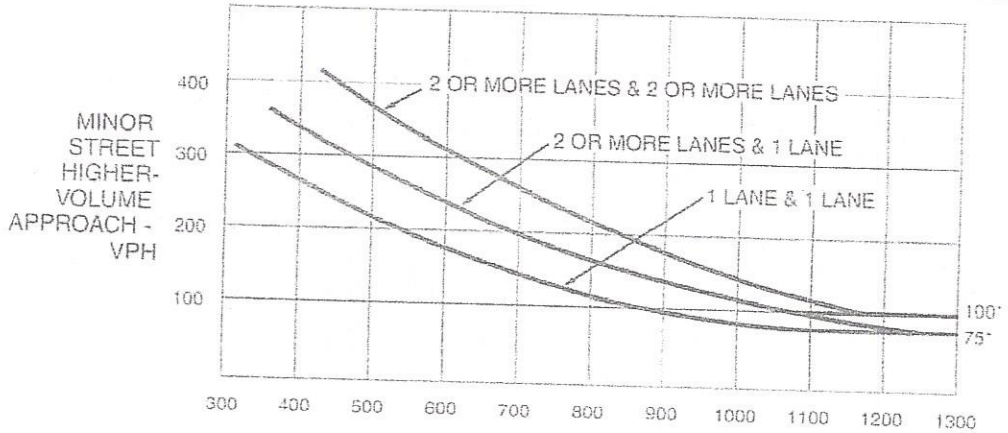
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



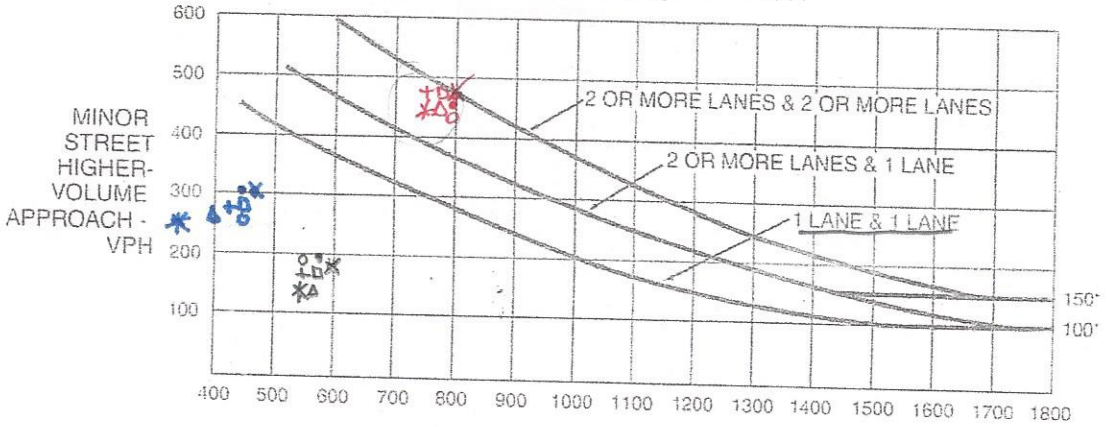
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

AM PM

EXIST
EPAP
EPAPPP CENTENNIAL
EPAPPP SR49
CUM
CUM CENTENNIAL
CUM SR49

15. BRUNSWICK/SR 174

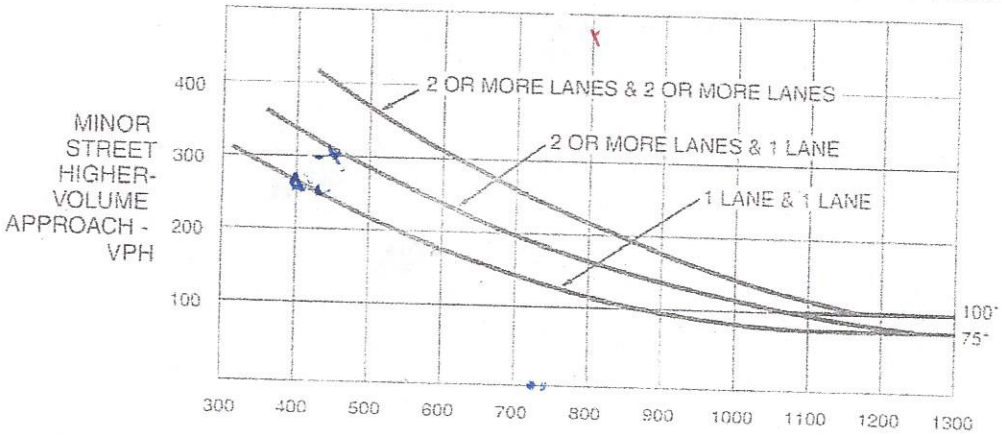
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



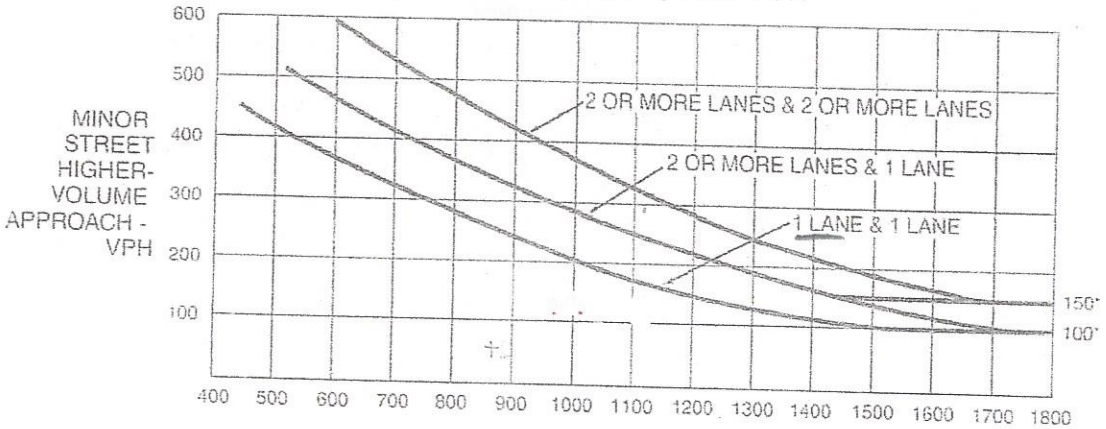
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

6:30 AM 3:30 PM 6:30 PM

EXIST
EPAP
EPAPPP CENTENNIAL
EPAPPP SR49
CUM
CPP CENTENNIAL
CPP SR49

15. BRUNSWICK/SR174

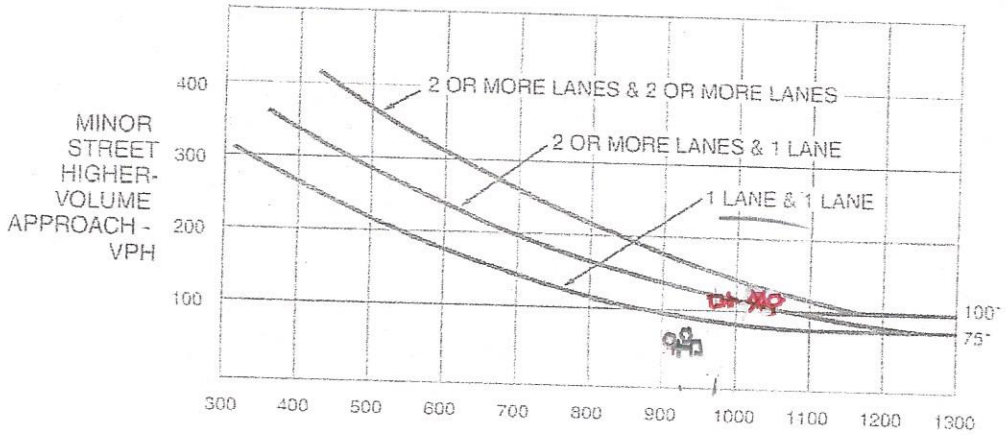
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

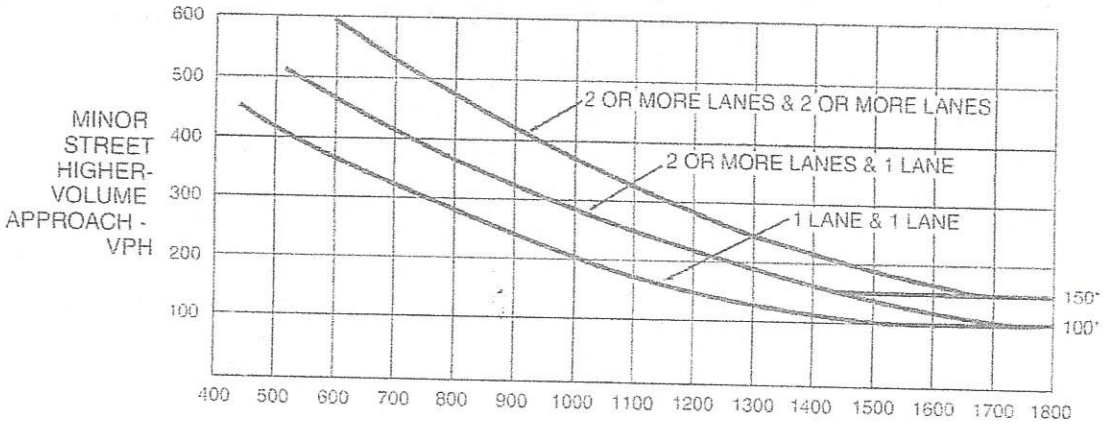


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

	AM	PM
EPAPPP CENTENNIAL	+	+
EPAPPP SR49	□	□
CPP CENT	⊠	⊠
CPP SR49	⬡	⬡

16. BRUNSWICK/ PROJ. DRIVEWAY

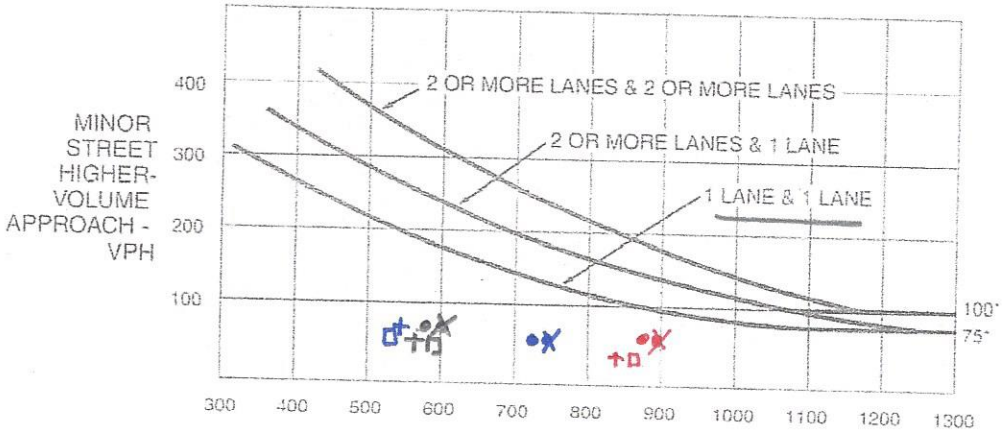
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



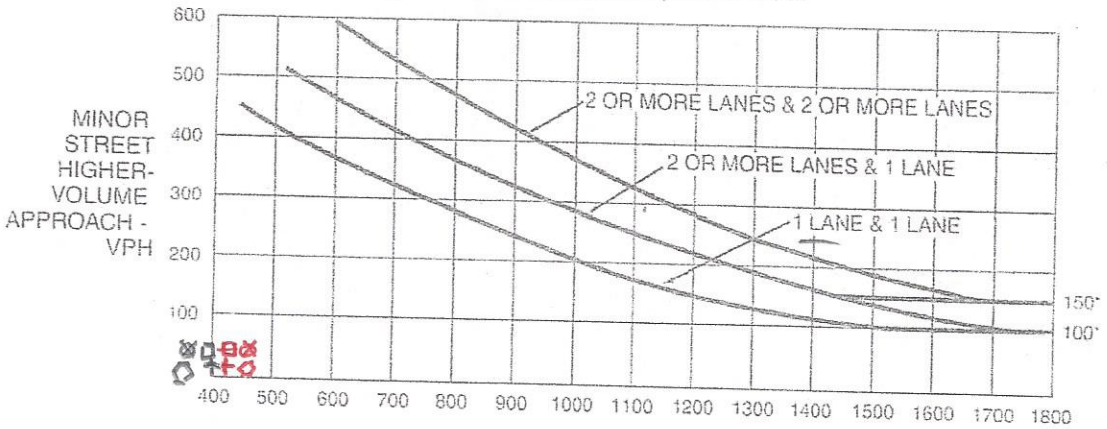
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

6:30 AM 3:30 PM 6:30 PM

EP APPP CENTENNIAL +
EP APPP SR49 □
CPP CENTENNIAL •
CPP SR49 ×

16. BRUNSWICK / DRIVEWAY

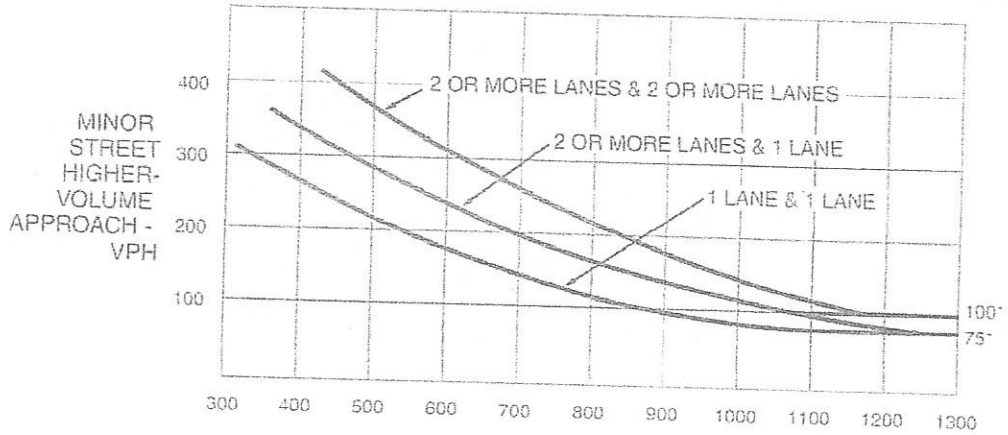
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



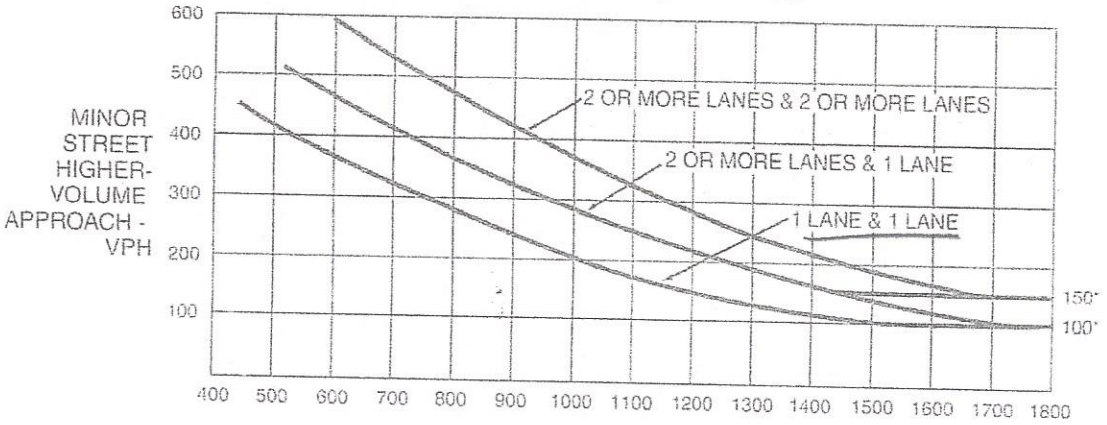
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

AM PM

EPAPPP CENTENNIAL + +
EPAPPP SR49 □ □
CPP CENT ✕ ✕
CPP SR49 ⬡ ⬡

17. E BENNETT/ PROJ. DRIVEWAY

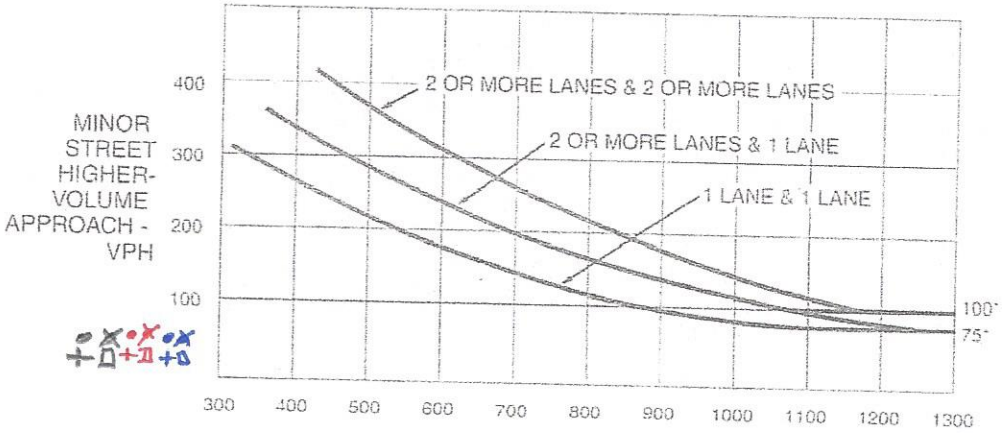
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

6:30 AM 3:30 PM 6:30 PM

EPAPPP CENTENNIAL +
EPAPPP SR49 □
CPP CENTENNIAL ●
CPP SR49 ✕

17. E. BENNETT/ DRIVEWAY

Figure 4C-3. Warrant 3, Peak Hour

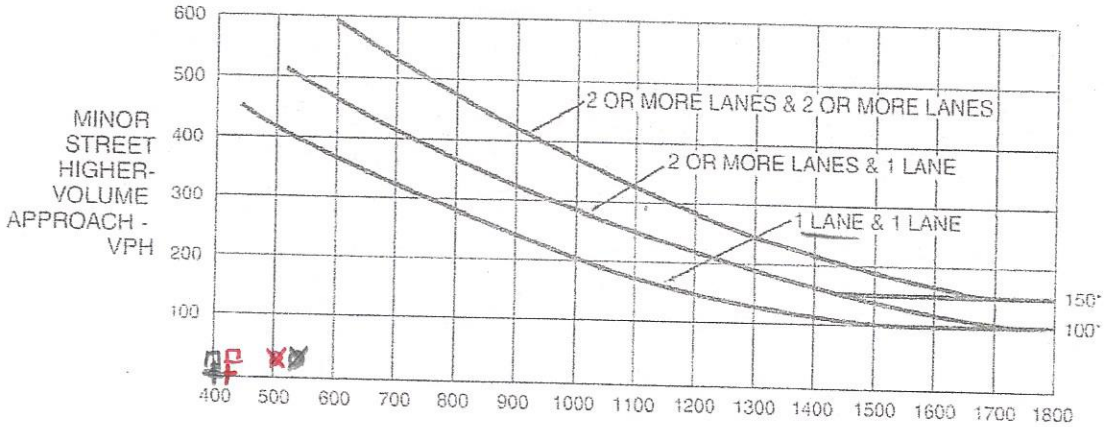


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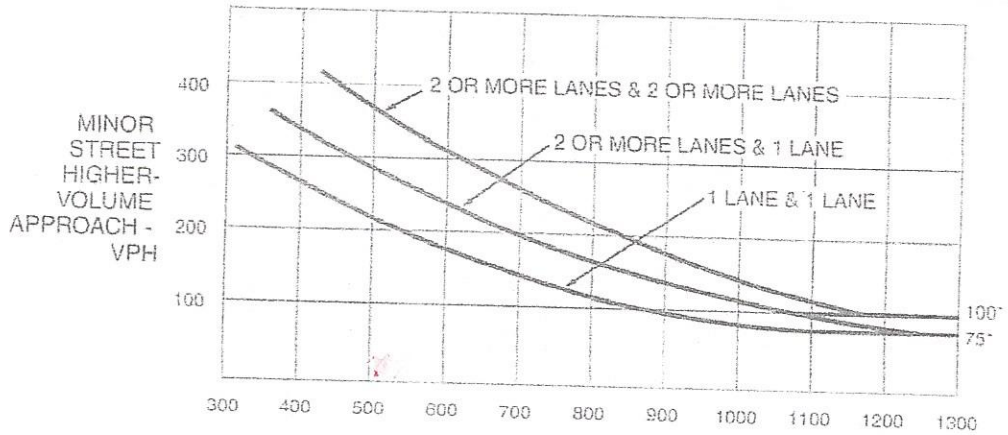
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

	AM	PM
EP APPP CENT	+	+
CPP CENT	⊗	⊗

18. WHISPERING PINES/
PROJ. DRIVEWAY

Figure 4C-3. Warrant 3, Peak Hour

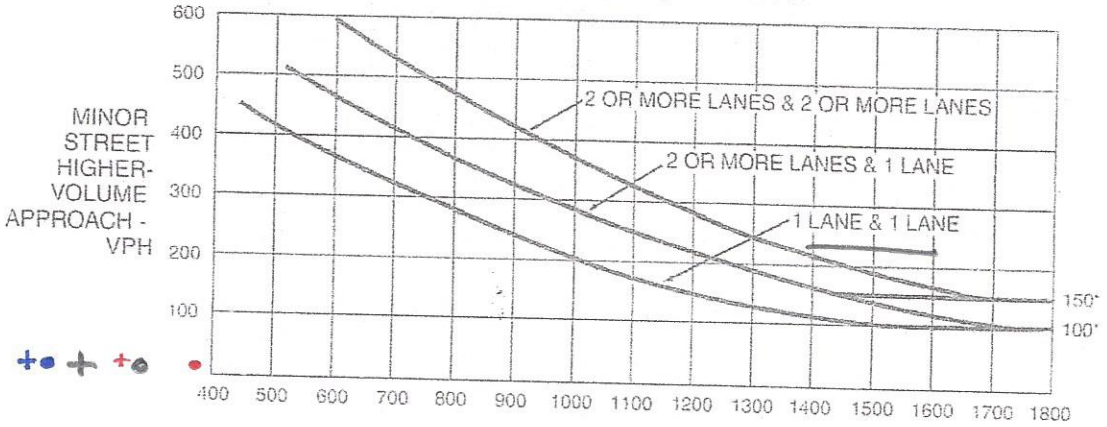


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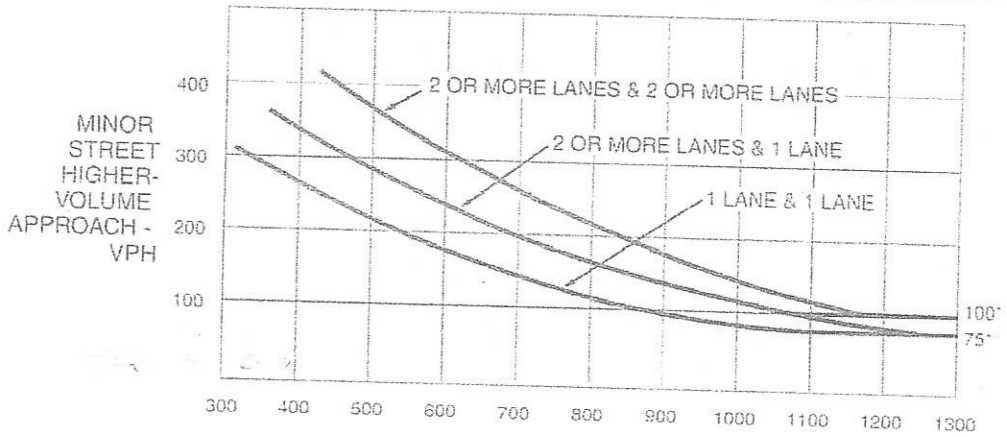
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

6:30 AM 3:30 PM 6:30 PM

EL APPP CENTENNIAL + + +

CPP CENTENNIAL • • •

18. WHISPERING PINES/ DRIVEWAY

Figure 4C-3. Warrant 3, Peak Hour

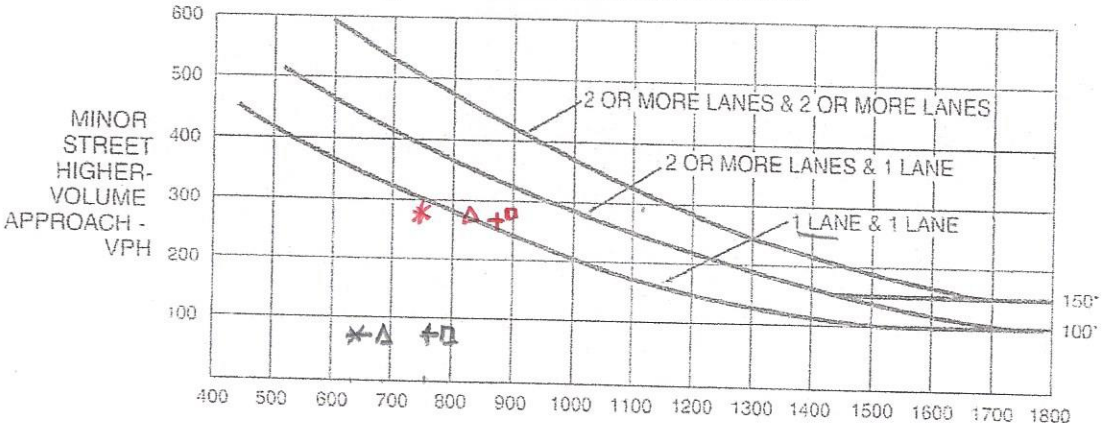


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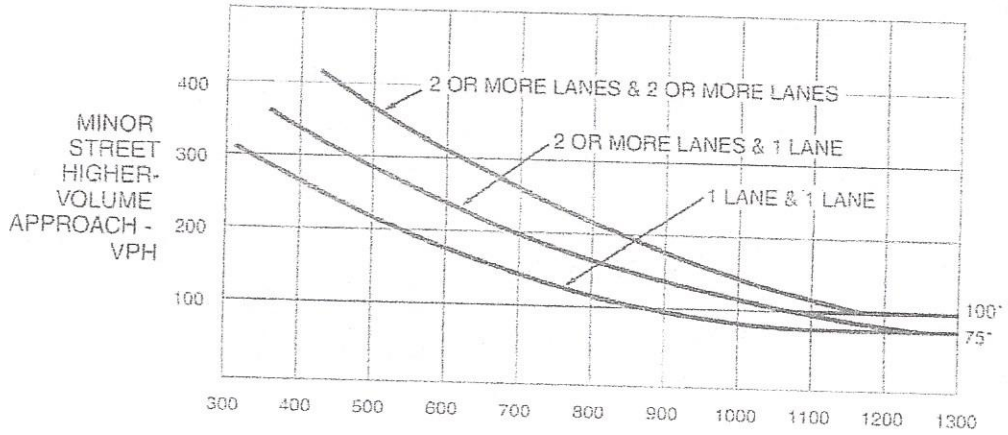
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

	AM	PM
EXIST	*	*
EPAP	Δ	Δ
EPAPPP CENTENNIAL	+	+
EPAPPP SR49	□	□
CUM	– –	SIGNALIZED

19. IDAHO MARYLAND/ CENTENNIAL

Figure 4C-3. Warrant 3, Peak Hour

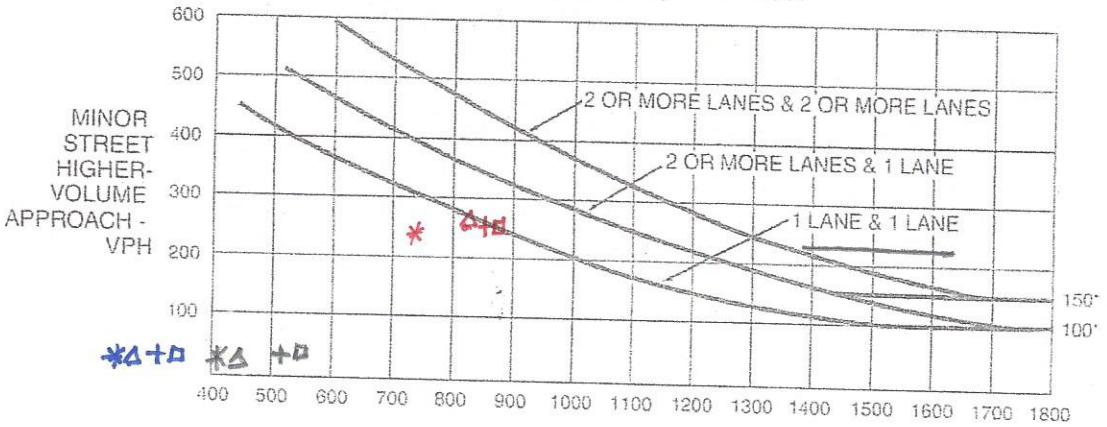


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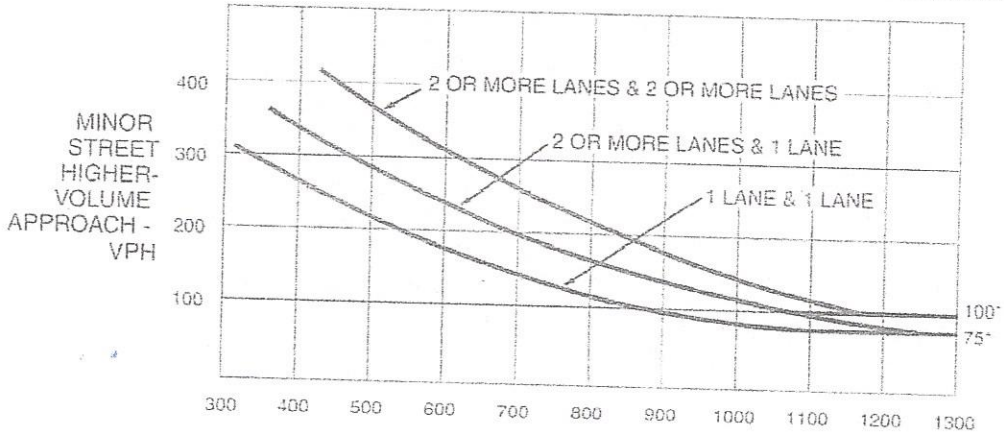
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



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6:30 AM 3:30 PM 6:30 PM

EXIST *
EPAP △
EPAPP CENTENNIAL +
EPAPP SR49 □

CUMULATIVE - SIGNAL

19. IDAHO MARYLAND/CENTENNIAL

Figure 4C-3. Warrant 3, Peak Hour

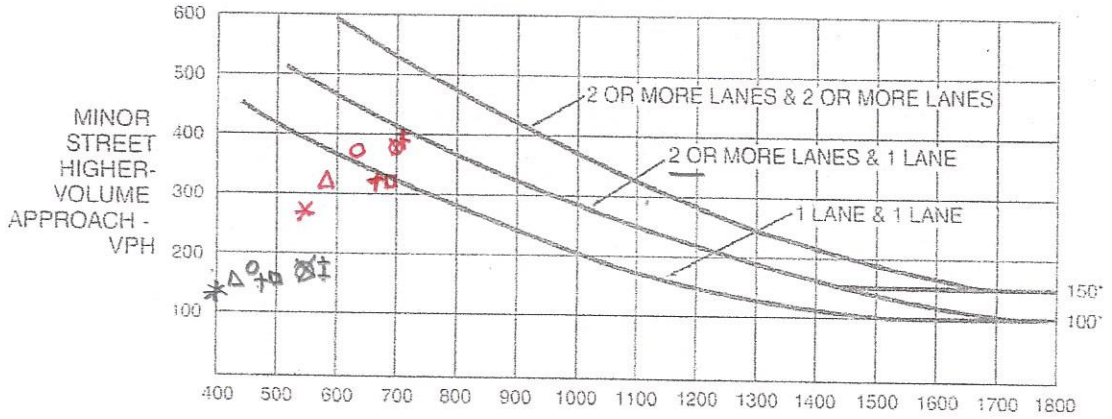

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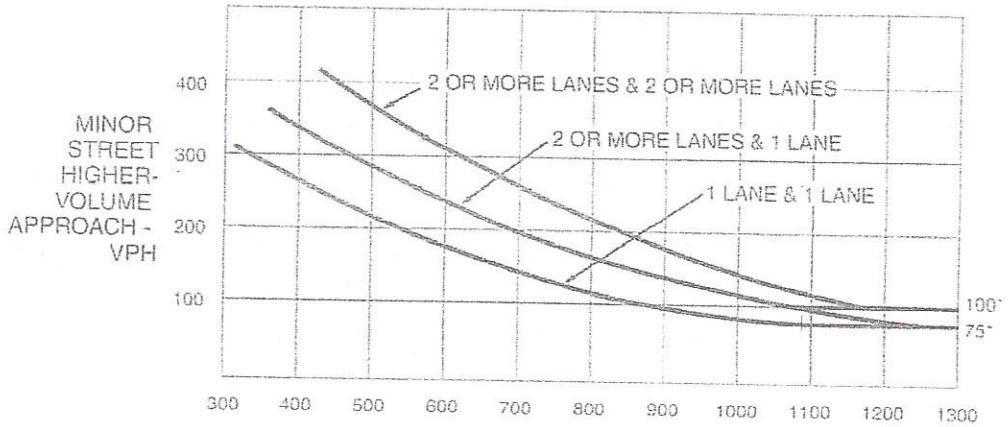
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

	AM	PM
EXIST	*	*
EPAP	△	△
EPAPPP CENTENNIAL	+	+
EPAPPP SR49	□	□
CUM	○	○
CPP CENTENNIAL	⊗	⊗
CPP SR49	‡	‡

20. IDAHO MARYLAND / SUTTON
November 7, 2014

Figure 4C-3. Warrant 3, Peak Hour

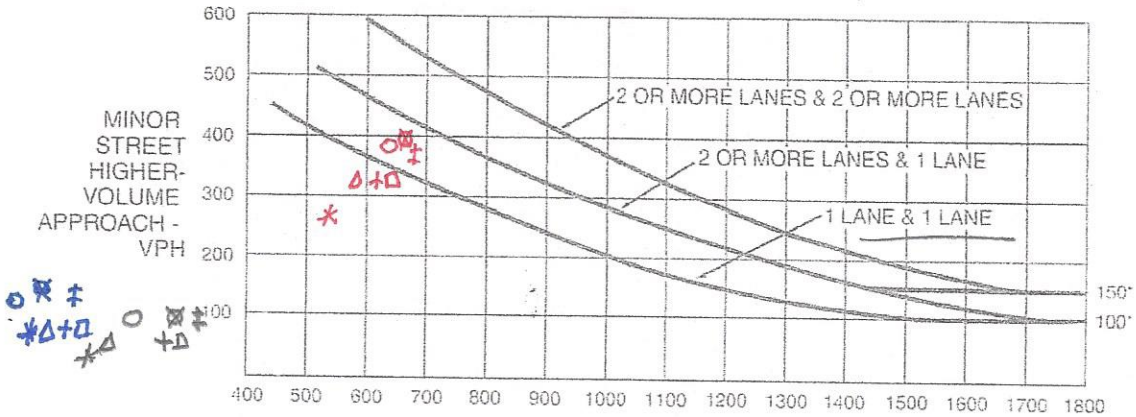


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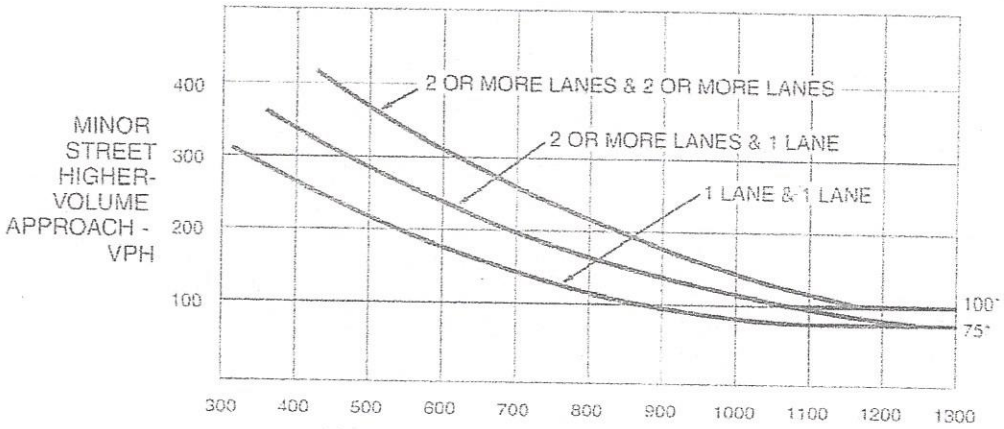
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

	6:30 AM	3:30 PM	6:30 PM
EXIST	*	*	*
EPAP	Δ	Δ	Δ
EPAPPP CENTENNIAL	+	+	+
EPAPPP SR49	□	□	□
CUMULATIVE	○	○	○
CPP CENTENNIAL	⊗	⊗	⊗
CPP - SR49	‡	‡	‡

20. IDAHO MARYLAND / SUTTON

Figure 4C-3. Warrant 3, Peak Hour

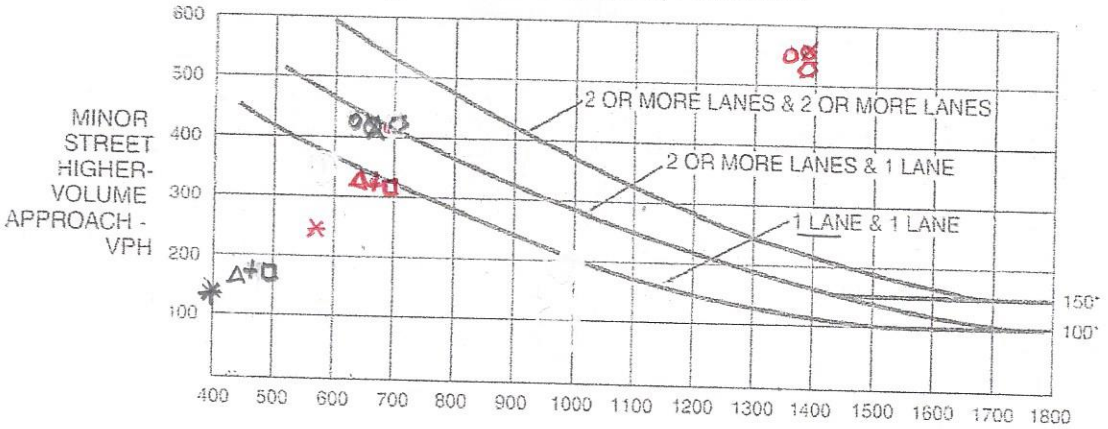


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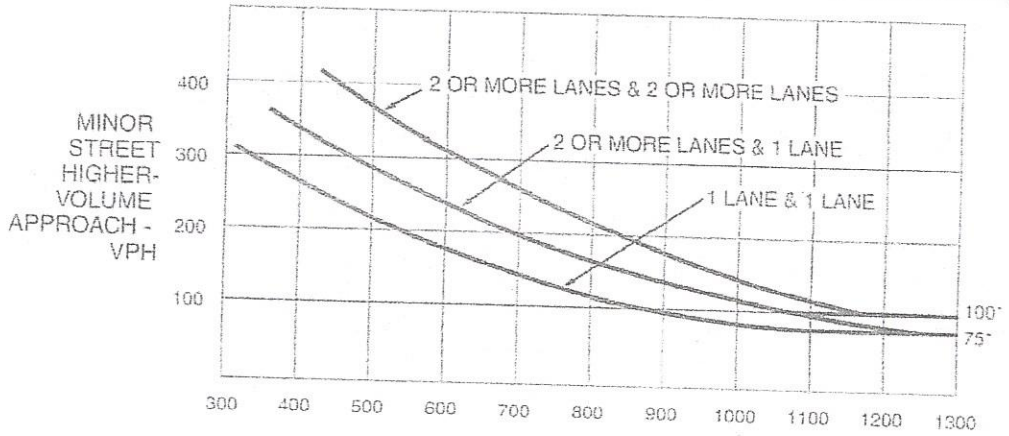
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



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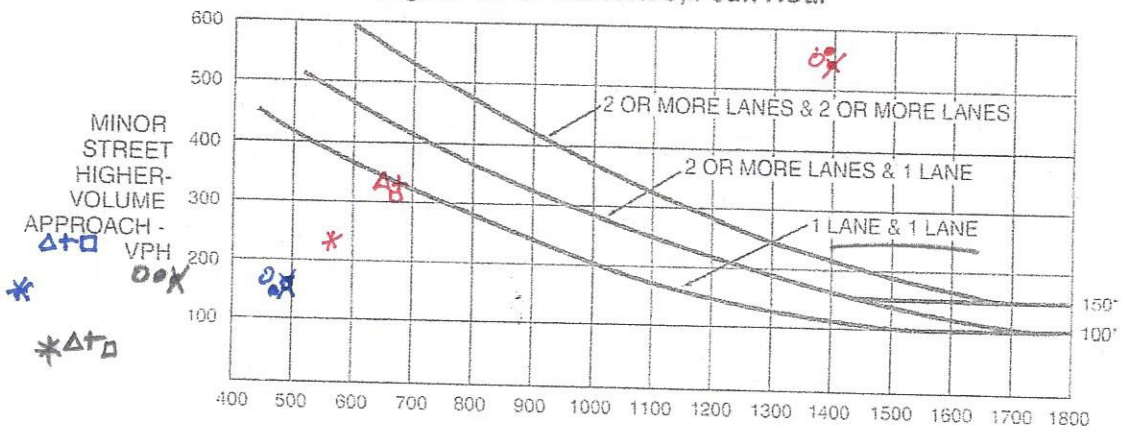
	AM	PM
EXIST	*	*
EPAP	△	△
EPAPP CENTENNIAL	+	+
EPAPP SR49	□	□
CUM	○	○
CPP CENT	⊗	⊗
CPP SR49	⬡	⬡

21. SUTTON/DORSEY

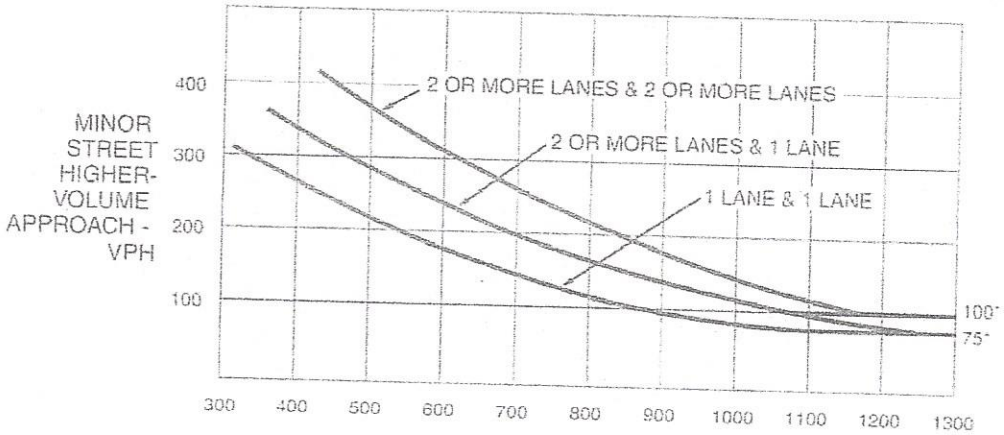
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

6:30 AM 3:30 PM 6:30 PM

EXIST
EPAP
EPAP CENTENNIAL
EPAP SR49
CUMULATIVE
CPP CENTENNIAL
CPP SR49

21. SUTTON / DORSEY

TECHNICAL LOS APPENDIX VII

FOR

IDAHO-MARYLAND MINE PROJECT
TRAFFIC IMPACT ANALYSIS

Nevada County, CA

TRAFFIC INDEX CALCULATIONS

Prepared For:

Rise Grass Valley Inc.

Prepared By:

KD Anderson & Associates, Inc.
3853 Taylor Road, Suite G
Loomis, CA 95650
(916) 660-1555

April 8, 2021

TRAFFIC INDEX CALCULATIONS

NO PROJECT CONDITIONS

PLUS PROJECT CONDITIONS (CENTENNIAL SITE)

PLUS PROJECT CONDITIONS (TO SR 49)

KDA

#3 Brunswick Rd Between Whispering Pines Ln to SR 20/49
No Project Scenario

Count Data by FHWA Vehicle Classification Number

	1	2	3	4	5	6	7	8	9	10	11	Total
Northbound Volume	0	4,429	1,411	20	292	0	1	27	4			6,185
Northbound Percent	0.0%	71.6%	22.8%	0.3%	4.7%	0.0%	0.0%	0.4%	0.1%			100.0%
Southbound Volume	1	4,390	1,394	16	281	1	0	24	3			6,109
Southbound Percent	0.0%	71.9%	22.8%	0.3%	4.6%	0.0%	0.0%	0.4%	0.0%			100.0%

Existing Count Data by
Caltrans Highway Design Manual ESAL Vehicle Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	313	0	28	4	345
Southbound Volume	297	0	24	3	323

Travel Forecasting Volumes

	Base Year	Future Year	Growth Factor
Northbound Volume	6,185	7,390	1.19
Southbound Volume	6,109	7,489	1.23

Future Volumes by

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	374	0	33	5	412
Southbound Volume	364	0	29	3	396

Average of Existing and Future Volumes by Caltrans HDM ESAL Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	343	0	31	4	378
Southbound Volume	330	0	27	3	360

Calculation of 20-Year ESAL and Traffic Index

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Sum of ESAL	Traffic Index (TI)
ESAL Constant	1380	3680	5880	13780		
Northbound	473,512	0	180,678	60,489	714,679	8.5
Southbound	455,641	0	157,059	40,897	653,597	8.5

Note: Total may not equal sum of components due to rounding.
Methodology per California Department of Transportation 2018.

#103 Whispering Pines - Centennial to Crown Point
No Project Scenario

Count Data by FHWA Vehicle Classification Number

	1	2	3	4	5	6	7	8	9	10	11	Total
Northbound Volume	8	1,170	353	3	59	11	1	2	2			1,608
Northbound Percent	0.5%	72.8%	22.0%	0.2%	3.6%	0.7%	0.0%	0.1%	0.1%			100.0%
Southbound Volume	8	1,322	335	5	46	21	3	1	4			1,744
Southbound Percent	0.4%	75.8%	19.2%	0.3%	2.6%	1.2%	0.2%	0.1%	0.2%			100.0%

Existing Count Data by
Caltrans Highway Design Manual ESAL Vehicle Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	61	11	2	2	77
Southbound Volume	51	11	4	4	70

Travel Forecasting Volumes

	Base Year	Future Year	Growth Factor
Northbound Volume	1,608	2,352	1.46
Southbound Volume	1,744	2,443	1.40

Future Volumes by

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	90	17	3	2	112
Southbound Volume	71	16	5	6	98

Average of Existing and Future Volumes by Caltrans HDM ESAL Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	76	14	3	2	94
Southbound Volume	61	14	4	5	84

Calculation of 20-Year ESAL and Traffic Index

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Sum of ESAL	Traffic Index (TI)
ESAL Constant	1380	3680	5880	13780		
Northbound	104,221	51,355	16,894	28,280	200,750	7.5
Southbound	83,932	50,065	25,881	71,680	231,557	7.5

Note: Total may not equal sum of components due to rounding.
Methodology per California Department of Transportation 2018.

#11 Whispering Pines - Brunswick to Crown Point
No Project Scenario

Count Data by FHWA Vehicle Classification Number

	1	2	3	4	5	6	7	8	9	10	11	Total
Eastbound Volume	9	903	322	6	78	12	0	3	5			1,339
Eastbound Percent	0.7%	67.5%	24.1%	0.4%	5.9%	0.9%	0.0%	0.2%	0.3%			100.0%
Westbound Volume	7	798	258	5	95	8	0	3	2			1,176
Westbound Percent	0.6%	67.8%	21.9%	0.4%	8.1%	0.7%	0.0%	0.3%	0.2%			100.0%

Existing Count Data by
Caltrans Highway Design Manual ESAL Vehicle Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Eastbound Volume	84	12	3	5	104
Westbound Volume	100	12	3	2	117

Travel Forecasting Volumes

	Base Year	Future Year	Growth Factor
Eastbound Volume	1,339	2,386	1.78
Westbound Volume	1,176	2,238	1.90

Future Volumes by

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Eastbound Volume	150	21	6	8	186
Westbound Volume	191	23	6	4	223

Average of Existing and Future Volumes by Caltrans HDM ESAL Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Eastbound Volume	117	17	5	6	145
Westbound Volume	146	17	4	3	170

Calculation of 20-Year ESAL and Traffic Index

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Sum of ESAL	Traffic Index (TI)
ESAL Constant	1380	3680	5880	13780		
Eastbound	161,880	61,425	27,263	89,448	340,016	8.0
Westbound	200,979	64,100	25,605	40,004	330,688	8.0

Note: Total may not equal sum of components due to rounding.
Methodology per California Department of Transportation 2018.

#2 Brunswick Rd Between E. Bennett Rd and Whispering Pines Ln
No Project Scenario

Count Data by FHWA Vehicle Classification Number

	1	2	3	4	5	6	7	8	9	10	11	Total
Northbound Volume	6	4,846	2,086	36	667	50	4	27	31			7,752
Northbound Percent	0.1%	62.5%	26.9%	0.5%	8.6%	0.6%	0.0%	0.3%	0.4%			100.0%
Southbound Volume	3	5,099	1,916	30	504	23	0	26	14			7,614
Southbound Percent	0.0%	67.0%	25.2%	0.4%	6.6%	0.3%	0.0%	0.3%	0.2%			100.0%

Existing Count Data by
Caltrans Highway Design Manual ESAL Vehicle Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	703	50	31	31	815
Southbound Volume	534	50	26	14	624

Travel Forecasting Volumes

	Base Year	Future Year	Growth Factor
Northbound Volume	7,752	8,428	1.09
Southbound Volume	7,614	8,452	1.11

Future Volumes by

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	764	55	33	33	886
Southbound Volume	592	56	29	16	693

Average of Existing and Future Volumes by Caltrans HDM ESAL Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	734	53	32	32	850
Southbound Volume	563	53	28	15	659

Calculation of 20-Year ESAL and Traffic Index

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Sum of ESAL	Traffic Index (TI)
ESAL Constant	1380	3680	5880	13780		
Northbound	1,012,440	193,303	188,182	441,012	1,834,937	9.5
Southbound	776,988	195,420	163,361	203,536	1,339,305	9.5

Note: Total may not equal sum of components due to rounding.
Methodology per California Department of Transportation 2018.

#9 Bennett - West of Brunswick Rd
No Project Scenario

Count Data by FHWA Vehicle Classification Number

	1	2	3	4	5	6	7	8	9	10	11	Total
Eastbound Volume	3	497	164	6	45	4	0	1	2			721
Eastbound Percent	0.5%	68.9%	22.7%	0.8%	6.2%	0.5%	0.0%	0.2%	0.2%			100.0%
Westbound Volume	2	531	169	7	50	3	0	1	0			763
Westbound Percent	0.2%	69.6%	22.1%	0.9%	6.6%	0.3%	0.0%	0.2%	0.0%			100.0%

Existing Count Data by
Caltrans Highway Design Manual ESAL Vehicle Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Eastbound Volume	50	4	1	2	57
Westbound Volume	57	4	1	0	62

Travel Forecasting Volumes

	Base Year	Future Year	Growth Factor
Eastbound Volume	722	978	1.35
Westbound Volume	764	1,136	1.49

Future Volumes by

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Eastbound Volume	68	5	2	2	77
Westbound Volume	85	5	2	0	93

Average of Existing and Future Volumes by Caltrans HDM ESAL Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Eastbound Volume	59	4	2	2	67
Westbound Volume	71	5	2	0	78

Calculation of 20-Year ESAL and Traffic Index

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Sum of ESAL	Traffic Index (TI)
ESAL Constant	1380	3680	5880	13780		
Eastbound	81,774	15,886	9,230	27,038	133,928	7.0
Westbound	97,810	16,778	9,749	5,712	130,049	7.0

Note: Total may not equal sum of components due to rounding.
Methodology per California Department of Transportation 2018.

#1 Brunswick Rd Between the Project Site Access and E. Bennett Rd
No Project Scenario

Count Data by FHWA Vehicle Classification Number

	1	2	3	4	5	6	7	8	9	10	11	Total
Northbound Volume	35	3,221	1,072	19	300	13	0	12	7			4,680
Northbound Percent	0.8%	68.8%	22.9%	0.4%	6.4%	0.3%	0.0%	0.3%	0.2%			100.0%
Southbound Volume	29	3,431	1,086	14	155	15	0	7	14			4,752
Southbound Percent	0.6%	72.2%	22.9%	0.3%	3.3%	0.3%	0.0%	0.1%	0.3%			100.0%

Existing Count Data by
Caltrans Highway Design Manual ESAL Vehicle Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	319	13	12	7	352
Southbound Volume	170	13	7	14	204

Travel Forecasting Volumes

	Base Year	Future Year	Growth Factor
Northbound Volume	4,684	5,079	1.08
Southbound Volume	4,752	5,197	1.09

Future Volumes by

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	346	14	13	8	382
Southbound Volume	186	14	8	15	223

Average of Existing and Future Volumes by Caltrans HDM ESAL Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	333	14	13	8	367
Southbound Volume	178	14	8	15	214

Calculation of 20-Year ESAL and Traffic Index

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Sum of ESAL	Traffic Index (TI)
ESAL Constant	1380	3680	5880	13780		
Northbound	459,261	49,857	75,578	105,314	690,010	8.5
Southbound	245,103	50,080	45,139	201,953	542,275	8.5

Note: Total may not equal sum of components due to rounding.
Methodology per California Department of Transportation 2018.

#102 Brunswick Rd Between Whispering Pines Ln to SR 20/49
Plus Project Scenario (Centennial Site)

Count Data by FHWA Vehicle Classification Number

	1	2	3	4	5	6	7	8	9	10	11	Total
Northbound Volume	0	4,429	1,411	20	292	0	1	27	4			6,185
Northbound Percent	0.0%	71.6%	22.8%	0.3%	4.7%	0.0%	0.0%	0.4%	0.1%			100.0%
Southbound Volume	1	4,390	1,394	16	281	1	0	24	3			6,109
Southbound Percent	0.0%	71.9%	22.8%	0.3%	4.6%	0.0%	0.0%	0.4%	0.0%			100.0%

Existing Count Data by
Caltrans Highway Design Manual ESAL Vehicle Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	313	0	28	4	345
Southbound Volume	297	0	24	3	323

Travel Forecasting Volumes

	Base Year	Future Year	Growth Factor
Northbound Volume	6,185	7,393	1.20
Southbound Volume	6,109	7,492	1.23

Future Volumes by

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	374	3	36	7	420
Southbound Volume	364	3	32	5	405

Average of Existing and Future Volumes by Caltrans HDM ESAL Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	343	2	32	5	382
Southbound Volume	330	2	28	4	364

Calculation of 20-Year ESAL and Traffic Index

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Sum of ESAL	Traffic Index (TI)
ESAL Constant	1380	3680	5880	13780		
Northbound	473,616	5,520	189,538	74,283	742,957	8.5
Southbound	455,741	5,520	165,914	54,686	681,862	8.5

Note: Total may not equal sum of components due to rounding.
Methodology per California Department of Transportation 2018.

#103 Whispering Pines - Centennial to Crown Point
Plus Project Scenario (Centennial)

Count Data by FHWA Vehicle Classification Number

	1	2	3	4	5	6	7	8	9	10	11	Total
Eastbound Volume	8	1,170	353	3	59	11	1	2	2			1,608
Eastbound Percent	0.5%	72.8%	22.0%	0.2%	3.6%	0.7%	0.0%	0.1%	0.1%			100.0%
Westbound Volume	8	1,322	335	5	46	21	3	1	4			1,744
Westbound Percent	0.4%	75.8%	19.2%	0.3%	2.6%	1.2%	0.2%	0.1%	0.2%			100.0%

Existing Count Data by
Caltrans Highway Design Manual ESAL Vehicle Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Eastbound Volume	61	11	2	2	77
Westbound Volume	51	11	4	4	70

Travel Forecasting Volumes

	Base Year	Future Year	Growth Factor
Eastbound Volume	1,608	2,366	1.47
Westbound Volume	1,744	2,457	1.41

Future Volumes by

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Eastbound Volume	90	17	17	2	127
Westbound Volume	71	16	19	6	113

Average of Existing and Future Volumes by Caltrans HDM ESAL Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Eastbound Volume	76	14	10	2	102
Westbound Volume	61	14	11	5	91

Calculation of 20-Year ESAL and Traffic Index

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Sum of ESAL	Traffic Index (TI)
ESAL Constant	1380	3680	5880	13780		
Eastbound	104,589	51,537	58,114	28,380	242,620	7.5
Westbound	84,213	50,232	67,127	71,920	273,492	7.5

Note: Total may not equal sum of components due to rounding.
Methodology per California Department of Transportation 2018.

#104 Whispering Pines - Brunswick to Crown Point
Plus Project Scenario (Centennial)

Count Data by FHWA Vehicle Classification Number

	1	2	3	4	5	6	7	8	9	10	11	Total
Eastbound Volume	9	903	322	6	78	12	0	3	5			1,339
Eastbound Percent	0.7%	67.5%	24.1%	0.4%	5.9%	0.9%	0.0%	0.2%	0.3%			100.0%
Westbound Volume	7	798	258	5	95	8	0	3	2			1,176
Westbound Percent	0.6%	67.8%	21.9%	0.4%	8.1%	0.7%	0.0%	0.3%	0.2%			100.0%

Existing Count Data by
Caltrans Highway Design Manual ESAL Vehicle Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Eastbound Volume	84	12	3	5	104
Westbound Volume	100	12	3	2	117

Travel Forecasting Volumes

	Base Year	Future Year	Growth Factor
Eastbound Volume	1,339	2,400	1.79
Westbound Volume	1,176	2,252	1.91

Future Volumes by

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Eastbound Volume	151	22	20	8	201
Westbound Volume	192	23	20	4	239

Average of Existing and Future Volumes by Caltrans HDM ESAL Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Eastbound Volume	118	17	12	7	153
Westbound Volume	146	17	11	3	178

Calculation of 20-Year ESAL and Traffic Index

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Sum of ESAL	Traffic Index (TI)
ESAL Constant	1380	3680	5880	13780		
Eastbound	162,489	61,656	68,525	89,784	382,454	8.0
Westbound	201,803	64,362	66,870	40,168	373,204	8.0

Note: Total may not equal sum of components due to rounding.
Methodology per California Department of Transportation 2018.

#105 Brunswick Rd Between E. Bennett Rd and Whispering Pines Ln
Plus Project Scenario (Centennial)

Count Data by FHWA Vehicle Classification Number

	1	2	3	4	5	6	7	8	9	10	11	Total
Northbound Volume	6	4,846	2,086	36	667	50	4	27	31			7,752
Northbound Percent	0.1%	62.5%	26.9%	0.5%	8.6%	0.6%	0.0%	0.3%	0.4%			100.0%
Southbound Volume	3	5,099	1,916	30	504	23	0	26	14			7,614
Southbound Percent	0.0%	67.0%	25.2%	0.4%	6.6%	0.3%	0.0%	0.3%	0.2%			100.0%

Existing Count Data by
Caltrans Highway Design Manual ESAL Vehicle Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	703	50	31	31	815
Southbound Volume	534	50	26	14	624

Travel Forecasting Volumes

	Base Year	Future Year	Growth Factor
Northbound Volume	7,752	8,480	1.09
Southbound Volume	7,614	8,504	1.12

Future Volumes by

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	769	58	86	36	948
Southbound Volume	596	59	81	18	754

Average of Existing and Future Volumes by Caltrans HDM ESAL Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	736	54	58	33	881
Southbound Volume	565	55	54	16	689

Calculation of 20-Year ESAL and Traffic Index

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Sum of ESAL	Traffic Index (TI)
ESAL Constant	1380	3680	5880	13780		
Northbound	1,015,694	199,444	341,667	456,209	2,013,014	10.0
Southbound	779,502	201,572	316,770	217,975	1,515,819	9.5

Note: Total may not equal sum of components due to rounding.
Methodology per California Department of Transportation 2018.

#106 Bennett - West of Brunswick Rd
Plus Project Scenario (Centennial)

Count Data by FHWA Vehicle Classification Number

	1	2	3	4	5	6	7	8	9	10	11	Total
Eastbound Volume	3	497	164	6	45	4	0	1	2			721
Eastbound Percent	0.5%	68.9%	22.7%	0.8%	6.2%	0.5%	0.0%	0.2%	0.2%			100.0%
Westbound Volume	2	531	169	7	50	3	0	1	0			763
Westbound Percent	0.2%	69.6%	22.1%	0.9%	6.6%	0.3%	0.0%	0.2%	0.0%			100.0%

Existing Count Data by
Caltrans Highway Design Manual ESAL Vehicle Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Eastbound Volume	50	4	1	2	57
Westbound Volume	57	4	1	0	62

Travel Forecasting Volumes

	Base Year	Future Year	Growth Factor
Eastbound Volume	722	1,030	1.43
Westbound Volume	764	1,136	1.49

Future Volumes by

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Eastbound Volume	72	8	54	4	138
Westbound Volume	85	5	2	0	93

Average of Existing and Future Volumes by Caltrans HDM ESAL Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Eastbound Volume	61	6	28	3	98
Westbound Volume	71	5	2	0	78

Calculation of 20-Year ESAL and Traffic Index

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Sum of ESAL	Traffic Index (TI)
ESAL Constant	1380	3680	5880	13780		
Eastbound	84,276	21,891	162,392	41,645	310,205	8.0
Westbound	97,810	16,778	9,749	5,712	130,049	7.0

Note: Total may not equal sum of components due to rounding.
Methodology per California Department of Transportation 2018.

#107 Brunswick Rd Between the Project Site Access and E. Bennett Rd
Plus Project Scenario (Centennial)

Count Data by FHWA Vehicle Classification Number

	1	2	3	4	5	6	7	8	9	10	11	Total
Northbound Volume	35	3,221	1,072	19	300	13	0	12	7			4,680
Northbound Percent	0.8%	68.8%	22.9%	0.4%	6.4%	0.3%	0.0%	0.3%	0.2%			100.0%
Southbound Volume	29	3,431	1,086	14	155	15	0	7	14			4,752
Southbound Percent	0.6%	72.2%	22.9%	0.3%	3.3%	0.3%	0.0%	0.1%	0.3%			100.0%

Existing Count Data by
Caltrans Highway Design Manual ESAL Vehicle Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	319	13	12	7	352
Southbound Volume	170	13	7	14	204

Travel Forecasting Volumes

	Base Year	Future Year	Growth Factor
Northbound Volume	4,684	5,079	1.08
Southbound Volume	4,752	5,249	1.10

Future Volumes by

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	346	14	13	8	382
Southbound Volume	187	17	60	17	282

Average of Existing and Future Volumes by Caltrans HDM ESAL Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	333	14	13	8	367
Southbound Volume	179	15	34	16	243

Calculation of 20-Year ESAL and Traffic Index

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Sum of ESAL	Traffic Index (TI)
ESAL Constant	1380	3680	5880	13780		
Northbound	459,261	49,857	75,578	105,314	690,010	8.5
Southbound	246,384	55,862	198,255	216,789	717,289	8.5

Note: Total may not equal sum of components due to rounding.
Methodology per California Department of Transportation 2018.

#102 Brunswick Rd Between Whispering Pines Ln to SR 20/49
Plus Project Scenario (To SR 49)

Count Data by FHWA Vehicle Classification Number

	1	2	3	4	5	6	7	8	9	10	11	Total
Northbound Volume	0	4,429	1,411	20	292	0	1	27	4			6,185
Northbound Percent	0.0%	71.6%	22.8%	0.3%	4.7%	0.0%	0.0%	0.4%	0.1%			100.0%
Southbound Volume	1	4,390	1,394	16	281	1	0	24	3			6,109
Southbound Percent	0.0%	71.9%	22.8%	0.3%	4.6%	0.0%	0.0%	0.4%	0.0%			100.0%

Existing Count Data by
Caltrans Highway Design Manual ESAL Vehicle Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	313	0	28	4	345
Southbound Volume	297	0	24	3	323

Travel Forecasting Volumes

	Base Year	Future Year	Growth Factor
Northbound Volume	6,185	7,429	1.20
Southbound Volume	6,109	7,528	1.23

Future Volumes by

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	376	3	73	7	458
Southbound Volume	366	3	69	5	442

Average of Existing and Future Volumes by Caltrans HDM ESAL Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	344	2	50	5	401
Southbound Volume	331	2	46	4	383

Calculation of 20-Year ESAL and Traffic Index

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Sum of ESAL	Traffic Index (TI)
ESAL Constant	1380	3680	5880	13780		
Northbound	474,872	5,520	295,857	74,443	850,693	9.0
Southbound	456,948	5,520	272,170	54,794	789,432	8.5

Note: Total may not equal sum of components due to rounding.
Methodology per California Department of Transportation 2018.

#105 Brunswick Rd Between E. Bennett Rd and Whispering Pines Ln
Plus Project Scenario (To SR 49)

Count Data by FHWA Vehicle Classification Number

	1	2	3	4	5	6	7	8	9	10	11	Total
Northbound Volume	6	4,846	2,086	36	667	50	4	27	31			7,752
Northbound Percent	0.1%	62.5%	26.9%	0.5%	8.6%	0.6%	0.0%	0.3%	0.4%			100.0%
Southbound Volume	3	5,099	1,916	30	504	23	0	26	14			7,614
Southbound Percent	0.0%	67.0%	25.2%	0.4%	6.6%	0.3%	0.0%	0.3%	0.2%			100.0%

Existing Count Data by
Caltrans Highway Design Manual ESAL Vehicle Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	703	50	31	31	815
Southbound Volume	534	50	26	14	624

Travel Forecasting Volumes

	Base Year	Future Year	Growth Factor
Northbound Volume	7,752	8,480	1.09
Southbound Volume	7,614	8,504	1.12

Future Volumes by

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	769	58	86	36	948
Southbound Volume	596	59	81	18	754

Average of Existing and Future Volumes by Caltrans HDM ESAL Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	736	54	58	33	881
Southbound Volume	565	55	54	16	689

Calculation of 20-Year ESAL and Traffic Index

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Sum of ESAL	Traffic Index (TI)
ESAL Constant	1380	3680	5880	13780		
Northbound	1,015,694	199,444	341,667	456,209	2,013,014	10.0
Southbound	779,502	201,572	316,770	217,975	1,515,819	9.5

Note: Total may not equal sum of components due to rounding.
Methodology per California Department of Transportation 2018.

#106 Bennett - West of Brunswick Rd
Plus Project Scenario (To SR 49)

Count Data by FHWA Vehicle Classification Number

	1	2	3	4	5	6	7	8	9	10	11	Total
Northbound Volume	3	497	164	6	45	4	0	1	2			721
Northbound Percent	0.5%	68.9%	22.7%	0.8%	6.2%	0.5%	0.0%	0.2%	0.2%			100.0%
Southbound Volume	2	531	169	7	50	3	0	1	0			763
Southbound Percent	0.2%	69.6%	22.1%	0.9%	6.6%	0.3%	0.0%	0.2%	0.0%			100.0%

Existing Count Data by
Caltrans Highway Design Manual ESAL Vehicle Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	50	4	1	2	57
Southbound Volume	57	4	1	0	62

Travel Forecasting Volumes

	Base Year	Future Year	Growth Factor
Northbound Volume	722	1,030	1.43
Southbound Volume	764	1,136	1.49

Future Volumes by

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	72	8	54	4	138
Southbound Volume	85	5	2	0	93

Average of Existing and Future Volumes by Caltrans HDM ESAL Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	61	6	28	3	98
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Northbound	84,276	21,891	162,392	41,645	310,205	8.0
Southbound	97,810	16,778	9,749	5,712	130,049	7.0

Note: Total may not equal sum of components due to rounding.
Methodology per California Department of Transportation 2018.

#107 Brunswick Rd Between the Project Site Access and E. Bennett Rd
Plus Project Scenario (To SR 49)

Count Data by FHWA Vehicle Classification Number

	1	2	3	4	5	6	7	8	9	10	11	Total
Northbound Volume	35	3,221	1,072	19	300	13	0	12	7			4,680
Northbound Percent	0.8%	68.8%	22.9%	0.4%	6.4%	0.3%	0.0%	0.3%	0.2%			100.0%
Southbound Volume	29	3,431	1,086	14	155	15	0	7	14			4,752
Southbound Percent	0.6%	72.2%	22.9%	0.3%	3.3%	0.3%	0.0%	0.1%	0.3%			100.0%

Existing Count Data by
Caltrans Highway Design Manual ESAL Vehicle Classifications

	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	319	13	12	7	352
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Travel Forecasting Volumes

	Base Year	Future Year	Growth Factor
Northbound Volume	4,684	5,079	1.08
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	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
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	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Total
Northbound Volume	333	14	13	8	367
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	2-Axle Trucks or Buses	3-Axle Trucks or Buses	4-Axle Trucks	5 or More -Axle Trucks	Sum of ESAL	Traffic Index (TI)
ESAL Constant	1380	3680	5880	13780		
Northbound	459,261	49,857	75,578	105,314	690,010	8.5
Southbound	246,384	55,862	198,255	216,789	717,289	8.5

Note: Total may not equal sum of components due to rounding.
Methodology per California Department of Transportation 2018.

TECHNICAL LOS APPENDIX VIII

FOR

IDAHO-MARYLAND MINE PROJECT
TRAFFIC IMPACT ANALYSIS

Nevada County, CA

PROJECT TRIP CALCULATIONS

Prepared For:

Rise Grass Valley Inc.

Prepared By:

KD Anderson & Associates, Inc.
3853 Taylor Road, Suite G
Loomis, CA 95650
(916) 660-1555

April 8, 2021

PROJECT TRIP CALCULATIONS

PROJECT TRIP GENERATION

KDA

EMPLOYEE TRAFFIC

Employee Trips (Full Mine Production)				
Brunswick Site	**Incoming**	**Outgoing**		
7 AM shiftchange - Monday -Friday	107	67	312	Total Employees
7 AM shiftchange - Saturday- Sunday	67	67	107	Maximum Employees onsite
3:30 PM shift change - Monday - Friday		40		
7 PM shiftchange - Monday- Sunday	67	67		
Centennial Site	**Incoming**	**Outgoing**		
7 AM shiftchange - Monday -Friday	4			
3:30 PM shift change - Monday - Friday		4		

HAUL TRAFFIC

Engineered Fill Trucking - Brunswick to Centennial			**Truck Type:**	Aggregate dump truck with capacity of 20 tons.
Average daily trucking	1000	tons		Typical: Standard Duty SuperTag
Maximum daily trucking	2000	tons		
Truck payload	20	tons	**Hauling Schedule:**	24 hs per day, 7 days per week
Average daily trucking	50.0	trips per day	**Duration:**	Approx. 5 - 6 yrs
Maximum daily trucking	100.0	trips per day		
Concentrate Trucking - Brunswick to west coast port or Nevada State			**Truck Type:**	Semi-truck with flat bed trailer. Capacity required: 20 tons.
Average daily trucking	20	tons		Concentrate is packaged in 2-ton bags.
Maximum daily trucking	100	tons		
Truck payload	20	tons	**Hauling Schedule:**	Flexible.
Average daily trucking	1.0	trips per day		Plan for 7 days per week outside rush hour times.
Maximum daily trucking	5.0	trips per day		

MATERIALS & SUPPLIES TRAFFIC

Materials & Supplys - Brunswick			* Anticipated to occur during typical business hours, weekdays.
	Average per week	**Maximum per Day**	
Fuel Trucks	11.2	2	12,000 gallons per day consumption = 84,000 gallons per week = ~11.2 fuel trucks per week
Explosives Trucks	0.3	1	
Cement Delivery	8.8	2	Assume 5% cement content average = 9,125 tons per year = 175 tons per week = 8.75 trucks per week
Freight Trucks	2.7	3	
Outside Services (light vehicles)	21.0	4	Outside services includes vendors, deliveries, and other ancillary vehicle traffic to support operations.
Total	44.0	12	
Materials & Supplys - Centennial			
	Average per week	**Maximum per Day**	
Fuel Trucks	1.5	1	1200 gallons per day consumption = 8400 gallons per week = ~1.5 fuel trucks per week

TECHNICAL LOS APPENDIX IX

FOR

IDAHO-MARYLAND MINE PROJECT
TRAFFIC IMPACT ANALYSIS

Nevada County, CA

FAIR SHARE PERCENTAGES & COST

Prepared For:

Rise Grass Valley Inc.

Prepared By:

KD Anderson & Associates, Inc.
3853 Taylor Road, Suite G
Loomis, CA 95650
(916) 660-1555

April 8, 2021

FAIR SHARE PERCENTAGES & COST

KDA

FAIR SHARE PERCENTAGES & COSTS

$$\frac{\text{Project Volumes}}{\text{(Future + Project) – EPAP (existing \& approved projects)}}$$

#11 Brunswick Rd / Sutton Way

	Scenario #1 (Centennial Site)		**Scenario #2 (SR 49)**
	$\frac{13}{3{,}425 - 3{,}100}$		$\frac{29}{3{,}441 - 3{,}100}$
3:30 – 4:30 PM		3:30 – 4:30 PM	
Fair Share Percentage:	**4.0%**		**8.5%**
Estimated Cost for Retiming:	$5,000		
Fair Share Amount:	**$200**		**$425**

#12 Brunswick Rd / Idaho-Maryland Rd

	Scenario #1 (Centennial Site)		**Scenario #2 (SR 49)**
	$\frac{35}{1{,}894 - 1{,}497}$		$\frac{51}{1{,}906 - 1{,}497}$
3:30 – 4:30 PM		3:30 – 4:30 PM	
Fair Share Percentage:	**8.8%**		**12.5%**
Estimated Cost:	$321,380 (GVTIF ‘Other Funds’)		
Fair Share Amount:	**$28,282**		**$40,173**

FAIR SHARE PERCENTAGES & COSTS (Cont.)

#15 Brunswick Rd / SR 174

	Scenario #1 (Centennial Site)		**Scenario #2 (SR 49)**
	10		10
3:30 – 4:30 PM	1,250 – 1,183	3:30 – 4:30 PM	1,250 – 1,183
Fair Share Percentage:	**14.9%**		**14.9%**

Estimated Cost: $450,000 (Conceptual Layout)

Fair Share Amount:	**$67,050**		**$67,050**

#19 Idaho-Maryland Rd / Centennial Drive

	Scenario #1 (Centennial Site)		**Scenario #2 (SR 49)**
	18		18
3:30 – 4:30 PM	1,237 – 1,098	3:30 – 4:30 PM	1,237 – 1,098
Fair Share Percentage:	**12.9%**		**12.9%**

Estimated Cost: $638,827 (GVTIF 'Other Funds')

Fair Share Amount:	**$82,409**		**$82,409**

#21 Sutton Way / Dorsey Drive

	Scenario #1 (Centennial Site)		**Scenario #2 (SR 49)**
	2		2
3:30 – 4:30 PM	1,936 – 985	3:30 – 4:30 PM	1,936 – 985
Fair Share Percentage:	**0.2%**		**0.2%**

Estimated Cost: Unknown per City of Grass Valley

TECHNICAL LOS APPENDIX X

FOR

IDAHO-MARYLAND MINE PROJECT
TRAFFIC IMPACT ANALYSIS

Nevada County, CA

FEHR & PEERS VMT ANALYSIS MEMO

Prepared For:

Rise Grass Valley Inc.

Prepared By:

KD Anderson & Associates, Inc.
3853 Taylor Road, Suite G
Loomis, CA 95650
(916) 660-1555

April 8, 2021

FEHR & PEERS VMT ANALYSIS
3-17-20 MEMO

FEHR PEERS DC

1003 K Street NW, Suite 209
Washington, DC 20001
202.854.2750

MEMORANDUM

Date: March 17, 2020

To: Jonathan Flecker – KD Anderson & Associates

From: Kwasi Donkor – Fehr & Peers DC

Subject: Rise Grass Valley Vehicle Miles Traveled Analysis

DC20-0062

This memorandum outlines the vehicles miles traveled (VMT) analysis methodology and results for the Rise Grass Valley project in Nevada County, California. This analysis was prepared for KD Anderson & Associates as part of their ongoing work on the Rise Grass Valley project.

Analysis Scenarios

This VMT analysis includes four scenarios, described as follows.

- Base Year – VMT is analyzed under the 2012 model base year condition, assuming no activity at the Brunswick or Centennial Industrial sites.
- Base Year Plus Project – VMT is analyzed under plus project conditions, assuming operations at the Brunswick site. For the purposes of the modeling, the Centennial Industrial site employees were added to the Brunswick site.
- Cumulative Year – VMT is analyzed under the 2035 future year condition, assuming no activity at the Brunswick or Centennial Industrial sites.
- Cumulative Year Plus Project – VMT is analyzed under future 2035 plus project conditions, assuming operations at the Brunswick site. As with the base year scenario, the Centennial Industrial site employees were added to the Brunswick site.

Methodology

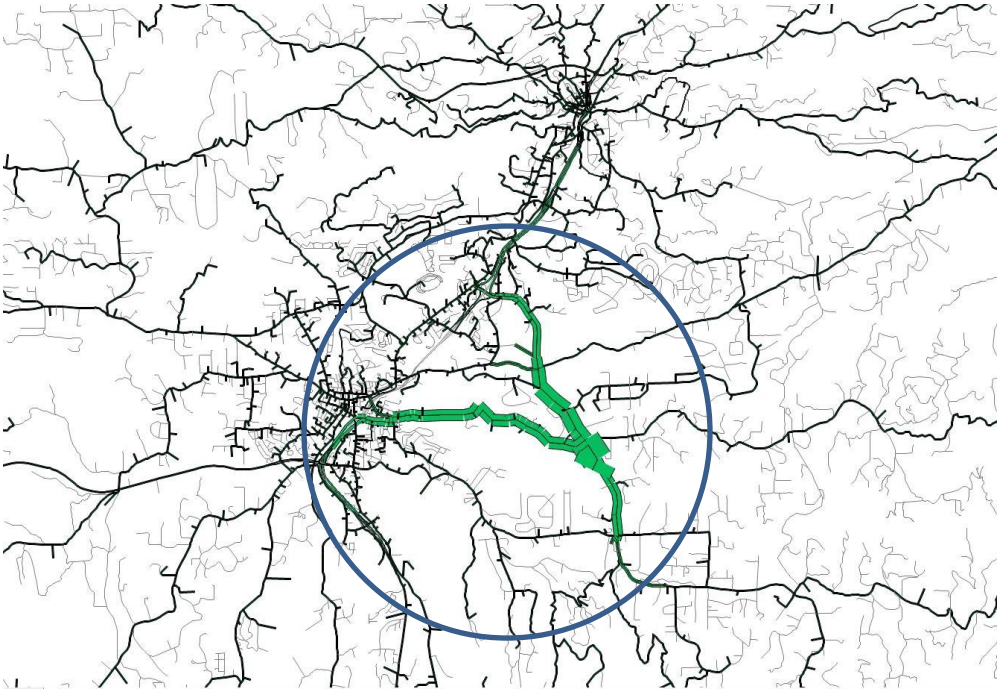
For the purposes of analyzing this mining land use project, vehicle miles traveled (VMT) was calculated by the following general equation:

$$VMT = (Avg.\ trip\ length \times Vehicle\ trips)_{Employees}$$

VMT estimates for heavy-duty trucks were not included in the analysis.

We used the current version of the NCTC Travel Demand Model to calculate VMT for the analysis scenarios. For the plus project scenarios, we added the project's proposed land use to a representative traffic analysis zone (TAZ) of the project location in the travel model.

To calculate the VMT generated by the project, we performed a select zone analysis of the project TAZ to track the project trips throughout the model network. To understand the project's VMT effect as noted in the NCTC SB 743 VMT Implementation document, we reviewed the travel model's distribution of project trips on the model network and developed a project influence area to compare daily VMT for the no project and plus project scenarios. This VMT was calculated by multiplying the number of vehicle trips on roadways within that influence area by the distances of the roadway segments captured. The figure below shows the influence area of the project.



Results

Table 1 shows the daily VMT summary for the project. Table 2 shows a summary of the VMT effect of the project.

TABLE 1: RISE GRASS VALLEY PROJECT GENERATED VMT SUMMARY

Metric	2012 Base Year	2035 Future Year
Total Daily Project VMT	1,637	1,538
Maximum Employees on Site (Including Centennial employees)	111	111
Daily VMT per Employee	14.7	13.9

Notes: VMT = vehicle miles traveled
Source: *Fehr & Peers, 2020*

TABLE 2: RISE GRASS VALLEY PROJECT VMT EFFECT SUMMARY

Scenario	2012 Base Year	2035 Future Year
No Project	438,990	513,575
Plus Project	439,435	513,991
Growth	445	416

Notes: VMT = vehicle miles traveled
Source: *Fehr & Peers, 2020*