
Transportation Impact Study

Golden State Natural Resources Forest Resiliency Demonstration Project Tuolumne County, CA

JULY 2024

Prepared for:

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1 Introduction

1.1 Purpose and Scope of the TIS

The purpose of this Transportation Impact Study (TIS) is to identify potential traffic impacts associated with the wood pellet manufacturing facility proposed to be constructed and operated in Tuolumne County as part of the Golden State Natural Resources Forest Resiliency Demonstration Project. This TIS has been prepared per the County’s General Plan Transportation Element (Tuolumne County 2018), and applicable CEQA guidelines, including adherence to Senate Bill (SB) 743 and guidelines from the Governor’s Office of Planning and Research (OPR 2018).

In 2019, the Golden State Finance Authority (GSFA) and the U.S. Forest Service signed a master Stewardship Agreement (MSA) for the general purpose of achieving resilient forests within U.S. Forest Service Region 5, which includes all of the 18 national forests located in California. Feedstock for manufacturing of wood pellets will be wood byproducts sourced from Sustainable Forest Management Projects such as hazardous fuel reduction projects, construction of shaded fuel breaks, and salvage harvests (see Chapter 2, Project Description, of the DEIR for a full description). While the MSA applies to the entirety of Region 5, only Sustainable Forest Management Projects within the “Working Area” described in Section 2.4 of the DEIR are contemplated under the proposed project. Feedstock will be taken to two sites for the manufacturing of the wood pellet byproducts, located in Northern California (Lassen Facility) and the Central Sierra Nevada foothills (Tuolumne Facility). This TIS focuses on traffic operations in and around the Tuolumne Facility (proposed project or project) and analyzes the impacts of the project on the local transportation system.

The objectives of this TIS are to:

- Document existing roadway, pedestrian, bicycle, transit and traffic conditions, including intersection levels of service in the study area;
- Estimate trip generation and trip characteristics for construction-related activities of the wood pellet manufacturing site;
- Document Existing (Year 2023) intersection levels of service in the study area;
- Document Opening Year (2025) intersection levels of service in the study area per traffic volumes derived from adding growth to existing traffic volumes and accounting for cumulative project traffic;
- Analyze the project related traffic impacts that would occur under the Existing (2023) and Opening Year (2025) conditions and describe the significance of the potential impacts;
- Provide a Vehicle Miles Traveled (VMT) analysis per Senate Bill 743 and the updated California CEQA Guidelines;
- Identify CEQA-required mitigation measures for significant transportation impacts and/or other improvements needed to meet level of service standards (if any); and,
- Provide findings and recommendations based on the traffic analysis of the proposed project.

Figure 1, Project Location and Study Area, shows the project location and study area. As illustrated in Figure 1, the study area is comprised of five (5) intersections near the project site. Additionally, two (2) roadway segments

adjacent to the site, along with representative haul routes throughout the Working Area, are included in this analysis.

1.2 Project Location

The proposed Tuolumne wood pellet processing site is located at 12001 La Grange Road approximately 9 miles southwest of the community of Jamestown, in Tuolumne County, California, and in the western foothills of the Sierra Nevada Mountain Range (see Figure 1, Project Location and Study Area). The Tuolumne site is located immediately southeast of the junction of State Route 108 and La Grange Road. The site is situated in Township 1 South, Range 13 East, and Sections 14 and 23 of the U.S. Geological Survey Tuolumne, California 7.5-minute quadrangle.

The Tuolumne location is a previously developed site that was formerly a wood processing mill, used by the former owner, Sierra Pacific Industries (SPI), for finished bark and colored mulch processing. A wood shaving plant owned by American Wood Fibers is located adjacent to the west side of the site, and two residences are located adjacent to the northwest corner of the site. Agricultural land is located to the north, east, and south.

The project site is located southeast of State Route 108/120 (SR-108/120), with primary access to the site provided from La Grange Road – CR-J59, which connects to SR-108/120 northwest of the site. The site is bordered by Sierra Northern Railroad to the west that travels along La Grange Road and intersects near the southwestern project site boundary.

As shown in Figure 2, passenger vehicular (personnel/employee) access to the site would be provided via a currently unused and gated driveway (to be improved as part of the proposed project) along the northern boundary of the site, and truck access to the site would be provided via the existing site access driveway south of the train tracks.

1.3 Project Description

The Golden State Natural Resources Forest Resiliency Demonstration Project is a response to the growing rate of wildfires in California, which has been exacerbated by hazardous excess fuel loads in forests, and the need to promote economic activity with California’s rural counties. The project serves as an opportunity to begin restoring California forests and watersheds to a natural and resilient status and provide overall benefit to the state by sustainably procuring and processing excess biomass into a pelletized fuel source for renewable energy generation.

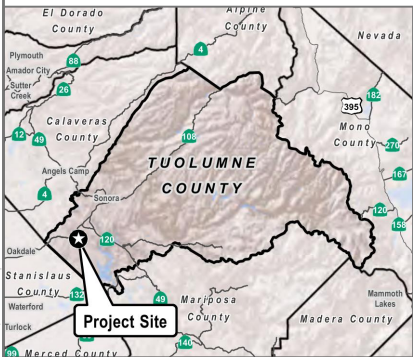
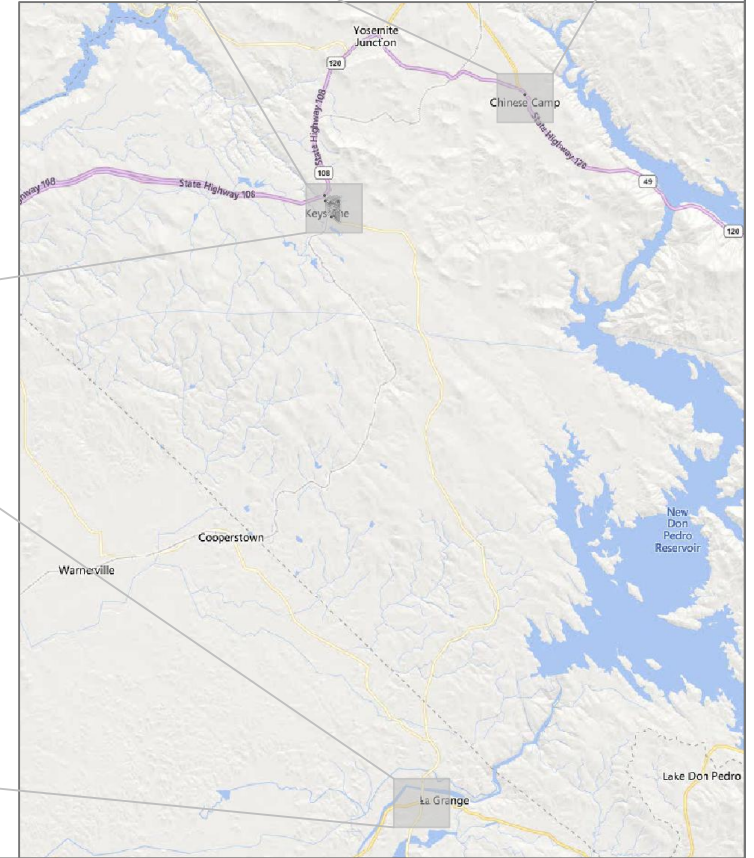
The Golden State Natural Resources Forest Resiliency Demonstration Project includes vegetation treatment and restoration activities (feedstock source); transportation and processing of the feedstock at two pellet processing facilities, one in the Central Sierra Nevada foothills and one in Northern California; and transportation of the finished product to a storage facility to be constructed at the Port of Stockton, California, for export to international markets. As noted above, this TIS specifically focuses on traffic operations in and around the Tuolumne Facility (identified as the proposed project or project in this study) and analyzes the impacts of the project on the local transportation system. The Tuolumne Facility would employ up to 51 people, with 38 overlapping on site between Shifts A and B during the workday, as shown in Table 1 below.

Table 1. Tuolumne Daily Employees

Shift	Employees
A (8:00 a.m. – 8:00 p.m.)	25
B (4:00 p.m. – 12:00 a.m.)	13
C (12:00 a.m. – 8:00 a.m.)	13
Total	51

Legend

(X) Study Intersection



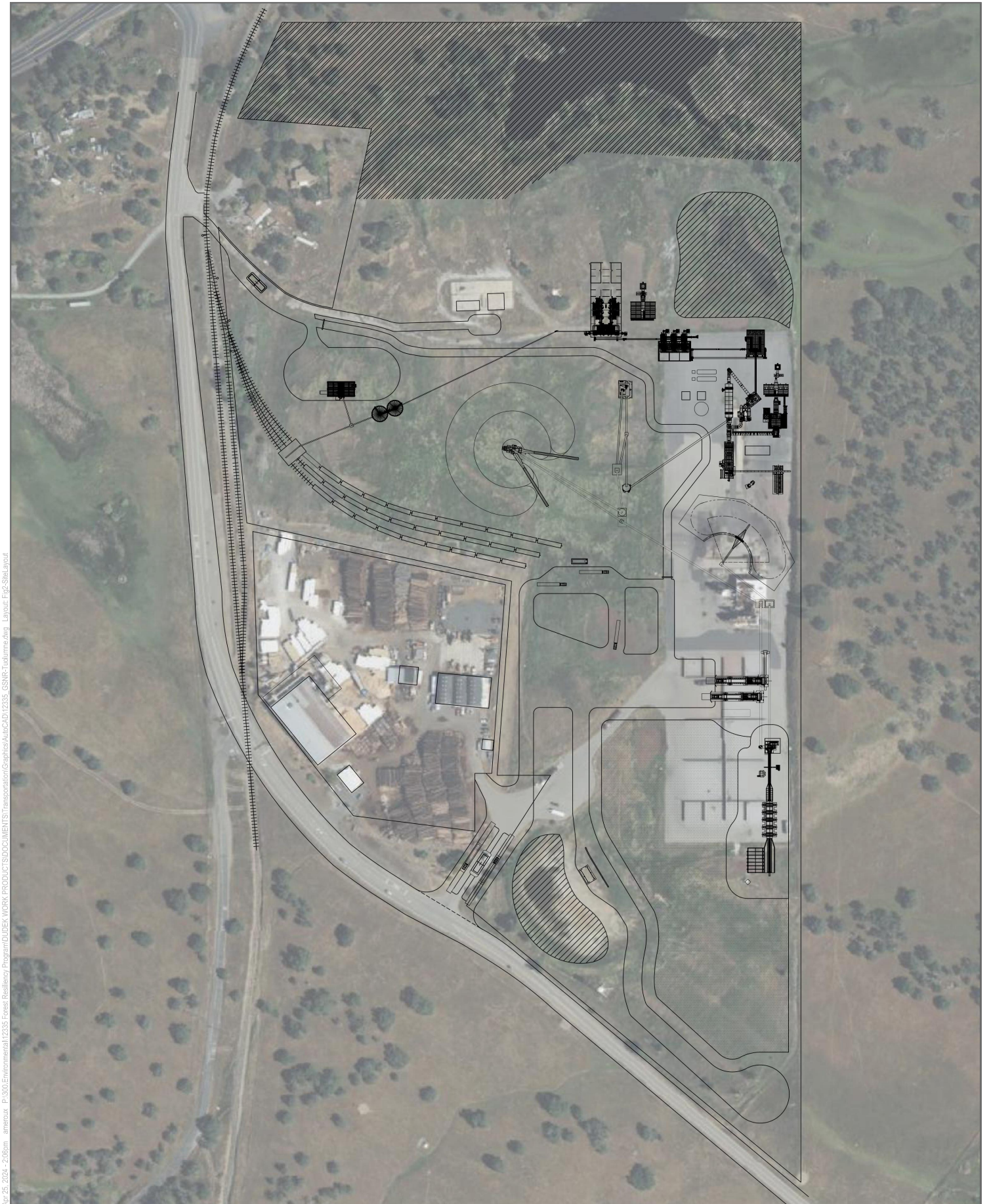
SOURCE: Bing Maps (Accessed 2023), Nexus PMG 2021

FIGURE 1

Project Location and Study Area

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SOURCE: Nexus PMG 2021

FIGURE 2

Site Layout: Tuolumne Facility



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2 Study Area

This section provides a summary of the existing street network, including the major roadways serving the site, the existing transit service, and bicycle and pedestrian facilities in the study area (if applicable).

2.1 Existing Street Network

Figure 3 provides the Tuolumne County Master Plan of Streets and Highways. Regional access to the site would be provided from SR-108/120, with local access from La Grange Road – CR-J59. Characteristics of the primary existing road network within the study area are described below.

Site Access Roadways

The Tuolumne Facility Site is located south of State Route 120 (SR-120) and north of the unincorporated community of Keystone in Tuolumne County. Employee access to the site is provided via La Grange Road and the northern site access driveway and truck access the site is provide via the southern site access driveway.

State Route 120 (SR-120) – SR-120 is an east-west, two-lane undivided highway located north of the project site. SR-120 is a Caltrans designated truck route; in Tuolumne County, SR-120 has terminal access, and allows the use of both STAA and California legal trucks. In Mariposa County, SR-120 allows only trucks that are no longer than 65 feet as per the kingpin-to-rear-axle (KRPA) advisory. The posted speed limit is generally 55-65 MPH.

La Grange Road – County Road J59 (CR-J59) – La Grange Road is a north-south, two-lane, undivided roadway located along the western edge of the project site. La Grange Road will provide primary personnel access to the project site. The posted speed limit is 55 MPH.

Yosemite Boulevard – State Route 132 (SR-132) – SR-132 is an east-west, two-lane, undivided highway located south of the project site. SR-132 is a Caltrans designated truck route; west of the City of Modesto, SR-132 has terminal access, and allows the use of both STAA and California legal trucks. East of the City of Modesto, SR-132 allows only trucks that are no longer than 65 feet as per the California Legal Route. The posted speed limit is 45 MPH.

Red Hill Road – Red Hill Road is a north-south, two-lane, undivided, and unstriped roadway located northeast of the project site. There are no present sidewalks, or curbs, and the use of trucks heavier than 25 tons is prohibited. The posted speed limit is 25 MPH.

Montezuma Road – State Route 49 (SR-49) – Montezuma Road is a north-south, two-lane, undivided highway located northeast of the project site. Montezuma Road provides regional access to the project site, and is a Caltrans designated truck route, wavering between allowing STAA and KPRA advisory sized trucks. It allows STAA trucks from Amador City to Angels Camp, Sonora to Postmile Marker 23.9, and Postmile 30.7 to the terminus in Mariposa County; in between these sections, SR-49 allows only KPRA advisory sized trucks. The posted speed limit is 65 MPH.

Site Access Driveways – The site access driveways provide direct access to project site. The northern driveway, which is currently overgrown and not operational, will be improved as part of the proposed project and serve as the primary employee access to the site. The southern driveway, which is currently paved and operational, will provide primary truck access to the project site.

Haul Routes

Although the exact haul routes to be used at any given time would vary widely depending on the feedstock areas, the following local and state highways would constitute the majority of expected haul routes throughout the Working Area. A brief description of each route is provided below, and all routes for the Tuolumne feedstock area are shown in Figure 4.

US Route 50 (US-50) – US-50 is an east-west, two- to four-lane highway located north of the project site. US-50 is a Caltrans designated truck route; west of Postmile Marker 31.3 it is part of the National Network, and allows the use of both STAA and California legal trucks. East of Postmile Marker 31.3, US-50 allows only 65 feet California Legal trucks. The posted speed limit is generally 55-65 MPH.

State Route 88 (SR-88) – SR-88 is an east-west highway located north of the project site. SR-88 is a Caltrans designated truck route that varies between allowing trucks with terminal access and trucks that are 65 feet maximum in length. SR-88 allows STAA trucks from Stockton to Amador City, and from Postmile Marker 2.2 to its eastern terminus, and it allows only 65 feet California Legal trucks between Amador City and Postmile Marker 2.2. The posted speed limit is generally 55 MPH.

State Route 4 (SR-4) – SR-4 is an east-west highway located north of the project site. SR-4 is a Caltrans designated truck route that varies between allowing trucks with terminal access and trucks that are KPRA advisory sized. SR-4 allows STAA trucks from Stockton to Postmile Marker 8.1, and from its junction with SR-49 to Postmile Marker 3.0, and it allows only KPRA advisory sized trucks between Postmile Marker 8.1 to its junction with SR-49, and from Postmile Marker 3.0 to its eastern terminus. The posted speed limit is generally 55 MPH.

State Route 108 (SR-108) – SR-108 is an east-west highway located north of the project site, and overlaps with SR-120 from Oakdale to Yosemite Junction. SR-108 is a Caltrans designated truck route with terminal access, and allows the use of both STAA and California legal trucks. From Postmile Marker 31.3 to its eastern terminus, SR-108 allows only KPRA advisory sized trucks. The posted speed limit is generally 55 MPH.

State Route 140 (SR-140) – SR-140 is an east-west highway located south of the project site. SR-140 is a Caltrans designated truck route with terminal access, and allows the use of both STAA and California legal trucks. The posted speed limit is generally 55-65 MPH.

State Route 41 (SR-41) – SR-41 is a north-south highway located south of the project site. SR-41 is a Caltrans designated truck route with terminal access, and allows the use of both STAA and California legal trucks, except for a small portion from Postmile Marker 45.7 to its northern terminus in Fresno County. The posted speed limit is generally 55 MPH.

State Route 168 (SR-168) – SR-168 is an east-west highway located south of the project site. SR-168 is a Caltrans designated truck route that varies between allowing trucks with terminal access, 65 feet California Legal trucks, and trucks that are KPRA advisory sized. SR-168 allows STAA trucks from Fresno to Postmile Marker 18.6, allows

only KPRA advisory sized trucks between Postmile Marker 36.6 to Postmile Marker 49.7, and allows only 65 feet California Legal trucks from Postmile Marker 18.6 to Postmile Marker 36.3, and from Postmile Parker 49.7 to its eastern terminus. The posted speed limit is generally 55-65 MPH.

2.2 Transit Facilities

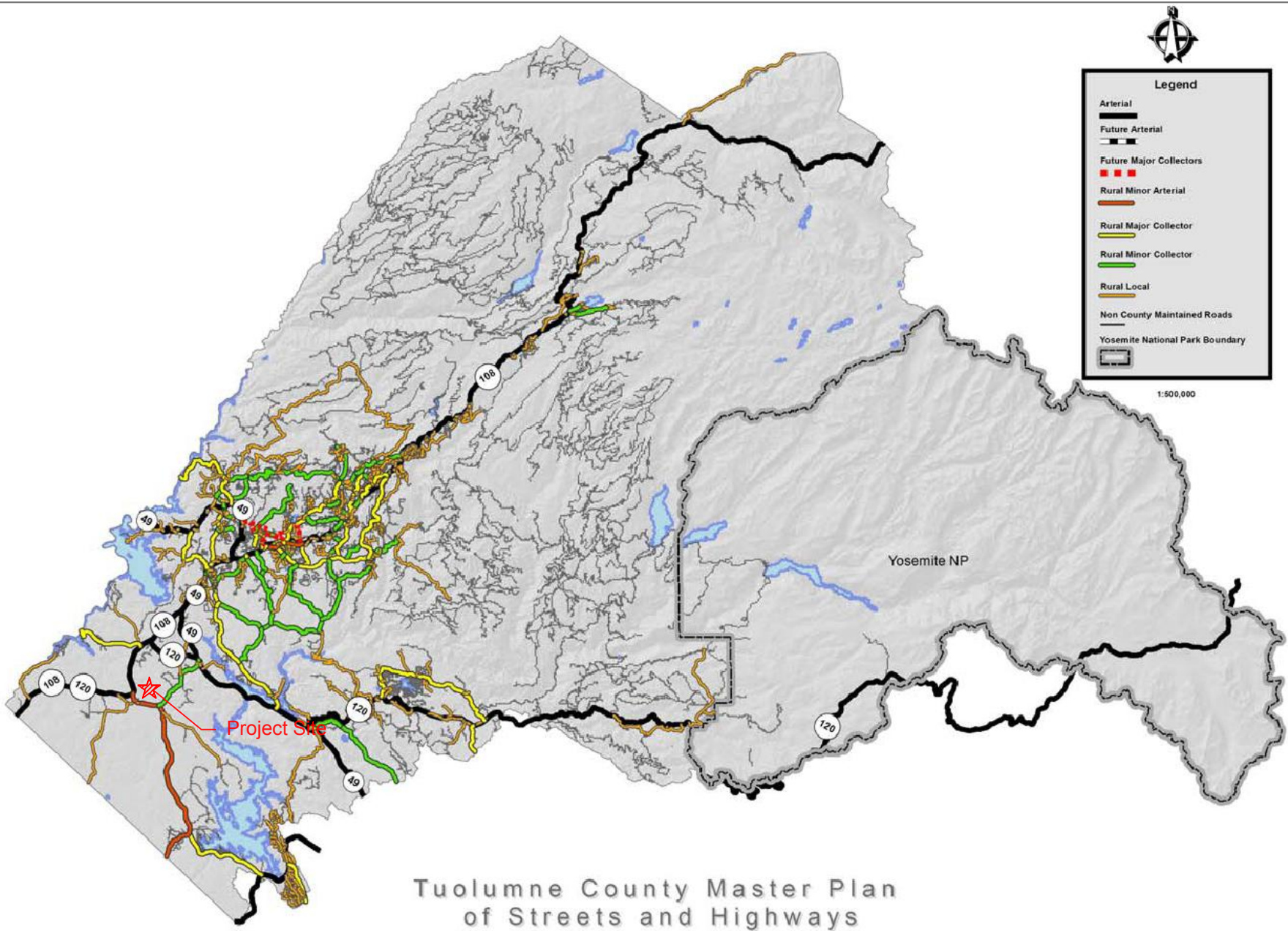
Transit in Tuolumne County is provided by Tuolumne County Transit (TCT) which currently operates two routes and a Dial-A-Ride service. There are no existing bus or transit routes that operate within a 1-mile radius of the project site, or near the community of Keystone. However, for additional reference, the Tuolumne County Transit routes are described below.

The two TCT routes operate only on weekdays whereas the Dial-A-Ride service is available on Mondays through Saturdays. Route 1 provides service mainly within the Sonora and East Sonora communities, and operates from 7:30am to 7:30pm, with 60-minute headways. Route 2 provides service between the Columbia, Shaws Flat, Sonora, Crystal Falls, Sugar Pine, and Sierra Village communities, and operates five trains at 6:25am, 9:30am, 11:00am, 1:30pm, and 4:40pm. The Dial-A-Ride service is reservation based and has an expansive service area throughout Tuolumne County; however, it does not service the project site area.

2.3 Pedestrian and Bicycle Facilities

There are currently little to no pedestrian or bicycle facilities provided near the project site. The 2020 Tuolumne County Active Transportation Plan (ATP) (TCTC 2020) has identified the need for improvements in the area under Project Numbers ATP-County06 and ATP-County07 for SR-108 and SR-120, respectively, which both include installation of bikeways with 4- to 8-foot shoulders and buffers throughout Tuolumne County along these roadways, including the extent adjacent to the project site. These facilities are identified as “Tier 2” improvements as prioritized by the Tuolumne County Transportation Commission (TCTC), indicating improved facilities have received either community and/or local agency support, but would likely require more community outreach and project information prior to implementation.

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SOURCE: Tuolumne County 2018

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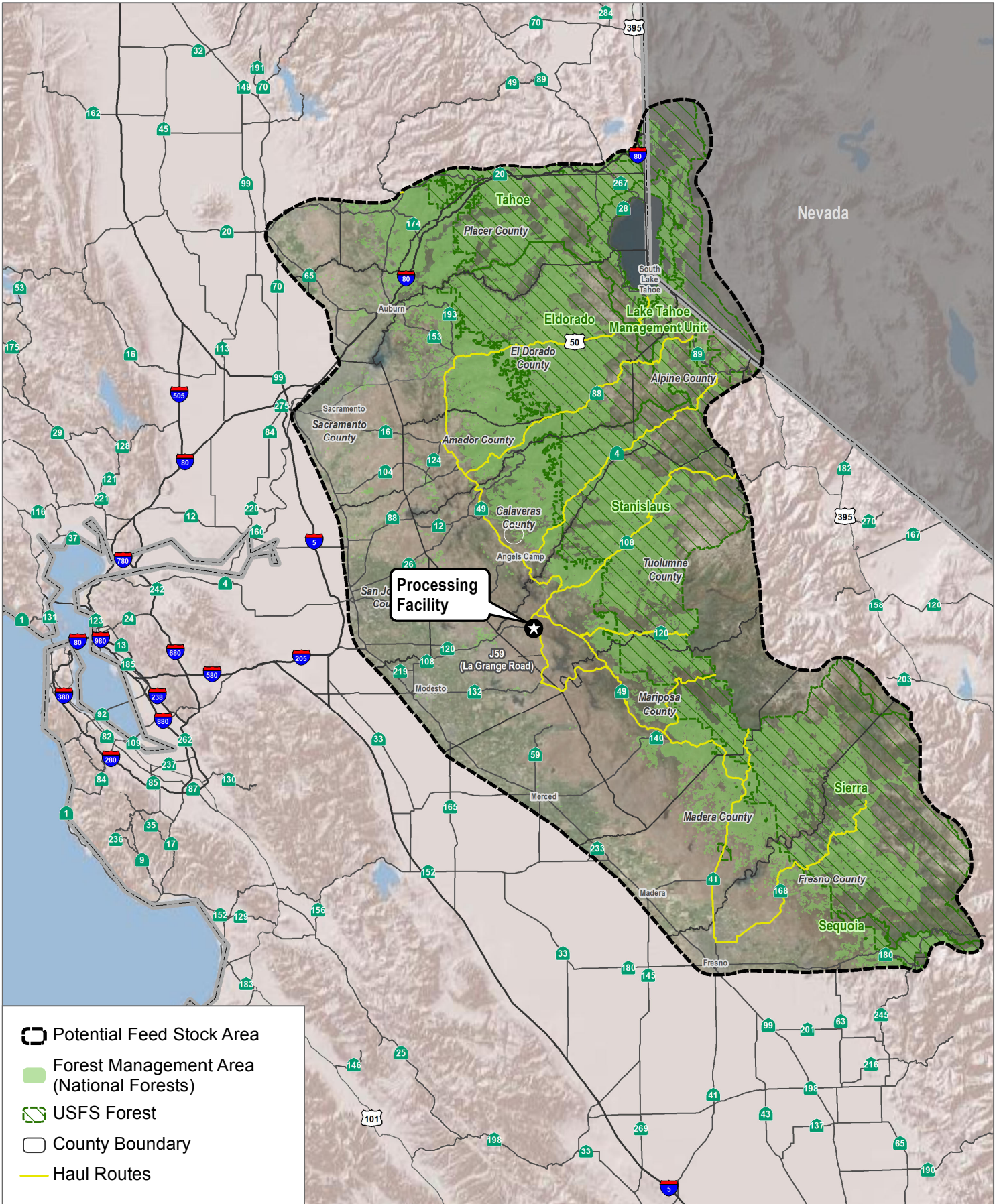
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FIGURE 3

Tuolumne County Master Plan of Streets and Highways

Golden State Natural Resources Forest Resiliency Demonstration Project

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SOURCE: Bing Maps 2022

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3 Project Traffic

This section documents the trip generation, distribution, and assignment of project traffic in the study area. As noted in Chapter 1, for the purposes of this analysis, “project” refers to traffic generated from transportation and processing of the feedstock at the Central Sierra Nevada pellet processing facility in Tuolumne County.

3.1 Trip Generation

Trip generation estimates for the operation of the Tuolumne Facility are based on the number of workers and trucks that would be required for the proposed pellet production operations. Feedstock would be received at the woodyard 24 hours per day, 5 days per week¹. This would produce and store enough woodchips for fuel to enable pellet production to operate consistently. Pellet production operations would be active 24 hours per day, 7 days per week, with up to 4 weeks total downtime allotted for planned and unplanned outages once at capacity. Operational traffic includes the number of employees, as well as and the amount of truck traffic that would be generated to and from the site daily and during the AM and PM peak commuting hours.

To provide a conservative analysis while also accounting for trips beginning or ending prior to peak period and/or multiple shifts throughout the workday, it is assumed that 100% of the Shift A employees would arrive inbound to the site during the AM peak period (7:00 a.m. to 9:00 a.m.) for their 8:00 a.m. to 8:00 p.m. shift, all Shift C employees would depart during the AM peak period at the end of their 12:00 a.m. to 8:00 a.m. shift, and all Shift B employees would arrive at the site during the PM peak period (4:00 p.m. to 6:00 p.m.) for their 4:00 p.m. to 12:00 a.m. shift. No outbound PM peak period employee trips would occur.

Truck deliveries are typically sporadic throughout the day; therefore, in order to provide a conservative analysis, truck arrivals and departures were assumed to be distributed over the 24 hours, with daytime truck operations comprising 70% of delivery trips. The remaining 30% of feedstock deliveries are expected to occur overnight (7:00 a.m. to 7:00 p.m.).

The trip generation estimates for the operation of Tuolumne Facility are summarized in Table 2 below. To account for the impact trucks may have compared to passenger vehicles, passenger car equivalence (PCE) factors were applied to the trip generation estimates to account for truck traffic associated with the proposed facility. A 1.0 PCE factor was applied to passenger vehicles and 3.0 for ash removal and logging/haul trucks.

Table 2. Trip Generation Summary

Vehicle Type	Daily Quantity		Daily Trips	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Non-PCE Adjusted Trip Generation									
Employees (Passenger Vehicles) ¹	51	workers	102	25	13	38	13	0	13
Logging/Haul Trucks (day) ²	82	trucks	165	7	7	14	7	7	14
Logging/Haul Trucks (night) ²	36	trucks	71	0	0	0	0	0	0

¹ In-forest operations are generally limited to Monday through Friday; however, the facility will also be open on Saturdays to receive occasional deliveries.

Ash Removal ³	1	trucks	2	1	0	1	0	1	1
Peak Trip Total (Non-PCE)			340	33	20	53	20	8	28
PCE Adjusted Trip Generation⁴									
Employees (Passenger Vehicles) ¹	51	workers	102	25	13	38	13	0	13
Logging/Haul Trucks ²	82	trucks	495	21	21	42	21	21	42
Logging/Haul Trucks (night) ²	36	trucks	213	0	0	0	0	0	0
Ash Removal ³	1	trucks	6	3	0	3	0	3	3
Peak Trip Total (PCE)			816	49	34	83	34	24	58

- ¹ Assumes employee arrivals and departures coincide with shift times.
- ² Trucks are assumed to arrive and depart the site throughout the day. Feedstock would be received 24 hours per day, with 70% of total daily feedstock expected to be received across 12 hours from 7am to 7pm, and 30% of total daily feedstock to be received overnight from 7pm to 7am.
- ³ Ash removal may occur at any time of the day; 1 truck trip is assumed to arrive during the AM peak hour and depart during the PM peak hour for the purposes of this analysis. Ash removal would occur once every four days at Tuolumne.
- ⁴ Truck trips included the combined total of both ash removal and haul trucks across all sites within one day. All trucks use a PCE rate of 3.0 for the purposes of this analysis.

As shown in Table 2, the project would generate approximately 340 daily trips, 53 AM peak hour trips and 28 PM peak hour trips. After trip generation estimates were adjusted utilizing PCE factors, the project would generate approximately 816 daily trips, 83 AM peak hour trips, and 58 PM peak hour trips.

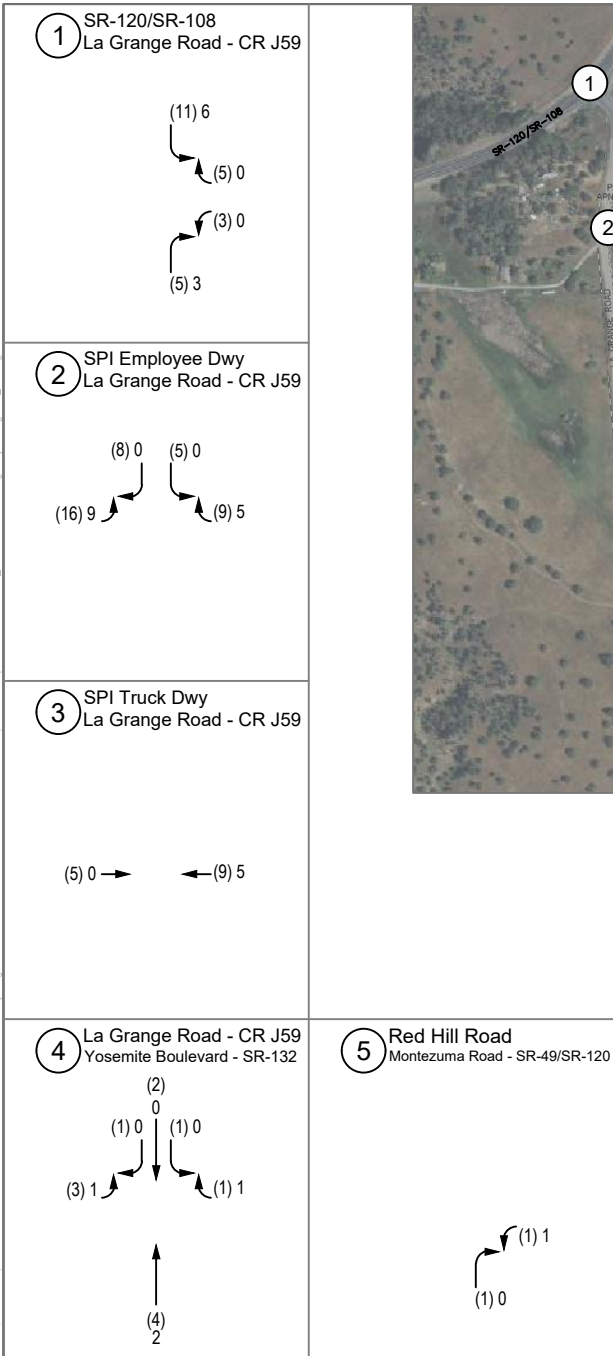
Construction of the facility is assumed to begin in late 2024 and will take approximately 14 months. During construction, the amount of vehicular traffic is estimated to be less than operational traffic. As such, all construction-related traffic would be temporary and short term and would be removed from the study area roadway network upon completion of the project, and is not included in this analysis.

3.2 Trip Distribution and Assignment

Regional project trip distribution percentages are based on logical travel paths to and from the project site, along with review of census data from the OnTheMap application² identifying the primary origin (home) locations of employees working within the census block group the Lassen Facility is located (see Appendix A). Project trip distribution percentages are shown in Figures 5 and 6, for passenger vehicle and truck trips, respectively. Project trips were assigned to the study area intersections by applying the above-referenced project trip generation estimates to the trip distribution percentages at each study area roadway segment and intersections. The project trip assignments are shown in Figures 5, 6, and 7 for passenger vehicle, truck, and total trip assignments, respectively.

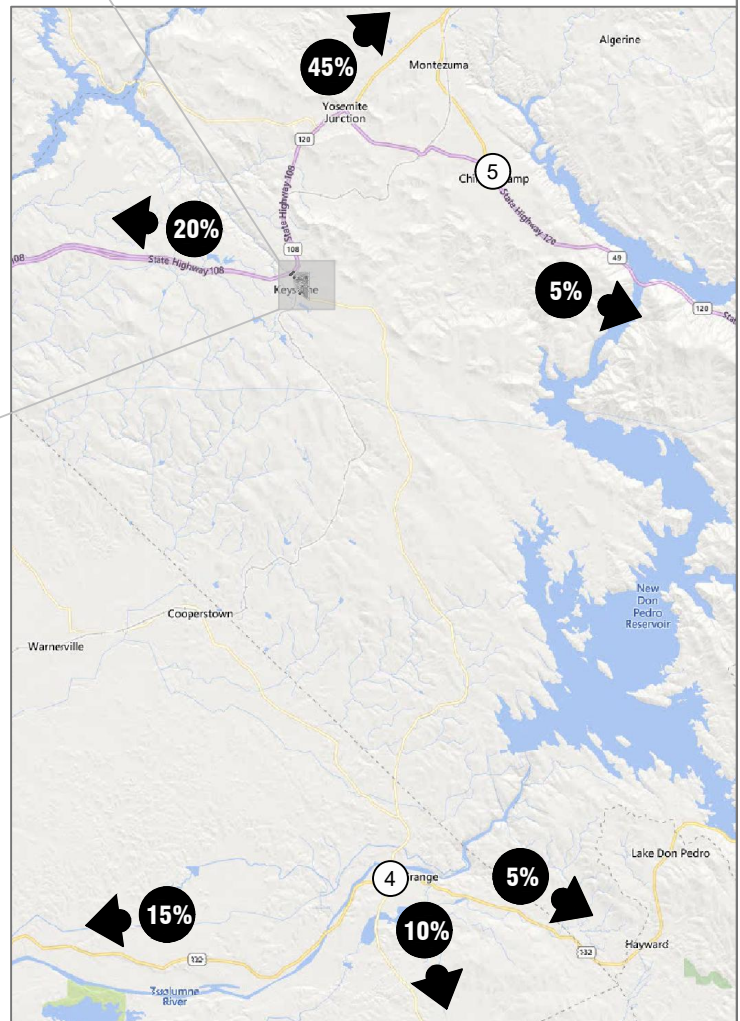
² The OnTheMap application is a web-based mapping and reporting application provided by the U.S. Census Bureau, which enables access to the Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics (LODES) dataset. OnTheMap can be access at <https://onthemap.ces.census.gov/>.

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Legend

- ⊗ Study Intersection
- ⊗ XX% Percentage Distribution
- (X) AM Peak Hour Traffic Volumes
- X PM Peak Hour Traffic Volumes

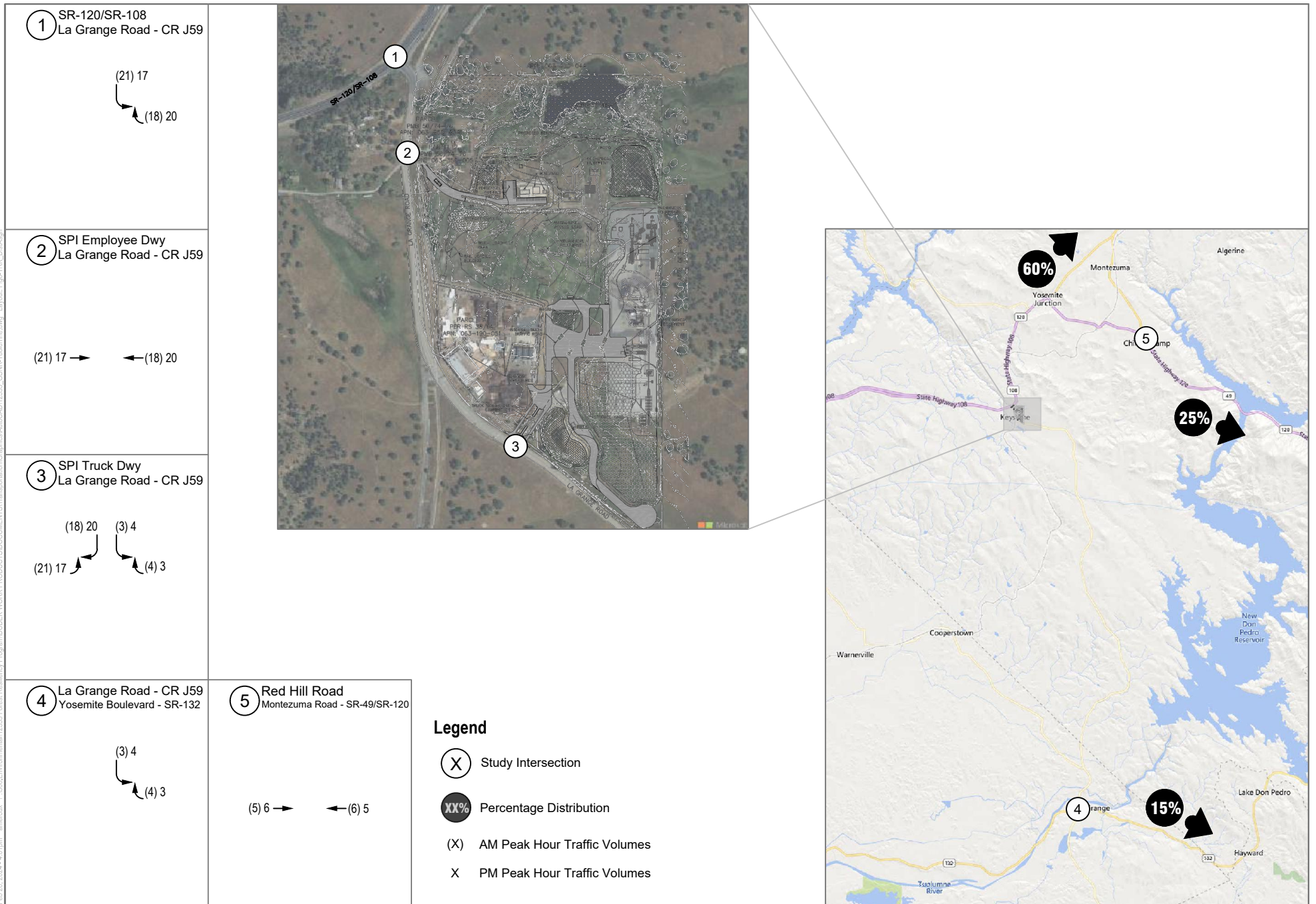


SOURCE: Bing Maps (Accessed 2023), Nexus PMG 2021

FIGURE 5
Project (Passenger Vehicle) Trip Distribution and Assignment
Golden State Natural Resources Forest Resiliency Demonstration Project

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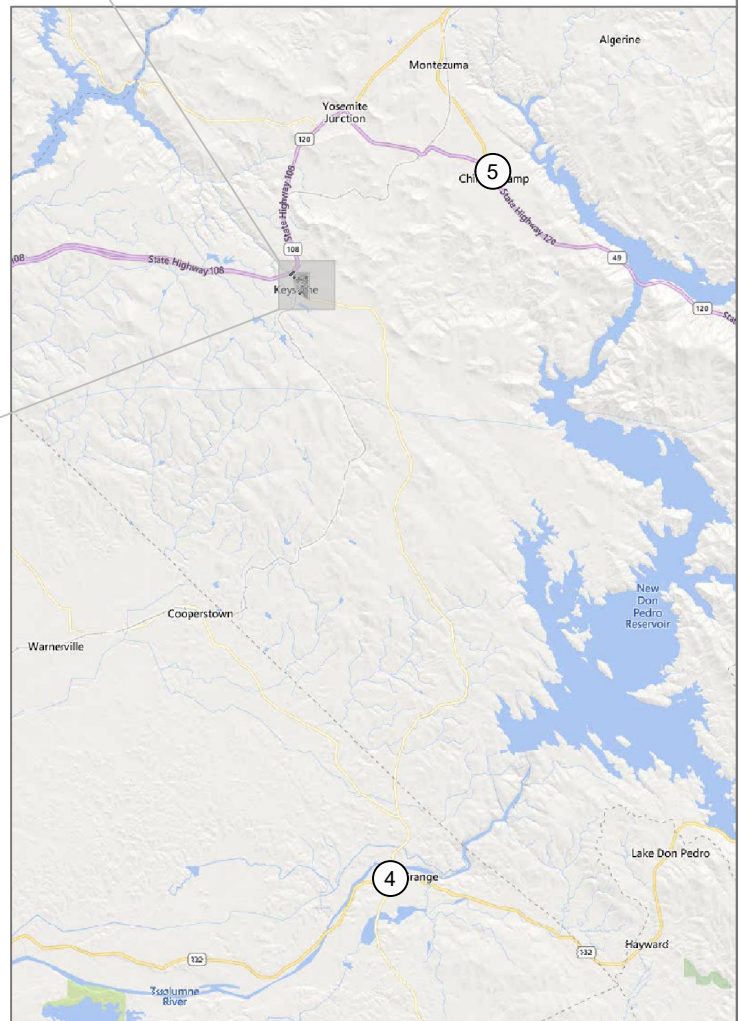
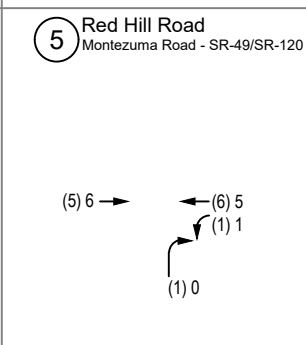
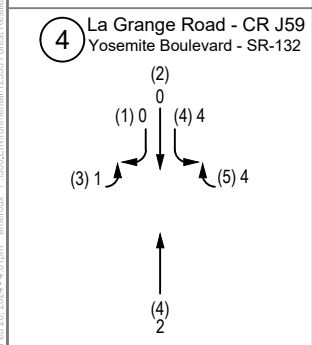
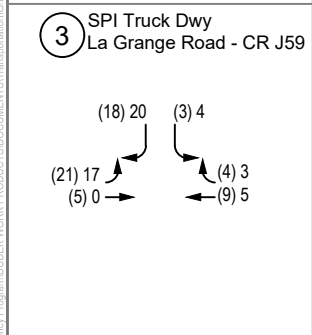
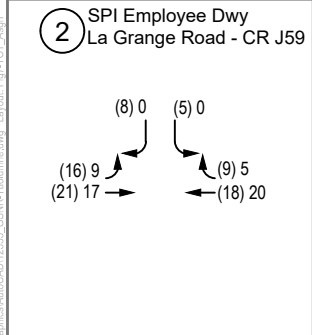
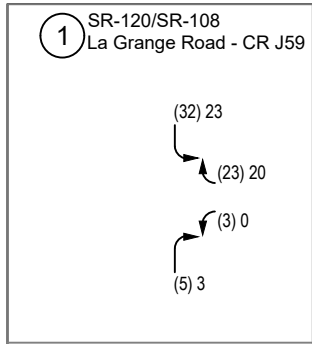
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SOURCE: Bing Maps (Accessed 2023), Nexus PMG 2021

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Legend

- X Study Intersection
- (X) AM Peak Hour Traffic Volumes
- X PM Peak Hour Traffic Volumes

SOURCE: Bing Maps (Accessed 2023), Nexus PMG 2021

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4 Level of Service (LOS) Analysis

The County has vehicle LOS policies to ensure that proposed developments are consistent with the County's General Plan. Therefore, an LOS analysis has been prepared to evaluate the project's consistency with the County's policies. The study intersections and roadway segments, analysis scenarios, traffic volumes, and LOS methodology and impact criteria are presented in the following section.

4.1 Study Intersections and Roadway Segments

The following study intersections are included in the LOS analysis, based on proximity to the site and potential for turning movements from project traffic to occur:

1. SR-120 - SR-108/La Grange Road - CR J59 (two-way stop control)
2. Site Access Employee Dwy/La Grange Road - CR J59 (two-way stop control)
3. Site Access Truck Dwy/La Grange Road - CR J59 (two-way stop control)
4. La Grange Road - CR J59/Yosemite Boulevard - SR-132 (all-way stop control)
5. Red Hill Road/Montezuma Road - SR-49 - SR-120 (two-way stop control)

In addition, the following road segments were selected for analysis, based on anticipated routes and locations where the project may add the highest daily traffic volumes:

1. SR-120 - SR-108, west of La Grange Road - CR J59
2. La Grange Road - CR J59, south of SR-120 - SR-108

4.2 Analysis Scenarios

Intersection LOS analyses were prepared for the weekday AM and PM peak hours at the study area intersections and road segments listed above for the following analysis scenarios:

- Existing Conditions
- Existing Conditions Plus Project
- Opening Year (2025)
- Opening Year (2025) plus Project

4.3 Traffic Volumes

Daily, AM and PM peak hour turning movements counts were collected at the study intersections on August 29, 2023. The raw traffic data³ is provided as Appendix A. Traffic counts were adjusted to passenger car equivalents (PCE) to reflect truck traffic according to following industry standards as shown below:

- Light-duty trucks (2-axle): 1.5 PCE
- Medium-duty trucks (3-axle): 2.0 PCE
- Heavy-duty trucks (4+-axle): 3.0 PCE

The Opening Year (2025) condition represents a short-term horizon period (less than 5 years) when the proposed project is under construction. The peak hour traffic forecasts for the Year 2025 have been projected by increasing the traffic volumes by an annual growth rate of 2.0% and adding cumulative project traffic. Four (4) cumulative projects (e.g., approved or pending developments in the review process, but not fully approved; or, projects that have been approved, but not fully constructed or occupied) were identified in the study area, and are further discussed in Chapter 6.1

4.4 Operational Analysis Methodology

The Highway Capacity Manual, 6th Edition (HCM 6) methodology (Transportation Research Board 2016) was used to analyze the operation of signalized and unsignalized study intersections. Detailed LOS calculation worksheets, for each scenario analyzed, are included in Appendix B.

The HCM analysis methodology describes the operation of an intersection using a range of LOS from LOS A (free-flow conditions) to LOS F (severely congested conditions), based on the corresponding control delay experienced per vehicle for unsignalized intersections. The Synchro 11 LOS software was used to determine intersection LOS. Synchro is consistent with the HCM 6 methodology. Table 3 shows the LOS values by delay ranges for unsignalized and signalized intersections under the HCM methodology.

Table 3. Levels of Service for Intersections using HCM Methodology

Level of Service	Unsignalized Intersections Control Delay (in seconds per vehicle)	Signalized Intersections Control Delay (in seconds per vehicle)
A	≤ 10.0	≤ 10.0
B	> 10.0 to < 15.0	> 10.0 to < 20.0
C	> 15.0 to < 25.0	> 20.0 to < 35.0
D	> 25.0 to < 35.0	> 35.0 to < 55.0
E	> 35.0 to < 50.0	> 55.0 to < 80.0
F	> 50.0	> 80.0

³ Counts were not collected at the Site Access Driveway North location (Intersection #2); however, volumes along this roadway are relatively low, and volumes from upstream and downstream through movements at adjacent intersections were balanced and utilized at this intersection.

Source: HCM 6 (Transportation Research Board 2016).

Roadway capacities along study area and haul route roadways were determined from Appendix D (Traffic Study) of the Tuolumne County General Plan Update DEIR (August 2016), which provides general capacity thresholds for various roadway type characteristics, including various Federal Highway Association (FHWA) functional classes as utilized by Caltrans.

Daily volume capacities are referenced for LOS “D” capacities in the Appendix Table 2 LOS Look Up Table of the Appendix D Traffic Study, and selected based on the appropriate descriptions. As noted in the Appendix Table 2 (also included in Appendix C of this TIS), all volumes thresholds are approximate and assumes average roadway characteristics. Actual threshold volume for each Level of Service listed in the table may vary depending on variety of factors including (but not limited to) roadway curvature and grade, intersection or interchange spacing, driveway spacing, percentage of trucks, RVs, and other heavy vehicles, travel lane widths, speed limits, signal timing characteristics, on-street parking, volume of cross traffic and pedestrians, etc.. as identified in HCM.

The volume-to-capacity (V/C) and LOS thresholds, where capacity is determined based on the roadway classifications noted above, are provided in Table 4.

Table 4. Levels of Service for Roadway Segments

Level of Service	Roadway Segments V/C Ratio
A	0.00 – 0.60
B	0.61 – 0.70
C	0.71 – 0.80
D	0.81 – 0.90
E	0.91 – 1.00
F	1.01 or greater

Source: HCM 6 (Transportation Research Board 2016).

Notes: V/C = Volume-to-Capacity

4.5 Tuolumne County General Plan Consistency Requirements

Tuolumne County uses a threshold of LOS D for the minimum acceptable operation of its transportation facilities. The County’s General Plan Transportation Element (Tuolumne County 2018) contains the following policies related to transportation compliance and LOS requirements:

The Transportation Element of the Tuolumne County General Plan (2018) provides the framework for decisions in Tuolumne County concerning the countywide transportation system. Specific goals and policies identified in the Transportation Element that are relevant to the proposed project are identified below.

Goal 4A. Preserve the County’s substantial investment in the existing road system and provide for the long-range planning and development of the County’s transportation system for the safe and efficient movement of people and goods.

Policy 4.A.1: Support and work with the TCTC to regularly conduct assessments of the current status of the highway system to determine the current level of needs in the system, and report those needs to the Board of Supervisors.

Policy 4.A.a. Plan, design and regulate roadways in accordance with the following functional classification system and designations which are reflected in the County's Regional Transportation Plan, and are shown on the Master Plan of Streets and Highways in Chapter 4 of the General Plan Technical Background Report:

- Other Freeways and Expressways (Functional Class Code 2)
- Other Principal Arterial (Functional Class Code 3)
- Minor Arterial (Functional Class Code 4)
- Major Collector (Functional Class Code 5)
- Minor Collector (Functional Class Code 6)
- Local Road (Functional Class Code 7)
- Scenic Routes
- Urban Streets

Policy 4.A.b. Develop and manage the County’s roadway system to maintain the following minimum levels of service (LOS)⁴ using methodology adopted by the Tuolumne County Transportation Council:

- **Arterials, Minors Collectors, Major Collectors, Urban Streets:** LOS D, unless an exception is made
- **Local Road:** LOS C
- **Minimum Peak Hour of all Intersections:** LOS D

Policy 4.A.c. Establish priorities based on available funding for road improvement projects while balancing the need to support employment generating uses, affordable housing, and educational facilities. Emphasize, consistent with legal and funding constraints, the following road improvement projects in the County Road Improvement Program:

Policy 4.A.2: Dedicate, widen and construct roads according to design and access standards generally defined in Chapter 4 of the General Plan Technical Background Report and, more specifically, the County Ordinance Code and the Countywide Traffic Circulation Improvement Program. Exceptions

⁴ The County may allow exceptions to these level of service standards where it finds that the improvements or other measures required to achieve the LOS standards are unacceptable. In allowing any exception to the standards, the County shall consider the following factors, including congestion/delays, rights of way, environmental impacts, safety, aesthetics, alternative transportation modes, and other geographical, environmental, social or economic factors on which the County may base findings to allow an exceedance of the standards. Exceptions to the standards will only be allowed after all reasonably feasible measures and options are explored.

to these standards may be necessary and shall be approved by the Community Resources Agency Director, who shall ensure that safe and adequate public access and circulation are preserved by such exceptions.

Policy 4.A.g. Require local roads serving new development to be aligned with existing local roads on abutting properties and extend existing roads to link with other roads wherever possible to provide continuity and provide safety in the local road system.

Policy 4.A.h. Accommodate through traffic in a manner that discourages the use of neighborhood Local Roads. This through traffic, particularly truck traffic, shall be directed to appropriate routes in order to maintain public safety and local quality of life by using design measures, such as appropriate signage and traffic calming devices.

Policy 4.A.i. Maximize intersection spacing on arterial and collector roadways and thoroughfares and minimize driveway encroachments. Except where specific site conditions warrant, no new intersection of a local road or new driveway with an arterial or collector road shall be closer to an existing local road or driveway than 500 feet in rural areas or 200 feet within urban areas.

Policy 4.A.5: Consider the traffic impacts of development in relation to General Plan growth policies and require new development to provide mitigation for its fair share of impacts to the County's transportation system. Assess the needs of street and road users regularly through the land development application review process.

Policy 4.A.p. Evaluate and analyze the traffic impacts of proposed land uses in relation to stated goals and objectives of the General Plan since growth policies regarding land use decisions directly affect the existing and future transportation system.

Policy 4.A.q. Evaluate the impacts of new development on the County's transportation system and require such development to provide mitigation for its fair share of the impact. New development that is determined by the County to create or exacerbate an identified deficiency in the transportation system may not be approved if a plan and funding program to provide needed roadway improvements have not been approved and if the mitigation provided by the development will not correct the deficiency or if it will create an additional burden on County transportation funds. This implementation program shall not apply to new development for which the County makes a finding of overriding considerations for traffic impacts related to the new development in accordance with the California Environmental Quality Act.

Policy 4.A.r. Implement Vehicles Miles Traveled for evaluating transportation impacts under CEQA to be consistent with SB 743.

Policy 4.A.6: Strive to maintain all components of the transportation system at adopted level of service standards.

Policy 4.A.t. Require new development to mitigate that development's impacts on the local and regional transportation system through the fair share contribution of improvements to the master planned system and/or the payment of Traffic Impact Mitigation Fees. Exceptions to the payment of traffic impact mitigation fees may apply to land uses listed in the Traffic Impact Mitigation Fee Schedule or when alternative sources of funding can be identified to offset foregone revenues.

Goal 4B. Encourage the use of alternative means of transportation by providing safe bicycle and pedestrian facilities within urban development boundary areas and between identified communities thereby reducing road congestion which improves circulation, health and air quality within the County.

Tuolumne County Regional Transportation Plan (RTP)

The Tuolumne County Regional Transportation Plan (RTP) was prepared for the Tuolumne County Transportation Commission (TCTC) to identify future transportation improvement projects and funding throughout the County (TCTC 2017). The RTP provides general regional transportation goals and proposed transportation improvement projects consistent with those goals. The applicable regional goals listed in the RTP are identified below and reviewed in Section 3.14.4.

Regional Goal 1: Enhance the quality of life of Tuolumne County residents by providing transportation access to jobs, housing, recreation, and community services.

Regional Goal 5: Practice environmental stewardship by protecting our air quality, natural resources, historical and cultural assets.

Regional Goal 6: Integrate land use and transportation decisions by prioritizing infrastructure investments within the Defined Community Boundaries that strikes a balance between development, available infrastructure, conserves natural resources, and provides for a high quality of life.

Regional Goal 7: Consider transportation safety, and security in all transportation funding decisions.

Regional Goal 8: Support a vibrant economy by enhancing the movement of goods and people to spur economic development, growth, and job creation.

Tuolumne County Active Transportation Plan (ATP) 2020

The Tuolumne County Active Transportation Plan (ATP) 2020 was prepared by the Tuolumne County Transportation Council, and outlines needs, goals, and objectives to promote and maintain a reliable, flexible, and multimodal transportation system for Tuolumne County residents, and is consistent with the General Plan. The ATP identifies the following primary goals as they relate to the active transportation network:

Goal 1. Develop a transportation system that maximizes the use of transportation facilities in the most efficient and cost-effective way.

Goal 2. Plan for a balanced multimodal transportation network that meets the needs of all users of streets, roads, and highways for safe and convenient travel.

Goal 3. Plan, support, and implement Smart Mobility Framework and Context Sensitive Solutions

4.6 California Public Utilities Commission

The Public Utilities Commission of the State of California (PUC) includes Regulations Governing Standards for Warning Devices for At-Grade Highway-Rail Crossings pursuant to General Order (G.O.) No. 75-D, adopted August 24, 2006; effective September 23, 2006. Development of the Tuolumne Facility Site would include the repaving and reopening of an existing driveway (currently gated and overgrown) for employee vehicle access located at the northwestern corner of the site. This crossing would occur on GSNR's privately-owned land, and would be subject to Section 7 (Private At-Grade Crossings) of G.O. No. 75-D, which includes the following regulations:

7. Private at-grade crossings

- 7.1 Pursuant to Public Utilities Code Section 7537, the Commission has the authority to determine the necessity for any private at-grade crossing and the place, manner, and conditions under which the at-grade crossing shall be constructed and maintained, and to fix and assess the cost and expense thereof. The Commission exercises such jurisdiction when it is either petitioned by one of the parties or Commission staff.
- 7.2 The establishment of a private at-grade crossing, other than a private at-grade crossing of the railroad tracks by the owning railroad, must be authorized through a written agreement between the railroad and the party requiring the crossing.
- 7.3 Standard 1-X. "PRIVATE CROSSING" sign shall be installed at all private at-grade crossings. See Figure 6 for additional specifications.
- 7.4 At all approaches to private at-grade crossings there shall be installed either a STOP sign (defined as a Standard R1-1 in the CA MUTCD) or an automatic warning device described in Sections 6.2 through 6.6.
 - a) If a STOP sign is used, the Standard 1-X sign shall be mounted on the post below it.
 - b) If a Standard 8, 8-A, 9, 9-A, or 9-E device is used, the Standard 1-X sign shall be attached to the mast of the warning device below the flashing light signals.
- 7.5 The language contained in the lower portion of the "PRIVATE CROSSING" sign shown in Figure 6 (in Public Utilities Code Section 7537), commencing with, and including the words "No Trespassing", shall be permitted at the option of the railroad.

4.7 Caltrans Transportation Impact Study Guide

As the owner and operator of the State Highway System, Caltrans, implements established state planning priorities in all functional plans, programs, and activities. Caltrans has the responsibility to coordinate and consult with local jurisdictions when proposed local land use planning and development may impact state highway facilities. To comply with SB 743 implementation, the Caltrans Transportation Impact Study Guide (May 2020), replaced the Guide for the Preparation of Traffic Impact Studies (Caltrans 2002). Per the 2020 Transportation Impact Study Guide, Caltrans' primary review focus is VMT, replacing LOS as the metric used in CEQA transportation analyses. Caltrans recommends use of OPR's recommended thresholds and guidance on methods of VMT assessment found in OPR's Technical Advisory (OPR 2018). In addition to VMT, Caltrans has developed an Interim Land Development and Intergovernmental Review Safety Review Practitioners Guidance which may request a targeted operational and safety analysis to address a specific geometric or operational issue related to the State Highway System and connections with the State Highway System (Caltrans 2020). To comply with this requirement, an assessment of queuing at study area intersections adjoining to roadways within the State Highway System has been included in this TIS.

5 Existing (2023) Conditions Analysis

This section details the existing intersection and roadway segment operations within the study area, with and without the project-added traffic. Existing traffic controls and geometrics at all study intersections are shown in Figure 8 and existing peak hour traffic volumes are shown in Figure 9. The existing plus project traffic volumes are shown on Figure 10.

5.1 Intersection Operations

Table 3 summarizes the results of the intersection analysis for the AM and PM peak hours for existing conditions. As shown in the table, all of the study intersections are currently operating at satisfactory levels of service (LOS D or better) under existing conditions and will continue to operate at satisfactory LOS with the project-added traffic.

Table 3. Existing plus Project Weekday Peak Hour Intersection LOS

No.	Intersection	Traffic Control	Existing				Existing plus Project			
			AM Peak		PM Peak		AM Peak		PM Peak	
			Delay ¹	LOS ²	Delay ¹	LOS ²	Delay ¹	LOS ²	Delay ¹	LOS ²
1	SR-120 - SR-108/La Grange Road - CR J59	TWSC	21.2	C	22.8	C	24.1	C	24.5	C
2	Site Access Employee Dwy/La Grange Road - CR J59	TWSC	0.0	A	0.0	A	10.1	B	7.5	A
3	Site Access Truck Dwy/La Grange Road - CR J59	TWSC	9.4	A	7.5	A	9.7	A	9.4	A
4	La Grange Road - CR J59/Yosemite Boulevard - SR-132	AWSC	8.4	A	8.4	A	8.5	A	8.5	A
5	Red Hill Road/Montezuma Road - SR-49 - SR-120	TWSC	10.2	B	10.8	B	10.3	B	10.9	B

Notes: HCM = Highway Capacity Manual; TWSC = Two-Way Stop-Controlled; X – Unsatisfactory operating conditions/LOS

¹ Delay in seconds per vehicle

² Level of Service (LOS)

5.2 Roadway Segment Operations

Study Area Roadway Segments

Table 4 shows the results of the roadway segment LOS analysis. As shown below, the study area roadway segments are operating at acceptable ADT volume-to-capacity conditions under existing conditions, with and without the project-added traffic.

Table 4. Existing ADT Roadway Segment Level of Service

No.	Location	Capacity ¹	Existing ADT ²	V/C Ratio	LOS	Project-Added Trips	Existing plus Project ADT	V/C Ratio	LOS	LOS D or Better?
1.	SR-120 - SR-108, west of La Grange Road - CR J59	19,550	14,535	0.743	C	20	14,555	0.745	C	Yes
2.	La Grange Road - CR J59, south of SR-120 - SR-108	13,260	4,212	0.318	A	674	4,886	0.368	A	Yes

Notes: ADT = average daily traffic; V/C = volume/capacity; **Bold:** Exceeds “Acceptable” LOS E or better threshold

¹ Capacity determined from Appendix D (Traffic Study) of the Tuolumne County General Plan Update DEIR (August 2016).

² Volume provided from average daily traffic (ADT) counts conducted on August 29, 2023

Haul Routes

Feedstock would be sourced within the Working Area, as described in Section 2.4 of the DEIR, and the primary haul routes identified in Figure 4 would be used to transport raw materials to the Tuolumne Facility. Although the specific locations of any given logging operation is unknown at this time, and it is expected that biomass acquisition would be spread out in different locations across the Working Area, representative locations along the haul routes identified in Chapter 2.1 are tabulated below, and the total average daily project haul trucks were added to the existing Caltrans counts at each location. As shown in Table 5 and illustrated in Figure 14, all locations would operate with acceptable conditions with and without the addition of total project haul trucks under Existing conditions.

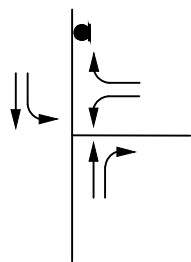
Table 5. Representative Haul Routes and Levels of Service - Existing

Haul Route	Caltrans Postmile	Latitude	Longitude	Existing ADT	V/C Ratio	LOS	Project-Added Trips (Logging/Haul Trucks)	Existing plus Project ADT	V/C Ratio	LOS
Hwy 4	29.62	38.139059	-120.456141	7,283	0.362	A	236	7,519	0.374	A
Hwy 4	18.556	38.067128	-120.59894	510	0.038	A	236	746	0.056	A
Hwy 41	17.91	37.12444	-119.736963	16,646	0.813	D	236	16,882	0.824	D
Hwy 49	1.65	38.573869	-120.846136	2,133	0.161	A	236	2,369	0.179	A
Hwy 49	9.42	38.087694	-120.57103	8,011	0.604	B	236	8,247	0.622	B
Hwy 49	29.45	37.569309	-120.119433	895	0.045	A	236	1,131	0.056	A
Hwy 50	20.296	38.731226	-120.76013	25,282	0.340	A	236	25,518	0.343	A
Hwy 50	65.619	38.824307	-120.044235	16,126	0.887	D	236	16,362	0.900	D
Hwy 88	1.25	38.704996	-120.050932	2,549	0.207	A	236	2,785	0.226	A
Hwy 88	22.69	38.412824	-120.667363	12,485	0.639	B	236	12,721	0.651	B
Hwy 108	7.511	37.996508	-120.267276	10,924	0.412	A	236	11,160	0.421	A
Hwy 108	9.6	38.350174	-119.536286	1,613	0.131	A	236	1,849	0.150	A
Hwy 120	32.184	37.838293	-120.231647	8,947	0.675	B	236	9,183	0.693	B
Hwy 120	8.19	37.84335	-120.508081	13,421	0.686	B	236	13,657	0.699	B
Hwy 132	7.58	37.706276	-120.334027	1,509	0.114	A	236	1,745	0.132	A
Hwy 132	45.81	37.661141	-120.483363	1,769	0.133	A	236	2,005	0.151	A
Hwy 140	29.689	37.564499	-119.939815	2,653	0.215	A	236	2,889	0.234	A
Hwy 168	15.47	36.873802	-119.557381	7,283	0.549	A	236	7,519	0.567	A
Hwy 168	65.84	37.255427	-119.161485	1,144	0.093	A	236	1,380	0.112	A
Road CR J59		37.840655	-120.507755	3,155	0.287	A	236	3,391	0.308	A

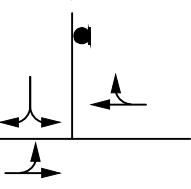
Source: Appendix C

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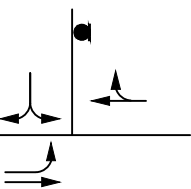
1 SR-120/SR-108
La Grange Road - CR J59



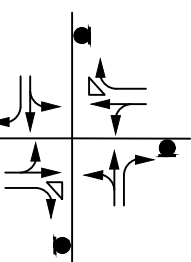
2 SPI Employee Dwy
La Grange Road - CR J59



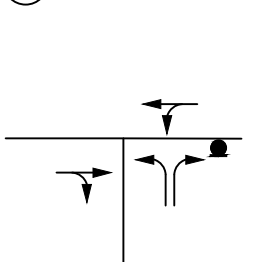
3 SPI Truck Dwy
La Grange Road - CR J59



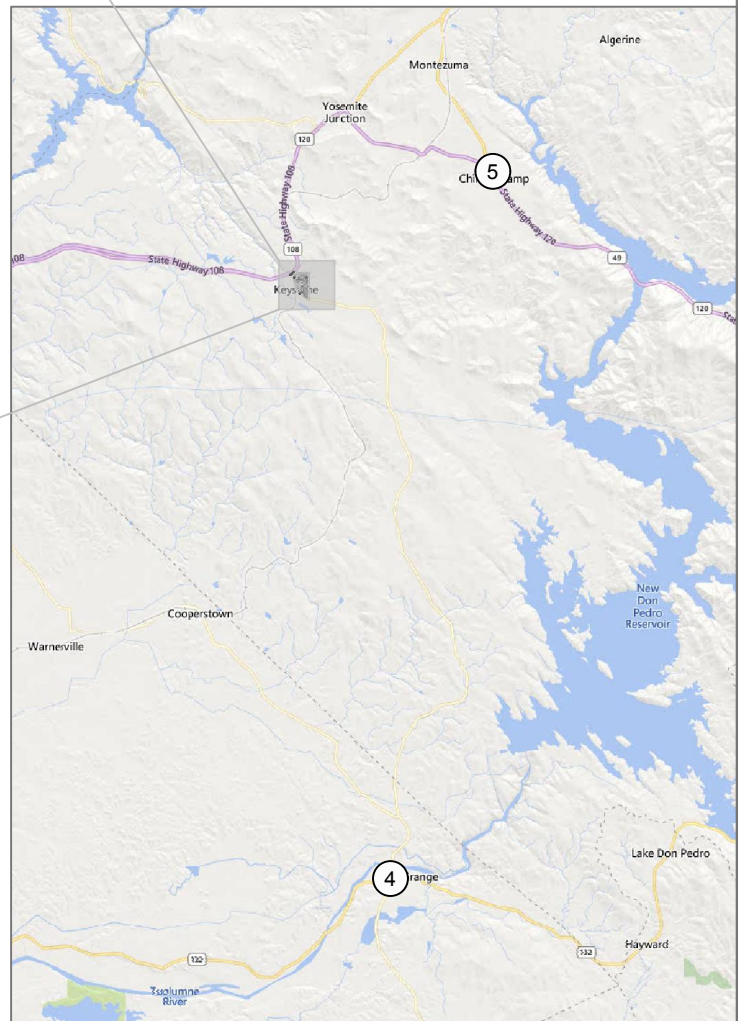
4 La Grange Road - CR J59
Yosemite Boulevard - SR-132



5 Red Hill Road
Montezuma Road - SR-49/SR-120



- Legend**
- Study Intersection
 - Stop Sign
 - Lane Geometrics



SOURCE: Bing Maps (Accessed 2023), Nexus PMG 2021

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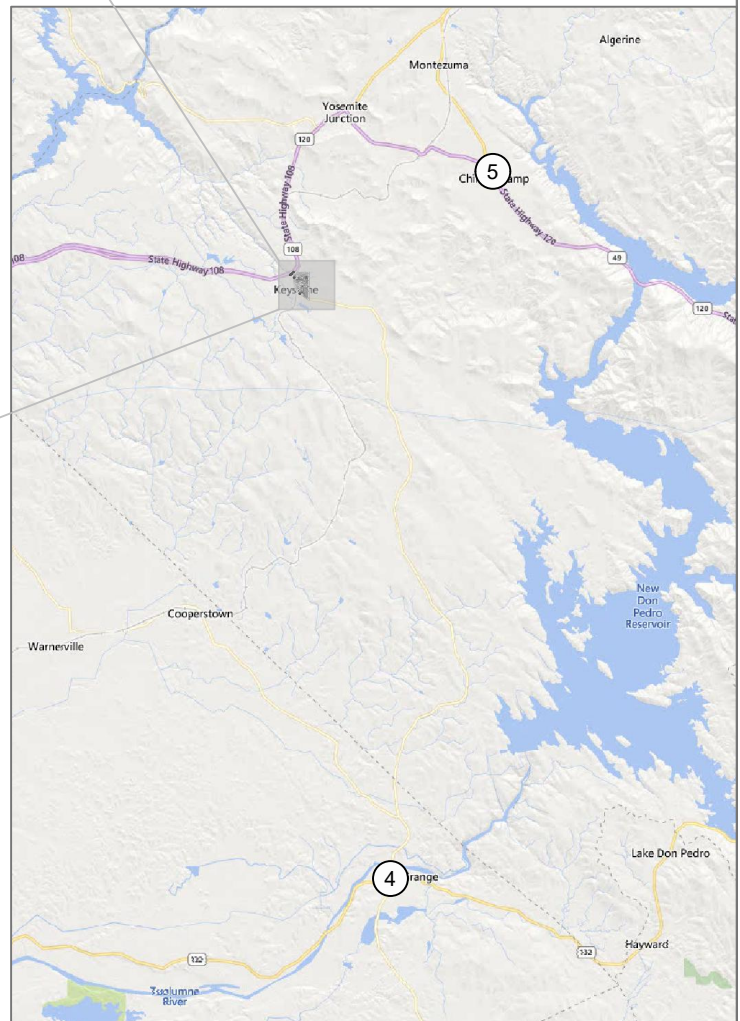
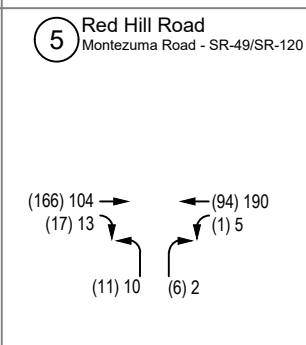
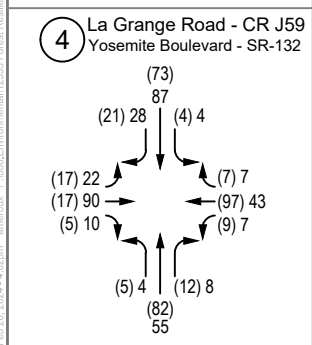
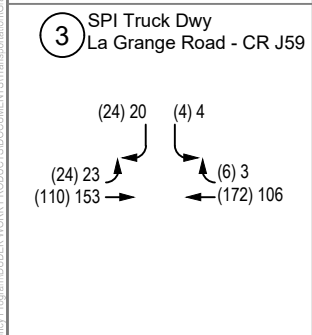
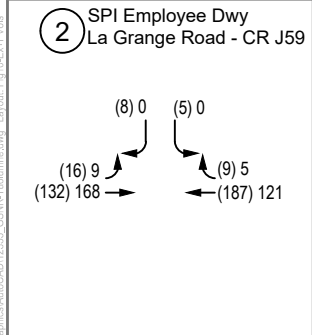
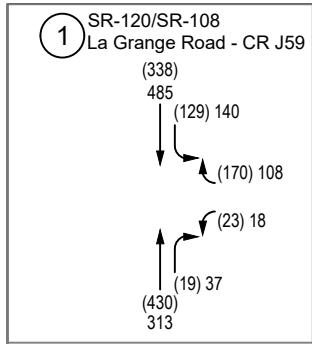
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SOURCE: Bing Maps (Accessed 2023), Nexus PMG 2021

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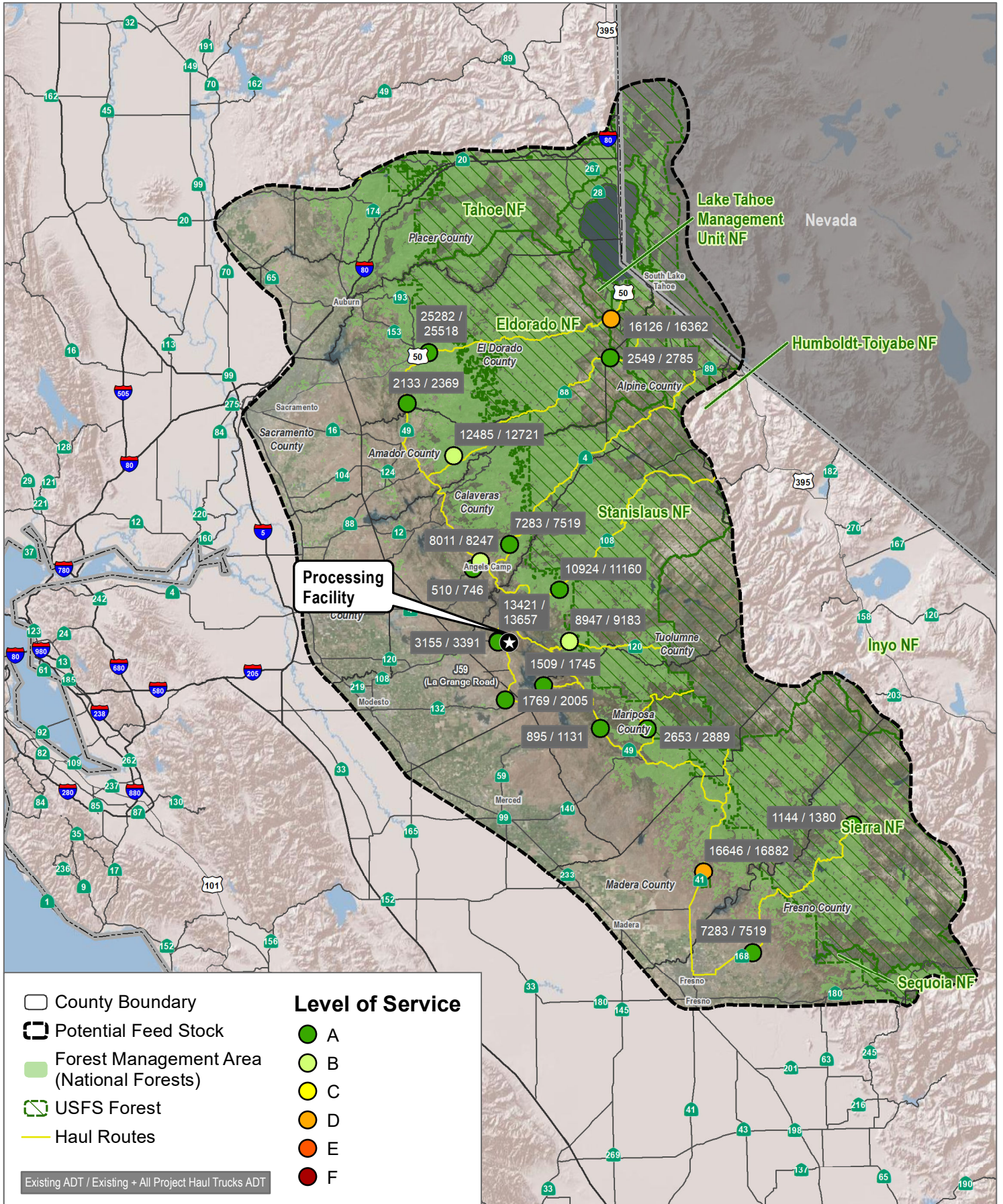
Legend

- (X)** Study Intersection
- (X)** AM Peak Hour Traffic Volumes
- X** PM Peak Hour Traffic Volumes

SOURCE: Bing Maps (Accessed 2023), Nexus PMG 2021

FIGURE 10
Existing plus Project Peak Hour Traffic Volumes
Golden State Natural Resources Forest Resiliency Demonstration Project

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SOURCE: Bing Maps 2022; Caltrans 2021

FIGURE 11

Existing Conditions Haul Route ADT and LOS Analysis (Tuolumne Facility)

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6 Opening Year (2025) Analysis

This section describes conditions within the study area in the short-term (estimated to be year 2025) when construction of the project and cumulative projects in the area would occur. The existing intersection configurations (shown in Figure 8) have been assumed to be preserved under the Opening Year (2025) conditions.

6.1 Cumulative Projects

Cumulative projects are projects that are proposed and in the development review process, but not yet fully approved; or projects that have been approved, but not fully constructed or occupied. Four (4) cumulative projects were identified near the proposed Tuolumne Facility. Project trip generation for the cumulative projects were estimated using trip generation rates provided by the ITE Trip Generation Handbook, 11th Edition, or derived from traffic impact analyses, where available. As shown in Appendix D, the cumulative projects are forecast to generate approximately 3,077 daily trips, 313 AM peak hour trips, and 399 PM peak hour trips. Adjusting for PCE, the cumulative projects would generate approximately 3,577 daily trips, 383 AM peak hour trips, and 467 PM peak hour trips.

Figure 12 shows the locations of all cumulative projects, along with the traffic volumes distributed throughout the network.

6.2 Intersection Operations

The existing intersection configurations have been assumed to be preserved under the Opening Year (2025) conditions. Figure 13 illustrates the Opening Year (2025) (no project) traffic volumes for the peak hour conditions and Figure 14 illustrates the Opening Year (2025) (with project) traffic volumes for the peak hour conditions.

Table 6 summarizes the results of the Opening Year (2025) intersection analysis for the AM and PM peak hours, with and without the project. As shown in the table, all study area intersections are forecast to operate at satisfactory levels of service (LOS D or better) under Opening Year (2025) conditions with and without the project-added traffic.

Table 6. Opening Year (2025) Weekday Peak Hour Intersection LOS

No.	Intersection	Traffic Control	Opening Year (2025)				Opening Year (2025) Plus Project			
			AM Peak		PM Peak		AM Peak		PM Peak	
			Delay ¹	LOS ²	Delay ¹	LOS ²	Delay ¹	LOS ²	Delay ¹	LOS ²
1	SR-120 - SR-108/La Grange Road - CR J59	TWSC	25.3	D	31.4	D	29.0	D	34.4	D
2	Site Access Employee Dwy/La Grange Road - CR J59	TWSC	0.0	A	0.0	A	10.5	B	7.6	A

Table 6. Opening Year (2025) Weekday Peak Hour Intersection LOS

No.	Intersection	Traffic Control	Opening Year (2025)				Opening Year (2025) Plus Project			
			AM Peak		PM Peak		AM Peak		PM Peak	
			Delay ¹	LOS ²	Delay ¹	LOS ²	Delay ¹	LOS ²	Delay ¹	LOS ²
3	Site Access Truck Dwy/La Grange Road - CR J59	TWSC	9.7	A	7.5	A	10.0	B	9.6	A
4	La Grange Road - CR J59/Yosemite Boulevard - SR-132	AWSC	8.7	A	8.6	A	8.7	A	8.7	A
5	Red Hill Road/Montezuma Road - SR-49 - SR-120	TWSC	10.7	B	11.6	B	10.8	B	11.7	B

Notes: HCM = Highway Capacity Manual; TWSC = Two-Way Stop-Controlled; X – Unsatisfactory operating conditions/LOS

¹ Delay in seconds per vehicle

² Level of Service (LOS)

6.3 Roadway Segment Operations

Table 7 shows the results of the roadway segment LOS analysis. As shown below, the study area roadway segments are forecast to operate at acceptable conditions under Opening Year (2025) conditions, with and without the project traffic.

Table 7. Opening Year (2025) ADT Roadway Segment Level of Service

No.	Location	Capacity ¹	Opening Year (2025) ADT ²	V/C Ratio	LOS	Project-Added Trips	Opening Year (2025) plus Project ADT	V/C Ratio	LOS	LOS D or Better?
1.	SR-120 - SR-108, west of La Grange Road - CR J59	19,550	16,169	0.827	D	20	16,189	0.828	D	Yes
2.	La Grange Road - CR J59, south of SR-120 - SR-108	13,260	4,890	0.369	A	674	5,564	0.420	A	Yes

Notes: ADT = average daily traffic; V/C = volume/capacity; **Bold:** Exceeds “Acceptable” LOS E or better threshold

¹ Capacity determined from Appendix D (Traffic Study) of the Tuolumne County General Plan Update DEIR (August 2016).

² Volume provided from average daily traffic (ADT) counts conducted on August 29, 2023

Haul Routes

As noted above, although the specific locations of any given logging operation is unknown at this time, and it is expected that biomass acquisition would be spread out in different locations across the Working Area,

representative locations along the haul routes identified in Chapter 2.1 are tabulated below, and the total average daily project haul trucks were added to the existing Caltrans counts at each location.

As shown in Table 8 and illustrated in Figure 14, all locations would operate with acceptable conditions with and without the addition of total project haul trucks under Opening Year (2025) conditions, with exception of the segment selected for US-50 at Caltrans Postmile 65.619. However, the segment is forecast to operate at LOS E under baseline Opening Year (2025) conditions, and the increase between with and without project conditions is minimal (1.2%, or an increase of 0.012 V/C). Additionally, this increase would not result in a change in LOS grade, and LOS along this segment would remain at E with the addition of all haul truck trips.

Table 8. Representative Haul Routes and Levels of Service - Opening Year (2025)

Haul Route	Caltrans Postmile	Latitude	Longitude	Opening Year (2025) ADT	V/C Ratio	LOS	Project-Added Trips (Logging/Haul Trucks)	Opening Year (2025) plus Project ADT	V/C Ratio	LOS
SR-4	29.62	38.139059	-120.456141	7,577	0.377	A	236	7,813	0.389	A
SR-4	18.556	38.067128	-120.59894	531	0.040	A	236	767	0.058	A
SR-41	17.91	37.12444	-119.736963	17,318	0.845	D	236	17,554	0.857	D
SR-49	1.65	38.573869	-120.846136	2,219	0.167	A	236	2,455	0.185	A
SR-49	9.42	38.087694	-120.57103	8,335	0.629	B	236	8,571	0.646	B
SR-49	29.45	37.569309	-120.119433	931	0.046	A	236	1,167	0.058	A
US-50	20.296	38.731226	-120.76013	26,303	0.354	A	236	26,539	0.357	A
US-50	65.619	38.824307	-120.044235	16,777	0.922	E	236	17,013	0.935	E
SR-88	1.25	38.704996	-120.050932	2,652	0.215	A	236	2,888	0.234	A
SR-88	22.69	38.412824	-120.667363	12,989	0.664	B	236	13,225	0.676	B
SR-108	7.511	37.996508	-120.267276	11,365	0.429	A	236	11,601	0.437	A
SR-108	9.6	38.350174	-119.536286	1,678	0.136	A	236	1,914	0.155	A
SR-120	32.184	37.838293	-120.231647	9,308	0.702	C	236	9,544	0.720	C
SR-120	8.19	37.84335	-120.508081	13,963	0.714	C	236	14,199	0.726	C
SR-132	7.58	37.706276	-120.334027	1,570	0.118	A	236	1,806	0.136	A
SR-132	45.81	37.661141	-120.483363	1,840	0.139	A	236	2,076	0.157	A
SR-140	29.689	37.564499	-119.939815	2,760	0.224	A	236	2,996	0.243	A
SR-167	15.47	36.873802	-119.557381	7,577	0.571	A	236	7,813	0.589	A
SR-168	65.84	37.255427	-119.161485	1,190	0.096	A	236	1,426	0.116	A
Road CR J59		37.840655	-120.507755	3,282	0.298	A	236	3,518	0.320	A

Source: Appendix C

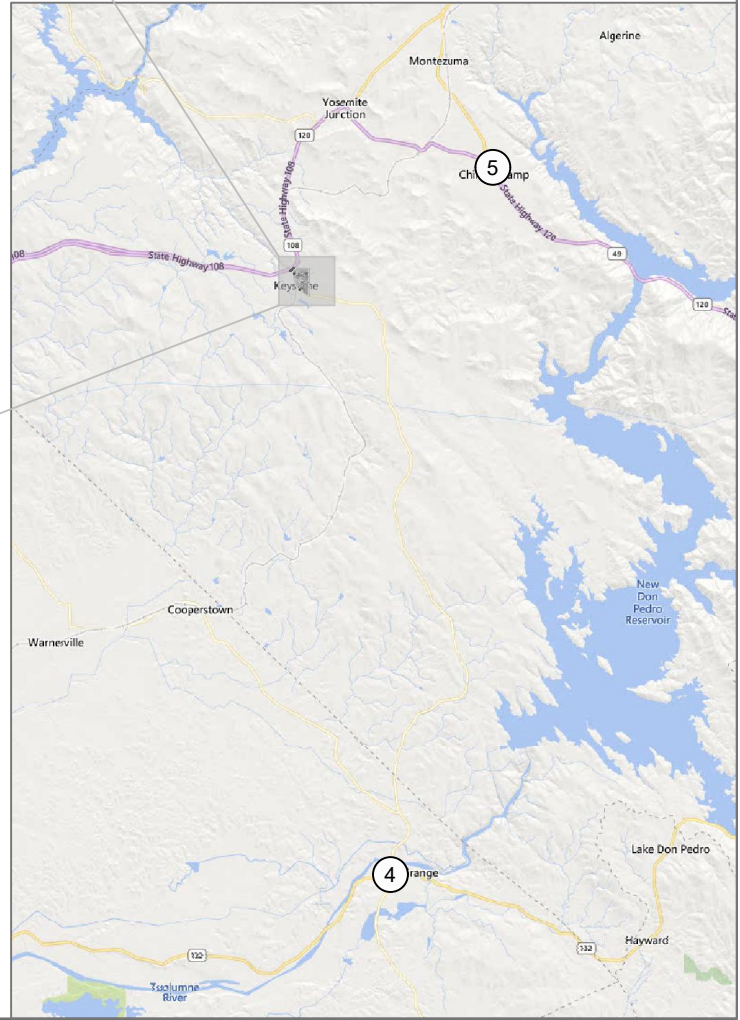
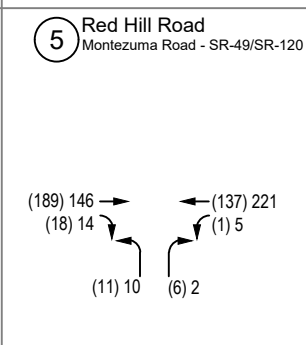
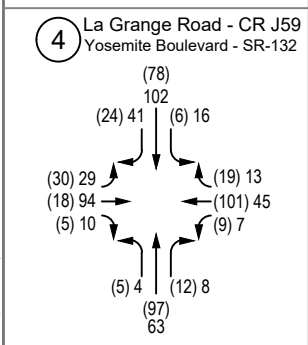
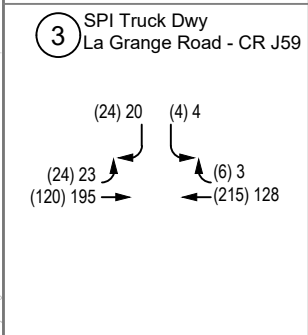
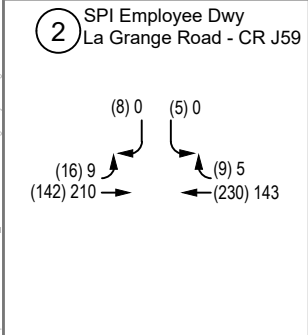
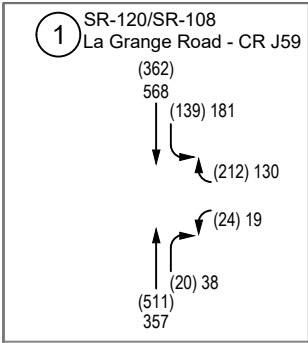
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FIGURE 13
Opening Year (2025) Peak Hour Traffic Volumes
Golden State Natural Resources Forest Resiliency Demonstration Project

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Legend

- X Study Intersection
- (X) AM Peak Hour Traffic Volumes
- X PM Peak Hour Traffic Volumes

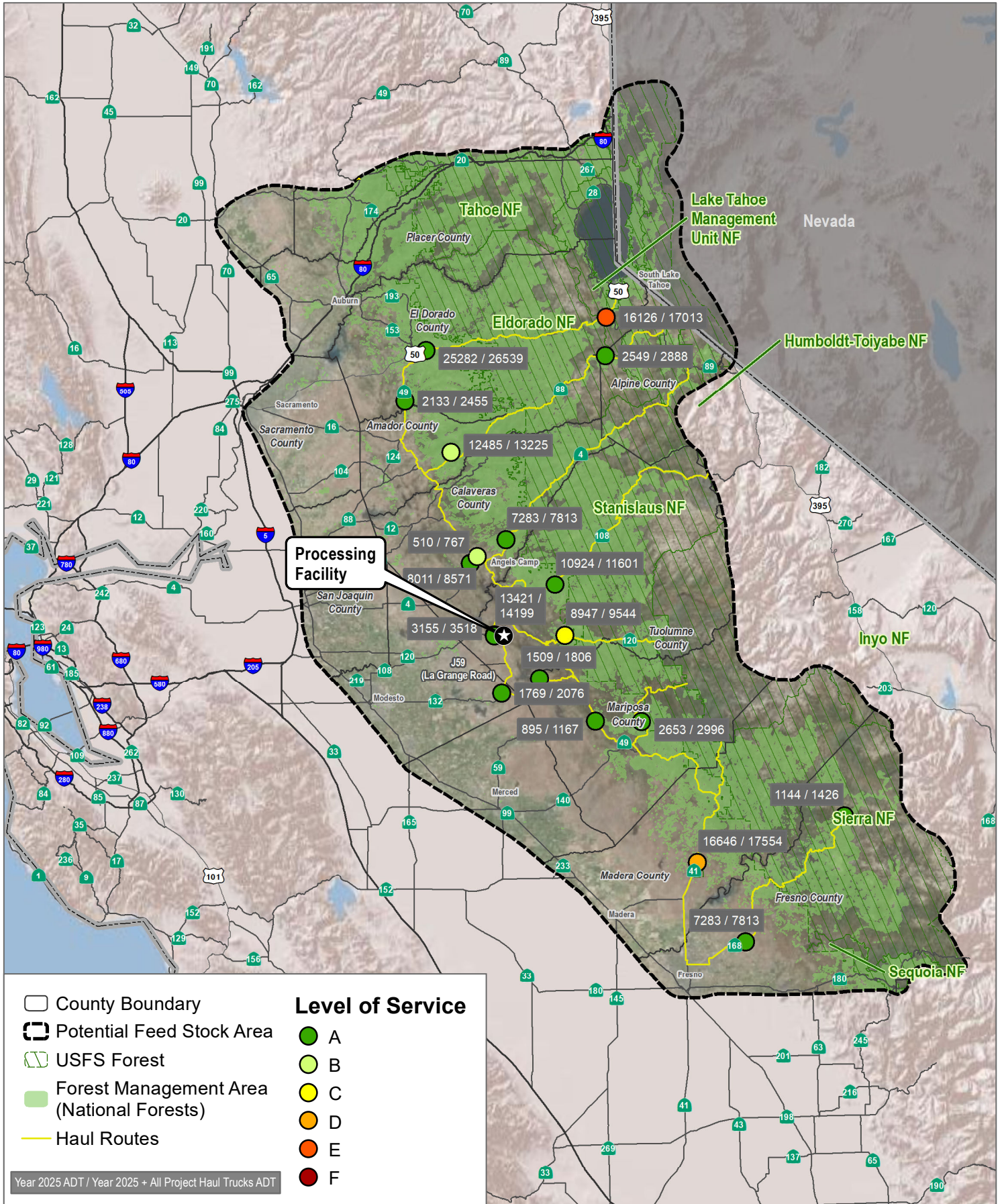
SOURCE: Bing Maps (Accessed 2023), Nexus PMG 2021



NOT TO SCALE

FIGURE 14
Opening Year (2025) plus Project Peak Hour Traffic Volumes

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SOURCE: Bing Maps 2022; Caltrans 2021

FIGURE 15

Opening Year (2025) Conditions Haul Route ADT and LOS Analysis (Tuolumne Facility)

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7 Project Site Access

7.1 Vehicular Site Access and Circulation

Vehicular and truck traffic access into the site will be provided via two existing roadways from La Grange Road – CR J59 (analyzed as intersections #2 and #3), as shown in Figure 1, Project Location and Study Area. All study area intersections have been analyzed as unsignalized intersections with stop control at the minor approach where applicable.

7.1.1 Project Site Access

Figure 2 illustrates the vehicular and truck traffic access, as indicated below:

- Intersection #2 via Site Access Driveway North (currently undeveloped) – full access; passenger vehicles
- Intersection #3 via Site Access Driveway North (currently operational) – full access; trucks

Truck Access

Truck traffic will utilize the SR-108/120 intersection with La Grange Road to the north (Intersection #1) and the SR-132 intersection with La Grange Road to the south (Intersection #4) to access the site via the existing driveway noted above (Intersection #3).

In Tuolumne County, SR-108 and SR-120 have terminal access, and allow the use of both STAA and California legal trucks. However, in Mariposa County, SR-120 allows only trucks that are no longer than 65 feet as per the kingpin-to-rear-axle (KPRA) advisory. Additionally, SR-132 to the south is a Caltrans designated truck route; however, east of the City of Modesto, SR-132 allows only trucks that are no longer than 65 feet as per the California Legal Route, and east of the La Grange Road intersection, a 30-foot kingpin to rear axle (KPRA) advisory sign is posted.

To verify that sufficient turning radii and pavement right-of-way (ROW) is available, a truck turn analysis using AutoTURN 2024 software has been completed to show the largest potential trucks (chip trucks) accessing the site, along with the most common log trucks.

- **WB-62 Truck (Project Chip Trucks):** AASHTO WB-62 design vehicles are representative of “Green” STAA Trucks allowed on SR-108/120 with a 48-foot semitrailer. Although up to 53-foot maximum semitrailers are allowed along on STAA routes, project operations would not include trucks larger than a WB-62. As shown in Figure 16, the WB-62 design vehicle would be able to maneuver the major highway intersections within the pavement provided, although may encroach over lane striping. It must be noted that the project is unlikely to utilize the La Grange Road/SR-132 intersection to the south for any project chip truck operations. The standard WB-62 design vehicle turning template is included to provide a conservative analysis at both intersections.
- **WB-62 Truck with 30-foot KPRA and 44-foot semitrailer (Project Chip Trucks):** AASHTO WB-62 design vehicle, modeled with an adjustment to the semitrailer length to represent a “Black” California Legal Truck, with an overall length of 65 feet. Additionally, due to the 30-foot KPRA advisory noted on SR-132 east of La

Grange Road, an additional adjustment has also been made. As shown in Figure 17, the WB-62 design vehicle with 30-foot KPRA adjustment would also be able to maneuver the major highway intersections within the pavement provided, with a slightly better turning radius than the standard WB-62, although may continue to encroach over lane striping. As noted above, the project is unlikely to utilize the La Grange Road/SR-132 intersection to the south for any project chip truck operations. This turning template, modeled with an adjustment to the overall length and KPRA given the advisory on SR-132, is included to provide a more representative truck for project operations at both intersections.

- **Transcraft 45-foot Flatdeck (Project Pulp Log Trucks):** A Transcraft TL-2000 45-foot flatdeck truck from has been used to represent the 45-foot fixed-axle pulp log trailers used in the project’s logging operations. This truck represents the most common truck to be used in logging operations as most roundwood logs range from 16- to 20-feet long. As shown in Figure 18, this 45-foot fixed-axle truck would be able to maneuver the major highway intersections within the pavement provided, although may continue to encroach over some lane striping.
- **Transcraft 45-foot Flatdeck with Rear Axle Steering (Project Standard Log Trucks):** The Transcraft TL-2000 45-foot flatdeck truck, modeled with rear axle steering and a 35-foot distance between axles (representing the placement of upright log “bunks”), has been used to represent the standard log trailers used in the project’s logging operations, representing approximately 30- to 40-percent of project log trucks. As shown in Figure 19, these log trucks with rear axle steering have the greatest maneuverability, and would encroach over minimal lane striping.

Although the largest design trucks included in this turn analysis may encroach over lane striping, sufficient pavement ROW is provided at both intersections such that trucks would not be required to encroach into opposing traffic waiting at stop-controlled approaches (e.g., La Grange Road approach to SR-108/120 and SR-132 westbound approach to La Grange Road).

Employee Access

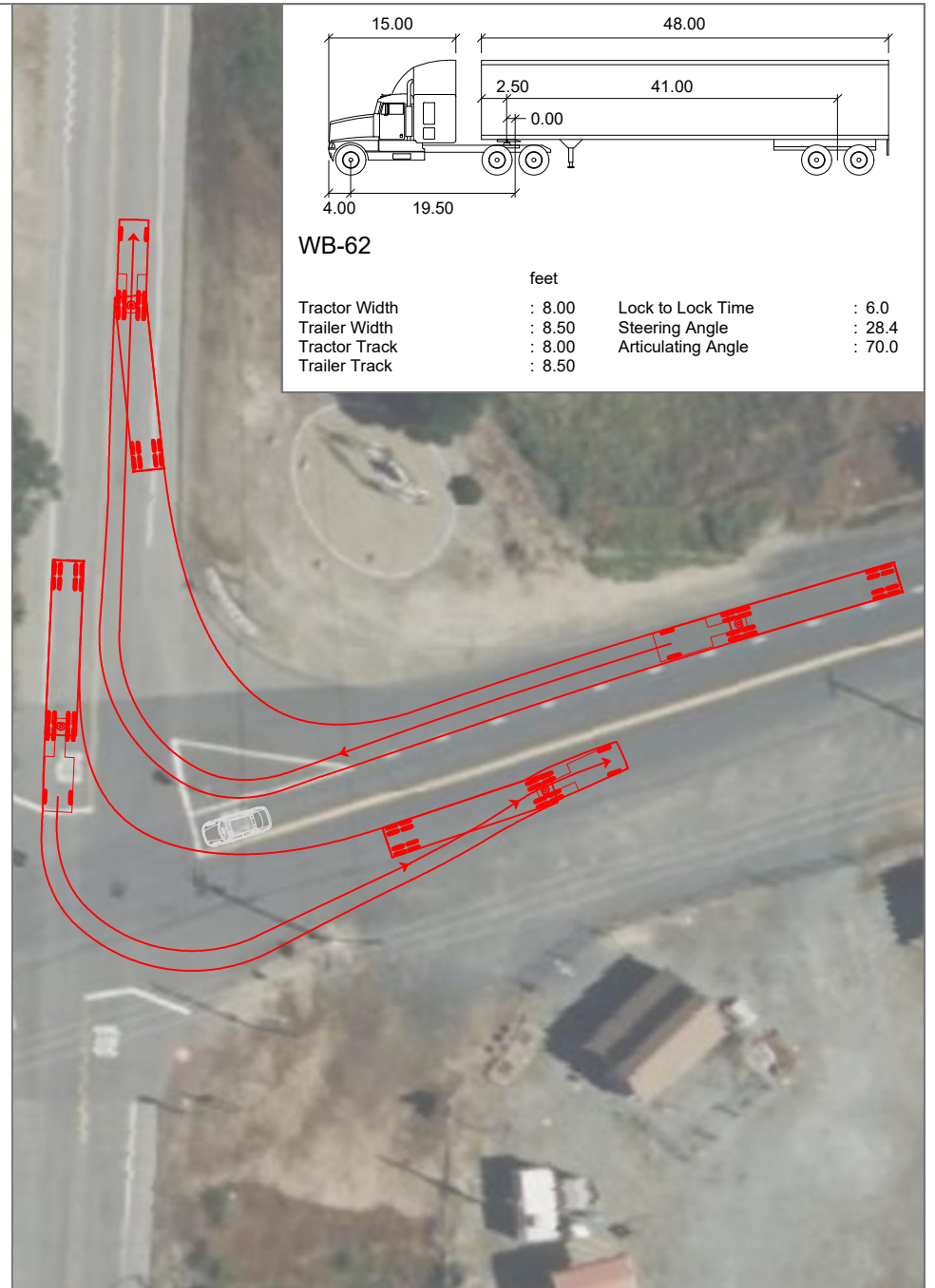
The proposed employee access road would be located along an existing (gated) driveway, currently overgrown and not utilized for vehicles. The alignment extends from La Grange Road, and would cross the railroad tracks at an at-grade crossing approximately 65-feet from the current edge of lane striping. As such, this crossing and any proposed improvements would be subject to the Public Utilities Commission Regulation, General Order No. 75-D (7), as noted in Chapter 4.6. The project site property is subject to a recorded agreement for utilization of the railroad crossing at Mile Post 29.5 of the Oakdale-Sonora Branch, dated March 20, 2014. The agreement is effective for 20 years, and would not require renewal until 2034; therefore, the project would be consistent with PUC regulations at this railroad crossing.

Emergency Access

As previously discussed, access to the project site would be provided from the SR-120-SR-108/La Grange Road-CR J59 intersection, and at driveways along La Grange Road, utilizing the existing southerly driveway to the project site for truck access and the existing northerly driveway for employee access. The northerly driveway would be paved and improved to meet the County’s access standards. All project access improvements would be reviewed by Tuolumne County. This approach would ensure compliance with all applicable design requirements. As mentioned above, the project has two main access roadways into the site, and in the event of an emergency, all the driveways would enable vehicles to enter/exit the project site. In the

event of an emergency during switching, in which the northern driveway may be blocked for up to eight (8) minutes, access to the site would continue to be available at the southern driveway. The nearest fire station (Cal Fire Green Springs Station) is located south of the site and southeast of the train tracks, which would further enable emergency access to the site in the event a train is crossing La Grange Road and/or the northern driveway. . All on-site improvements will be designed with adequate width, turning radius, and grade to facilitate access by County's firefighting apparatus, and to provide alternative emergency ingress and egress. The site plan would be subject to plan review by the County's Fire Department to ensure proper access for fire and emergency response is provided and required fire suppression features are included. Therefore, the project's impact due to inadequate emergency access would be less than significant. As such, no hazardous design features would be part of the project's roadway improvements or site access.

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SOURCE: Bing Maps, AutoTURN Pro 2024

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WB-62 - with 30' KPRA & 65' Max Length

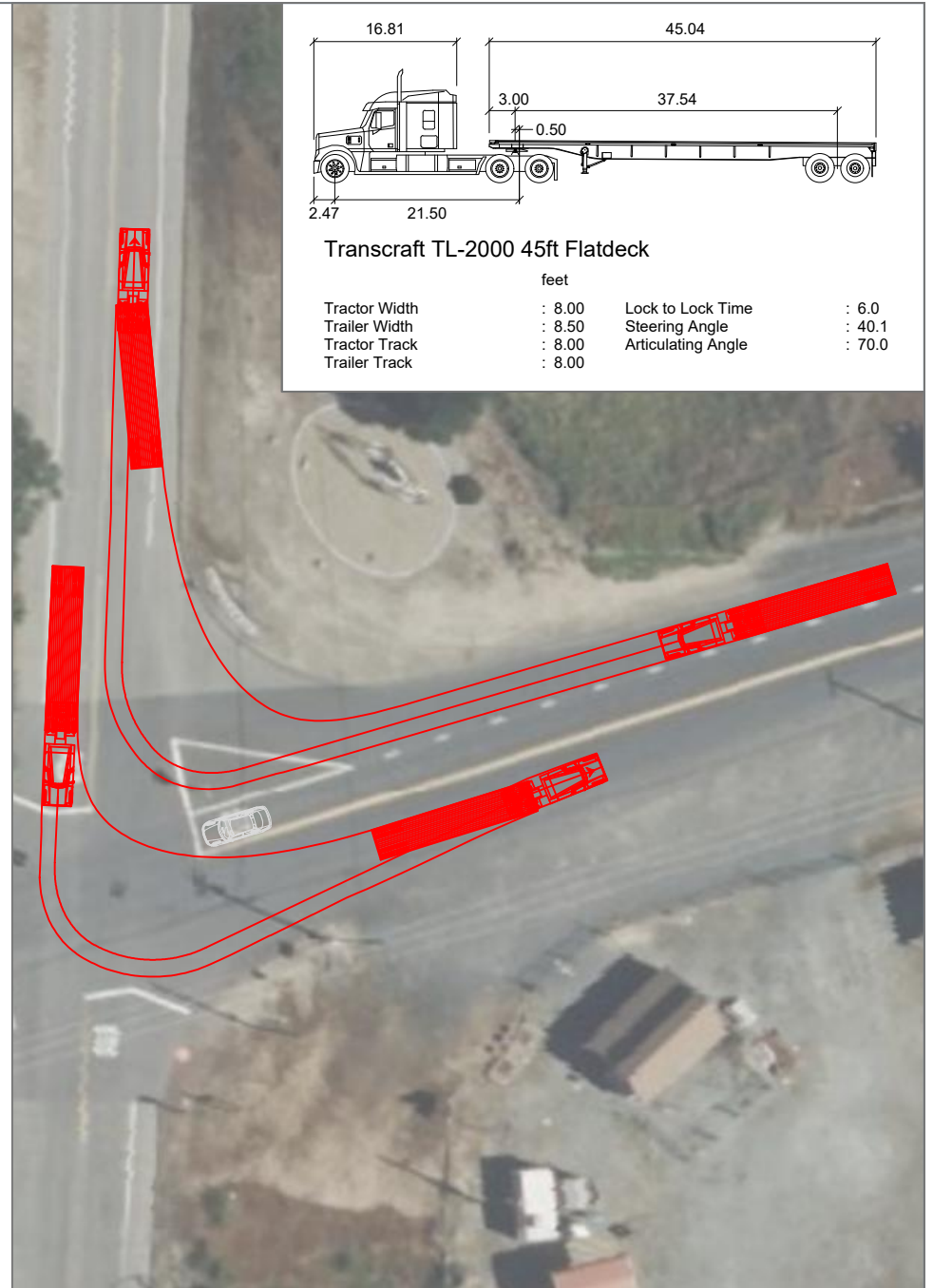
	feet	
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Trailer Width	: 8.50	Steering Angle : 28.4
Tractor Track	: 8.00	Articulating Angle : 70.0
Trailer Track	: 8.50	

SOURCE: Bing Maps, AutoTURN Pro 2024

FIGURE 17
AutoTurn Analysis - WB 62 with 30-foot KPRA & 65' Max Length

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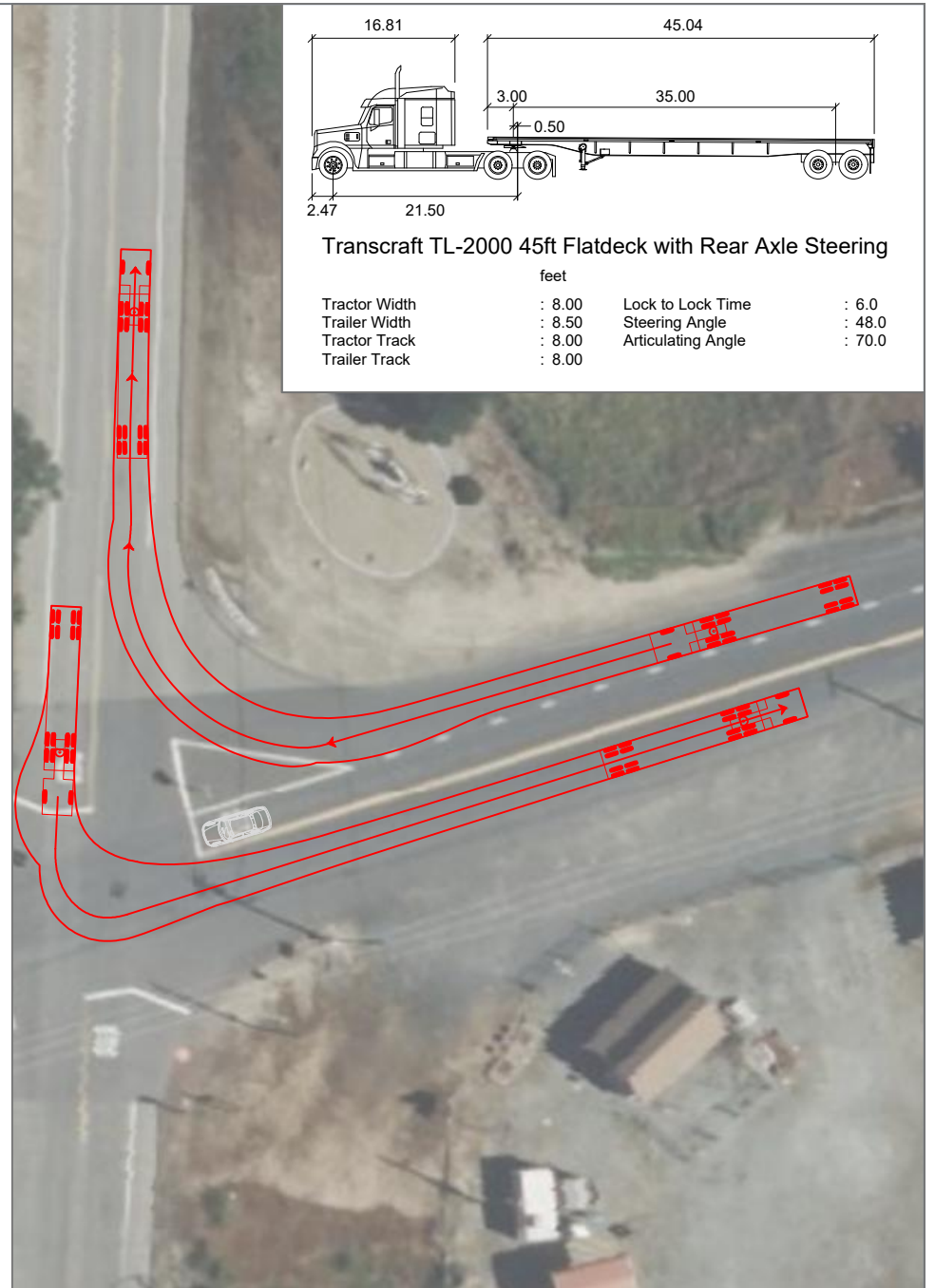
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SOURCE: Bing Maps, AutoTURN Pro 2024

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SOURCE: Bing Maps, AutoTURN Pro 2024

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7.1.2 Off-site Queuing Analysis

A queuing analysis was performed for all study intersection to assess vehicle queues along the roadways, specifically at intersections with Caltrans facilities. The queuing analysis was performed for the Existing/Existing plus Project, and Opening Year (2025)/ Opening Year (2025) plus Project conditions, using Synchro/SimTraffic software, as summarized below. All SimTraffic queuing reports are provided in Appendix E.

Existing Plus Project Conditions

As shown in Table 9, Peak-Hour Queuing Summary for Existing plus Project Conditions, all intersection turning movements are anticipated to operate within available stacking distances and/or would not impede flow along major movements during the peak hours based on the 95th percentile peak hour traffic flows for the Existing plus Project traffic conditions. As such, there are no turning movements to and/or from any Caltrans facilities that are anticipated to experience queuing and/or safety issues during the weekday AM or weekday PM peak hours under Existing plus Project traffic conditions.

Opening Year (2025) Plus Project Conditions

As shown in Table 10, Peak-Hour Queuing Summary for Opening Year (2025) plus Project Conditions, all intersection turning movements are anticipated to operate within available stacking distances and/or would not impede flow along major movements during the peak hours based on the 95th percentile peak hour traffic flows for the Opening Year (2025) plus Project traffic conditions. As such, there are no turning movements to and/or from any Caltrans facilities that are anticipated to experience queuing and/or safety issues during the weekday AM or weekday PM peak hours under Opening Year (2025) plus Project traffic conditions.

Table 9. Peak-Hour Queuing Summary for Existing Plus Project Conditions

No.	Intersection	Movement	Available Stacking Distance (Feet)	Existing (2023)				Existing plus Project			
				95th Percentile Queue (Feet)		Exceeds Stacking Distance? ¹		95th Percentile Queue (Feet)		Exceeds Stacking Distance? ¹	
				AM Peak Hour	PM Peak Hour	AM	PM	AM Peak Hour	PM Peak Hour	AM	PM
1	SR-120 - SR-108/La Grange Road - CR J59	WBL	500	47	36	No	No	50	42	No	No
		WBR	200	43	47	No	No	45	43	No	No
		NBR	130	0	49	No	No	0	18	No	No
		SBL	475	52	0	No	No	62	56	No	No
2	Site Access Employee Dwy/La Grange Road - CR J59	EBLT	500	0	0	No	No	17	15	No	No
		SBLR	50	0	0	No	No	32	0	No	No
3	Site Access Truck Dwy/La Grange Road - CR J59	EBL	300	5	8	No	No	18	19	No	No
		SBLR	150	21	0	No	No	42	36	No	No
4	La Grange Road - CR J59/Yosemite Boulevard - SR-132	EBLT	1,200	38	47	No	No	40	47	No	No
		WBLT	1,000	42	38	No	No	43	41	No	No
		NBLT	270	43	43	No	No	43	44	No	No
		NBR	25	35	29	Yes ²	Yes ²	36	29	Yes ²	Yes ²
		SBLT	220	45	46	No	No	44	45	No	No
		SBR	25	41	46	Yes ²	Yes ²	40	46	Yes ²	Yes ²
5	Red Hill Road/Montezuma Road - SR-49 - SR-120	WBLT	180	0	6	No	No	0	12	No	No
		NBL	215	18	20	No	No	17	16	No	No
		NBR	50	21	17	No	No	21	13	No	No

Source: Appendix E

Notes: XBL = [DirectionBound]left; XBR = [DirectionBound]right; XBT = [DirectionBound]through; XBLTR = [DirectionBound]left-through-right; XBLT = [DirectionBound]left-through

¹ Stacking distance would be exceeded if the required stacking distance is greater than the stacking distance provided.

² Queue extends past available pocket length for movement (measured as a 25-foot defacto right turn lane) but only extends approximately one vehicle length into the through (or left) turning lane.

Table 10. Peak-Hour Queuing Summary for Opening Year (2025) Plus Project Conditions

No.	Intersection	Movement	Available Stacking Distance (Feet)	Opening Year (2025)				Opening Year (2025) plus Project			
				95th Percentile Queue (Feet)		Exceeds Stacking Distance? ¹		95th Percentile Queue (Feet)		Exceeds Stacking Distance? ¹	
				AM Peak Hour	PM Peak Hour	AM	PM	AM Peak Hour	PM Peak Hour	AM	PM
1	SR-120 - SR-108/La Grange Road - CR J59	WBL	500	53	56	No	No	99	46	No	No
		WBR	200	49	45	No	No	50	45	No	No
		NBR	130	0	0	No	No	0	11	No	No
		SBL	475	62	64	No	No	65	71	No	No
2	Site Access Employee Dwy/La Grange Road - CR J59	EBLT	500	0	0	No	No	22	13	No	No
		SBLR	50	0	0	No	No	35	0	No	No
3	Site Access Truck Dwy/La Grange Road - CR J59	EBL	300	7	10	No	No	24	19	No	No
		SBLR	150	20	0	No	No	42	39	No	No
4	La Grange Road - CR J59/Yosemite Boulevard - SR-132	EBLT	1,200	39	48	No	No	40	50	No	No
		WBLT	1,000	45	42	No	No	48	40	No	No
		NBLT	270	45	42	No	No	41	42	No	No
		NBR	25	34	27	Yes ²	Yes ²	36	31	Yes ²	Yes ²
		SBLT	220	48	53	No	No	46	54	No	No
		SBR	25	43	52	Yes ²	Yes ²	44	51	Yes ²	Yes ²
5	Red Hill Road/Montezuma Road - SR-49 - SR-120	WBLT	180	0	4	No	No	0	12	No	No
		NBL	215	18	18	No	No	21	14	No	No
		NBR	50	22	17	No	No	21	15	No	No

Source: Appendix E

Notes: XBL = [DirectionBound]left; XBR = [DirectionBound]right; XBT = [DirectionBound]through; XBLTR = [DirectionBound]left-through-right; XBLT = [DirectionBound]left-through

¹ Stacking distance would be exceeded if the required stacking distance is greater than the stacking distance provided.

² Queue extends past available pocket length for movement (measured as a 25-foot defacto right turn lane) but only extends approximately one vehicle length into the through (or left) turning lane.

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8 Vehicle Miles Traveled Analysis

On September 27, 2013, Senate Bill (SB) 743 was signed into law, which creates a process to change the way that transportation impacts are analyzed under California Environmental Quality Act (CEQA). SB 743 required the Governor's Office of Planning and Research (OPR) to amend the CEQA Guidelines to provide an alternative to LOS for evaluating transportation impacts. Under these transportation guidelines, LOS, or vehicle delay, is no longer considered an environmental impact under CEQA. OPR recommended VMT as the most appropriate measure of project transportation impacts for land use projects and land use plans. The updates to the CEQA Guidelines required under SB 743 were approved on December 28, 2018.

The CEQA Guidelines state that "generally, vehicle miles traveled (VMT) is the most appropriate measure of transportation impacts" and define VMT as "the amount and distance of automobile travel attributable to a project." "Automobile" refers to on-road passenger vehicles, specifically cars and light trucks. Other relevant considerations may include the effects of a project on transit and non-motorized travel.

The OPR *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018) provides technical assistance and recommendations for the analysis of VMT. The methodology recommendations for the VMT analysis include a discussion on vehicle types. An excerpt from the OPR Technical Advisory regarding vehicle types is below:

“Vehicle Types. Proposed 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). For an apples-to-apples comparison, vehicle types considered should be consistent across project assessment, significance thresholds, and mitigation.”

Per Section 21099 of the Public Resource Code, the selection of the VMT criteria for determining the significance of transportation impacts was intended to promote reductions of greenhouse gas emissions (GHG); to develop multimodal transportation networks; and to diversify land uses. As mentioned in OPR's Technical Advisory, there are various legislative mandates and state policies that establish quantitative GHG emission reduction targets. Pursuant to Senate Bill 375, the California Air Resources Board GHG emissions reduction targets for metropolitan planning organizations (MPOs) call for reductions in GHG emissions only from cars and light trucks. As such VMT impacts are analyzed based on the number of employee trips within the specified boundary area, and not logging/haul truck trips.⁵

8.1 Methodology

The County of Tuolumne adopted VMT thresholds and guidance per the Tuolumne County VMT Thresholds Resolution and Staff Report on August 4, 2020 (County of Tuolumne 2020). Per the Resolution, Tuolumne County

⁵ Impacts related to logging/haul truck trips are accounted for in the Draft Environmental Impact Report (DEIR) Chapter 3.7 – Greenhouse Gas Emissions.

provides the following screening guidance to determine if a project should be expected to cause a less-than-significant impact:

- **Residential, Office, or Industrial Employment Project Located within a Low VMT Area:** Low-VMT areas defined by the TCTC VMT maps.
- **Small Project:** Less than 110 trips per day and consistent the General Plan.
- **Local Serving Retail:** Local-serving and 50,000 square feet or less.
- **Local Serving Public Facility:** Public K-12 schools, local parks, libraries, post offices, police stations, utility buildings, etc.
- **Affordable Housing:** 100% affordable housing located in identified communities.
- **Mixed-Use Project:** Each project land use type should be considered separately and compared against the appropriate screening criteria.
- **Redevelopment Project:** Projects that would generate less total VMT than the existing land use they are replacing.

If a project does not meet the above screening criteria, consistent with the County and OPR guidelines, along with CEQA Guidelines Section 15064.3(b), the following specific VMT metrics are recommended to complete a VMT impact assessment:

- **Residential:** A project's VMT is less than or equal to the subarea average VMT per capita under baseline conditions, and the project is consistent with the County/City General Plan and the RTP.
- **Office/Industrial:** A project's VMT is less than or equal to the subarea average VMT per employee under baseline conditions, and the project is consistent with the County/City General Plan and the RTP.
- **Retail/Non-Office Commercial:** No net increase in total regional VMT.
- **Hotel/Campground:** Consistent with General Plan and less than or equal to subarea baseline average VMT per room/site.
- **Mixed-Use:** Analyze each land sue individually per the relevant thresholds.
- **Redevelopment:** If the redevelopment of an existing site leads to a net overall decrease, or no change in VMT, the project impact would be less than significant. If the redevelopment of an existing site leads to a net overall increase in VMT, the project would be evaluated based on the relevant thresholds as if it were a new project.

As noted above, the project primarily functions as an employment project for the purposes of VMT. As such, HBW vehicular trips were selected for evaluation to estimate trips associated with work VMT and estimate an average HBW VMT per employee within the Lake Don Pedro Subarea (County of Tuolumne 2020). Within this subarea, the County of Tuolumne recommends 100.4 VMT per employee as a threshold for VMT impacts.

The project would be considered to have a significant impact if the project VMT per employee is greater than 16.19 per the SJCOG RTDM, and 12.27 per the CSTDM. Table 11 summarizes VMT per-employee thresholds from both models.

Table 11. VMT Threshold Summary

	Tuolumne County RTDM ¹
	VMT per Employee
Subarea Average (Tuolumne County)	100.4

Source: County of Tuolumne 2020

Notes:

VMT = vehicle miles traveled; SJCOG = San Joaquin Council of Governments; RTDM = Regional Travel Demand Model; CSDTM = California State Transportation Demand Model.

¹ Attachment A (Baseline Average VMT for Subareas) of the Tuolumne County SB 743 VMT Thresholds Study (County of Tuolumne 2020)

8.2 VMT Analysis

The following screening criteria were analyzed per the August 4, 2020, Tuolumne County VMT Thresholds Resolution and Staff Report (County of Tuolumne 2020). Any one of the following criteria would need to be satisfied in order to screen-out of significant VMT impacts:

- **Residential, Office, or Industrial Employment Project Located within a Low VMT Area Screening:** Development in a low VMT generating area as defined by the TCTC VMT maps, and that is consistent with consistent with the County General Plan and the RTP.

The baseline average office/industrial VMT per employee values within the Lake Don Pedro Subarea were reviewed per the County VMT Resolution to determine whether the proposed project would be in a low VMT-generating area. A map of the low-VMT areas, generated by comparing locations within each subarea to the overall County average VMT per employee, are provided in Attachment B of the County VMT Resolution. A summary of the Lake Don Pedro Subarea compared to the County’s VMT per employee average is provided in Table 12 below. Consistent with the County’s Office/Industrial VMT per Employee Subareas low-VMT Screening Map, the project site would not be located in a low VMT generating area; therefore, the project cannot be screened out from further VMT analysis using the low VMT area screening criterion.

Table 12. Summary of Project Area VMT

Base Year (2023)	VMT ¹
VMT Per Employee	
Subarea Average (Lake Don Pedro Subarea)	100.4
County Average	53.3
% Difference (Project Subarea – County)	+88.5%
Threshold	53.3

Source: County of Tuolumne 2020

Notes: VMT = vehicle miles traveled

¹ Attachment A (Baseline Average VMT for Subareas) of the Tuolumne County SB 743 VMT Thresholds Study (County of Tuolumne 2020) (Attachment B)

- **Small Project (Less than 110 daily trips and consistent with the General Plan):** The proposed project would employ 51 workers per day at the Tuolumne Site Facility, generating approximately 102 daily trips.

Therefore, the project would meet the criteria for projects generating less than 110 daily trips and can be screened-out from further VMT analysis under this criterion.

- **Local serving retail less than 50,000 SF:** The project is not a retail land use; therefore, it cannot be screened-out from further VMT analysis under this criterion.
- **Local Serving Public Facility:** Projects which serve the local community (e.g., public K-12 schools, local parks, libraries, post offices, police stations, utility buildings, etc.) and have the potential to reduce VMT should not be required to complete a VMT assessment. The project would not be categorized as a local serving land use due to its nature as an pellet processing facility and cannot be screened-out from further VMT analysis under this criterion.
- **Affordable Housing (100% of units):** The proposed project does not include affordable housing units. Therefore, the project cannot be screened-out from further VMT analysis under this criterion.
- **Mixed-Use Project:** The proposed project would not be considered mixed-use. Therefore, the project cannot be screened-out from further VMT analysis under this criterion.
- **Redevelopment Project:** The proposed project would not be considered a redevelopment project. Therefore, the project cannot be screened-out from further VMT analysis under this criterion.

As this project meets the Small Project screening criteria, and the project is consistent with the General Plan land use designation of HI, the Tuolumne Site Facility would have a less than significant impact to VMT under CEQA and no further VMT analysis is required.

9 Summary

Based on the results of the LOS, site access, and VMT analysis presented in this TIS, the following summarizes the key findings of the analysis:

- Operation of the Tuolumne Facility would generate approximately 340 daily trips, 53 AM peak hour trips and 28 PM peak hour trips. After trip generation estimates were adjusted utilizing PCE factors, the project would generate the equivalent of approximately 816 daily trips, 83 AM peak hour trips, and 58 PM peak hour trips.
- The five study area intersections currently and are forecast to operate at LOS D or better under all analysis scenarios, which meets the County's traffic impact thresholds (Table 3 and Table 9).
- All study area roadway segments and representative haul routes would be forecast to operate at LOS D or better under all analysis scenarios, which meets the County's traffic impact thresholds (Tables 4-5 and Tables 7-8), with exception of the US-50 haul route, which is forecast to operate at LOS E under Opening Year (2025) with and without total daily project haul trucks. However, US-50 is located outside of Tuolumne County's jurisdiction.
- The proposed project meets the Small Project screening criteria and is consistent with the County's M-2 land use zoning. Therefore, the Tuolumne Site Facility would have a less than significant impact to VMT under CEQA.

10 References

- California Department of Transportation (Caltrans). 2020. Caltrans Transportation Impact Study Guide. May.
- Caltrans 2002. Guide for the Preparation of Traffic Impact Studies.
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- Caltrans (California Department of Transportation). 2002. Guide for the Preparation of Traffic Impact Studies. December 2002.
- Caltrans. 2020a. Transportation Impact Study Guide. Vehicles Miles Traveled-Focused. May 20, 2020.
- Caltrans. 2020b. Traffic Safety Bulletin 20-02-R1: Interim Local Development and Intergovernmental Review Safety Review Practitioners Guidance. December 18, 2020.
- County of Tuolumne. 2020. *Appendix C3 Tuolumne County VMT Thresholds Resolution and Staff Report, with Final (November 4, 2020) SB 743 VMT Thresholds Memo and Final (November 4, 2020) SB 743 VMT Study Phase 2 Memo*. August 4, 2020.
- OPR (California Governor's Office of Planning and Research). 2018. Technical Advisory on Evaluating Transportation Impacts in CEQA. December 2018. Accessed February 2021. http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf.
- TCTC (Tuolumne County Transportation Council). 2017. *2016 Final Regional Transportation Plan (RTP)*. Accessed November 15, 2023. https://docs.wixstatic.com/ugd/fe950e_c35135627b714de69e18b76eb4807156.pdf
- TCTC. 2020. *2020 Tuolumne County Active Transportation Plan (ATP)*. Accessed November 9, 2023. <https://www.tuolumnecountytransportationcouncil.org/single-post/2019/04/16/active-transportation-plan>
- Transportation Research Board. 2016. *Highway Capacity Manual, Sixth Edition: A Guide for Multimodal Mobility Analysis*.

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Appendix A

Census Data and Raw Traffic Counts

Home Destination Report - Where Workers Live Who are Employed in the Selection Area - by Places (Cities, CDPs, etc.)

Total All Jobs

2020	
Count	Share
Total All Jobs	127 100.0%

Jobs Counts by Places (Cities, CDPs, etc.) Where Workers Live - All Jobs

2020			
Count	Share		
Jamestown CDP, CA	7 5.5%	16%	E
Oakdale city, CA	6 4.7%	14%	W
Fresno city, CA	5 3.9%	12%	S
Merced city, CA	5 3.9%	12%	S
Atwater city, CA	4 3.1%	9%	S
Sonora city, CA	4 3.1%	9%	E
East Sonora CDP, CA	3 2.4%	7%	E
Los Banos city, CA	3 2.4%	7%	S
Mono Vista CDP, CA	3 2.4%	7%	E
Phoenix Lake CDP, CA	3 2.4%	7%	E
All Other Locations	84 66.1%	43 100.0% (Total Top 10)	

EMPLOYEE_DISTRIBUTION		
East	47%	45%
West	14%	15%
South	40%	40%
	100%	100%

Distance/Direction Report - Work Census Block to Home Census Block

Job Counts in Home Blocks by Distance Only

2020	
Count	Share
Total All Jobs	127 100.0%
Less than 10 miles	19 15.0%
10 to 24 miles	38 29.9%
25 to 50 miles	35 27.6%
Greater than 50 miles	35 27.6%

Job Counts in Home Blocks to the North of Work Blocks by Distance

2020	
Count	Share
Total All Jobs	8 100.0%
Less than 10 miles	3 37.5%
10 to 24 miles	0 0.0%
25 to 50 miles	2 25.0%
Greater than 50 miles	3 37.5%

Job Counts in Home Blocks to the Northeast of Work Blocks by Distance

2020	
Count	Share
Total All Jobs	35 100.0%
Less than 10 miles	13 37.1%
10 to 24 miles	22 62.9%
25 to 50 miles	0 0.0%
Greater than 50 miles	0 0.0%

Job Counts in Home Blocks to the East of Work Blocks by Distance

2020	
Count	Share
Total All Jobs	6 100.0%
Less than 10 miles	1 16.7%
10 to 24 miles	2 33.3%
25 to 50 miles	0 0.0%
Greater than 50 miles	3 50.0%

Job Counts in Home Blocks to the Southeast of Work Blocks by Distance

2020	
Count	Share
Total All Jobs	17 100.0%
Less than 10 miles	0 0.0%
10 to 24 miles	3 17.6%
25 to 50 miles	2 11.8%
Greater than 50 miles	12 70.6%

Job Counts in Home Blocks to the South of Work Blocks by Distance

2020	
Count	Share
Total All Jobs	22 100.0%
Less than 10 miles	0 0.0%
10 to 24 miles	0 0.0%
25 to 50 miles	16 72.7%
Greater than 50 miles	6 27.3%

Job Counts in Home Blocks to the Southwest of Work Blocks by Distance

2020	
Count	Share
Total All Jobs	11 100.0%
Less than 10 miles	0 0.0%
10 to 24 miles	3 27.3%
25 to 50 miles	7 63.6%
Greater than 50 miles	1 9.1%

Job Counts in Home Blocks to the West of Work Blocks by Distance

2020	
Count	Share
Total All Jobs	15 100.0%
Less than 10 miles	1 6.7%
10 to 24 miles	7 46.7%
25 to 50 miles	7 46.7%
Greater than 50 miles	0 0.0%

Job Counts in Home Blocks to the Northwest of Work Blocks by Distance

2020	
Count	Share
Total All Jobs	13 100.0%
Less than 10 miles	1 7.7%
10 to 24 miles	1 7.7%
25 to 50 miles	1 7.7%
Greater than 50 miles	10 76.9%

CLASSIFICATION
SR 120/SR 108 W/O La Grange Rd/CR J59

Day: Tuesday
Date: 08/29/2023

City: Jamestown
Project #: CA23_090100_001

Table with columns for Time, EASTBOUND (lanes #1-#13), Total, WESTBOUND (lanes #1-#13), Total, and TOTALS (lanes #1-#13), Total. Includes a vertical label '15-MINUTE BREAKDOWN' on the left side.

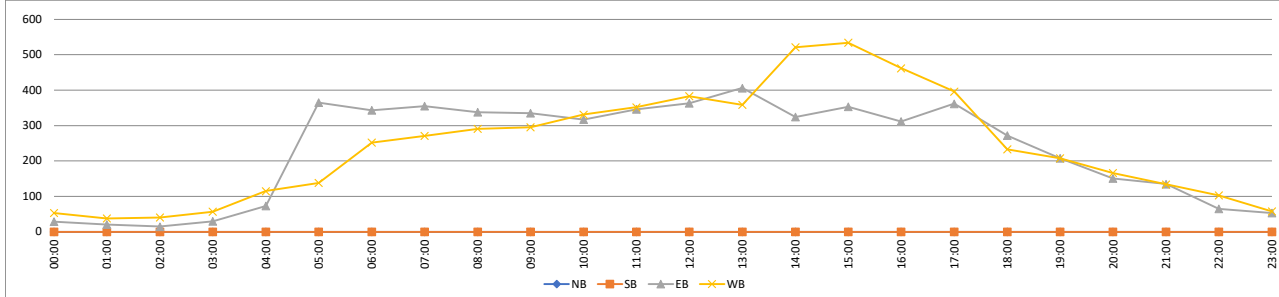
VOLUME

SR 120/SR 108 W/O La Grange Rd/CR J59

Day: Tuesday
Date: 08/29/2023

City: Jamestown
Project #: CA23_090100_001

DAILY TOTALS						NB	SB	EB	WB	Total	DAILY TOTALS							
						0	0	5,571	5,791	11,362								
15-Minutes Interval											Hourly Intervals							
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	
0:00			5	12	17	12:00			75	105	180	00:00	01:00			29	53	82
0:15			10	15	25	12:15			87	100	187	01:00	02:00			21	38	59
0:30			4	12	16	12:30			88	99	187	02:00	03:00			15	41	56
0:45			10	14	24	12:45			113	79	192	03:00	04:00			30	57	87
1:00			8	9	17	13:00			80	75	155	04:00	05:00			73	115	188
1:15			1	10	11	13:15			115	99	214	05:00	06:00			365	138	503
1:30			6	11	17	13:30			125	66	191	06:00	07:00			343	252	595
1:45			6	8	14	13:45			86	119	205	07:00	08:00			355	271	626
2:00			3	9	12	14:00			96	111	207	08:00	09:00			338	291	629
2:15			6	11	17	14:15			73	114	187	09:00	10:00			335	295	630
2:30			4	11	15	14:30			70	140	210	10:00	11:00			317	331	648
2:45			2	10	12	14:45			85	156	241	11:00	12:00			346	352	698
3:00			6	10	16	15:00			117	132	249	12:00	13:00			363	383	746
3:15			5	19	24	15:15			90	157	247	13:00	14:00			406	359	765
3:30			7	14	21	15:30			76	122	198	14:00	15:00			324	521	845
3:45			12	14	26	15:45			70	123	193	15:00	16:00			353	534	887
4:00			8	21	29	16:00			99	109	208	16:00	17:00			312	462	774
4:15			13	23	36	16:15			70	118	188	17:00	18:00			362	396	758
4:30			21	24	45	16:30			54	116	170	18:00	19:00			272	233	505
4:45			31	47	78	16:45			89	119	208	19:00	20:00			208	208	416
5:00			56	30	86	17:00			87	87	174	20:00	21:00			151	166	317
5:15			88	30	118	17:15			99	117	216	21:00	22:00			135	134	269
5:30			126	35	161	17:30			81	95	176	22:00	23:00			65	103	168
5:45			95	43	138	17:45			95	97	192	23:00	00:00			53	58	111
6:00			65	48	113	18:00			75	71	146	STATISTICS						
6:15			80	71	151	18:15			85	62	147							
6:30			89	61	150	18:30			62	48	110	Peak Period	00:00	to	12:00			
6:45			109	72	181	18:45			50	52	102	Volume				2567	2234	4801
7:00			83	67	150	19:00			68	58	126	Peak Hour				5:15	10:45	10:45
7:15			79	79	158	19:15			47	56	103	Peak Volume				374	366	709
7:30			96	47	143	19:30			56	51	107	Peak Hour Factor				0.742	0.855	0.886
7:45			97	78	175	19:45			37	43	80	Peak Period	12:00	to	00:00			
8:00			84	74	158	20:00			43	48	91	Volume				3004	3557	6561
8:15			81	74	155	20:15			40	41	81	Peak Hour				12:45	14:30	14:30
8:30			82	70	152	20:30			40	46	86	Peak Volume				433	585	947
8:45			91	73	164	20:45			28	31	59	Peak Hour Factor				0.866	0.932	0.951
9:00			75	61	136	21:00			36	33	69	Peak Period	07:00	to	09:00			
9:15			88	76	164	21:15			46	33	79	Volume				693	562	1255
9:30			84	81	165	21:30			28	24	52	Peak Hour				7:30	7:45	7:45
9:45			88	77	165	21:45			25	44	69	Peak Volume				358	296	640
10:00			85	76	161	22:00			12	33	45	Peak Hour Factor				0.923	0.949	0.914
10:15			93	100	193	22:15			17	31	48	Peak Period	16:00	to	18:00			
10:30			64	69	133	22:30			21	25	46	Volume				674	858	1532
10:45			75	86	161	22:45			15	14	29	Peak Hour				17:00	16:00	16:00
11:00			75	80	155	23:00			16	9	25	Peak Volume				362	462	774
11:15			100	93	193	23:15			18	19	37	Peak Hour Factor				0.914	0.971	0.930
11:30			93	107	200	23:30			10	18	28							
11:45			78	72	150	23:45			9	12	21							
TOTALS	0	0	2567	2234	4801	TOTALS	0	0	3004	3557	6561							
SPLIT %	0%	0%	53%	47%	42%	SPLIT %	0%	0%	46%	54%	58%							



CLASSIFICATION
La Grange Rd/CR J59 S/O SR 120/SR 108

Day: Tuesday
Date: 08/29/2023

City: Jamestown
Project #: CA23_090100_002

HOURLY BREAKDOWN table with columns for Time, NORTHBOUND (1-13), Total, SOUTHBOUND (1-13), Total, and TOTALS (1-13), Total. Rows include hourly data from 0:00 to 23:00 and a Totals row.

CLASSIFICATION DEFINITIONS section showing FHWA vehicle icons and descriptions for categories #1 through #13, including Motorcycles, Passenger Cars, Buses, and various Single and Multi-Trailers.

STATISTICS table showing volume and percentage data for various time intervals (e.g., 00:00-12:00, 12:00-24:00, 07:00-09:00, 16:00-18:00) across different vehicle categories.

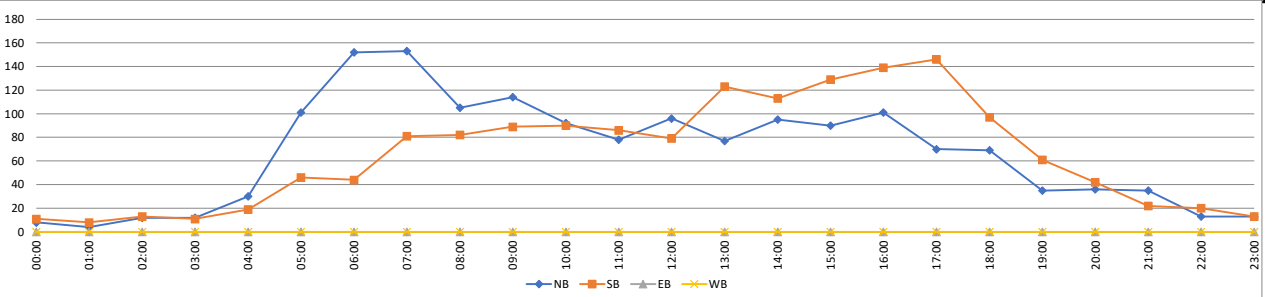
VOLUME

La Grange Rd/CR J59 S/O SR 120/SR 108

Day: Tuesday
Date: 08/29/2023

City: Jamestown
Project #: CA23_090100_002

DAILY TOTALS						NB	SB	EB	WB	Total	DAILY TOTALS						
						1,591	1,564	0	0	3,155							
15-Minutes Interval												Hourly Intervals					
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL
0:00	1	5			6	12:00	16	26			42	00:00	01:00	8	11		19
0:15	1	1			2	12:15	26	24			50	01:00	02:00	4	8		12
0:30	3	3			6	12:30	34	13			47	02:00	03:00	12	13		25
0:45	3	2			5	12:45	20	16			36	03:00	04:00	12	11		23
1:00	0	2			2	13:00	13	20			33	04:00	05:00	30	19		49
1:15	3	1			4	13:15	20	28			48	05:00	06:00	101	46		147
1:30	1	2			3	13:30	27	31			58	06:00	07:00	152	44		196
1:45	0	3			3	13:45	17	44			61	07:00	08:00	153	81		234
2:00	1	0			1	14:00	34	37			71	08:00	09:00	105	82		187
2:15	4	8			12	14:15	18	21			39	09:00	10:00	114	89		203
2:30	6	3			9	14:30	27	32			59	10:00	11:00	92	90		182
2:45	1	2			3	14:45	16	23			39	11:00	12:00	78	86		164
3:00	0	2			2	15:00	30	34			64	12:00	13:00	96	79		175
3:15	4	0			4	15:15	22	33			55	13:00	14:00	77	123		200
3:30	2	4			6	15:30	17	30			47	14:00	15:00	95	113		208
3:45	6	5			11	15:45	21	32			53	15:00	16:00	90	129		219
4:00	6	5			11	16:00	25	25			50	16:00	17:00	101	139		240
4:15	6	8			14	16:15	30	44			74	17:00	18:00	70	146		216
4:30	5	3			8	16:30	19	41			60	18:00	19:00	69	97		166
4:45	13	3			16	16:45	27	29			56	19:00	20:00	35	61		96
5:00	16	9			25	17:00	21	32			53	20:00	21:00	36	42		78
5:15	26	17			43	17:15	18	41			59	21:00	22:00	35	22		57
5:30	27	7			34	17:30	16	41			57	22:00	23:00	13	20		33
5:45	32	13			45	17:45	15	32			47	23:00	00:00	13	13		26
6:00	32	14			46	18:00	20	27			47	STATISTICS					
6:15	26	12			38	18:15	19	32			51	Peak Period	00:00	to	12:00	TOTAL	
6:30	46	7			53	18:30	18	16			34	Volume	861	580		1441	
6:45	48	11			59	18:45	12	22			34	Peak Hour	6:30	9:30		6:45	
7:00	36	21			57	19:00	12	15			27	Peak Volume	184	100		248	
7:15	54	18			72	19:15	5	10			15	Peak Hour Factor	0.852	0.862		0.861	
7:30	39	21			60	19:30	14	16			30	Peak Period	12:00	to	00:00		
7:45	24	21			45	19:45	4	20			24	Volume	730	984		1714	
8:00	31	18			49	20:00	10	6			16	Peak Hour	16:00	16:15		16:15	
8:15	24	31			55	20:15	8	15			23	Peak Volume	101	146		243	
8:30	23	17			40	20:30	10	10			20	Peak Hour Factor	0.842	0.830		0.821	
8:45	27	16			43	20:45	8	11			19	Peak Period	07:00	to	09:00		
9:00	28	20			48	21:00	10	5			15	Volume	258	163		421	
9:15	36	16			52	21:15	9	3			12	Peak Hour	7:00	7:30		7:00	
9:30	14	29			43	21:30	8	7			15	Peak Volume	153	91		234	
9:45	36	24			60	21:45	8	7			15	Peak Hour Factor	0.708	0.734		0.813	
10:00	20	19			39	22:00	4	7			11	Peak Period	16:00	to	18:00		
10:15	30	28			58	22:15	2	4			6	Volume	171	285		456	
10:30	26	17			43	22:30	3	4			7	Peak Hour	16:00	16:15		16:15	
10:45	16	26			42	22:45	4	5			9	Peak Volume	101	146		243	
11:00	19	21			40	23:00	3	5			8	Peak Hour Factor	0.842	0.830		0.821	
11:15	22	26			48	23:15	4	4			8						
11:30	17	21			38	23:30	3	3			6						
11:45	20	18			38	23:45	3	1			4						
TOTALS	861	580	0	0	1441	TOTALS	730	984	0	0	1714						
SPLIT %	60%	40%	0%	0%	46%	SPLIT %	43%	57%	0%	0%	54%						



National Data & Surveying Services Intersection Turning Movement Count

Location: SR 120/SR 108 & La Grange Rd/CR J59
City: Jamestown
Control: 1-Way Stop(WB)

Project ID: 23-090099-001
Date: 8/29/2023

Data - Cars

NS/EW Streets:	SR 120/SR 108				SR 120/SR 108				La Grange Rd/CR J59				La Grange Rd/CR J59				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	1	1	0	0	0	0	0	0	0	1	1	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	66	0	0	19	55	0	0	0	0	0	0	4	0	29	0	173
7:15 AM	0	63	3	0	10	69	0	0	0	0	0	0	7	0	41	0	193
7:30 AM	0	77	1	0	11	35	0	0	0	0	0	0	5	0	33	0	162
7:45 AM	0	82	2	0	14	67	0	0	0	0	0	0	2	0	19	0	186
8:00 AM	0	77	2	0	14	67	0	0	0	0	0	0	3	0	26	0	189
8:15 AM	0	64	3	0	21	66	0	0	0	0	0	0	3	0	14	0	171
8:30 AM	0	73	2	0	12	64	0	0	0	0	0	0	2	0	16	0	169
8:45 AM	0	77	1	0	12	64	0	0	0	0	0	0	3	0	20	0	177
TOTAL VOLUMES :	0	579	14	0	113	487	0	0	0	0	0	0	29	0	198	0	1420
APPROACH %'s :	0.00%	97.64%	2.36%	0.00%	18.83%	81.17%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12.78%	0.00%	87.22%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	299	8	0	49	238	0	0	0	0	0	0	17	0	119	0	730
PEAK HR FACTOR :	0.000	0.912	0.667	0.000	0.875	0.862	0.000	0.000	0.000	0.000	0.000	0.000	0.607	0.000	0.726	0.000	0.946
	0.914				0.886								0.708				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	1	1	0	0	0	0	0	0	0	1	1	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	89	4	0	18	95	0	0	0	0	0	0	4	0	18	0	228
4:15 PM	0	60	2	0	37	112	0	0	0	0	0	0	6	0	23	0	240
4:30 PM	0	47	8	0	31	105	0	0	0	0	0	0	4	0	14	0	209
4:45 PM	0	77	6	0	22	115	0	0	0	0	0	0	2	0	22	0	244
5:00 PM	0	79	3	0	25	76	0	0	0	0	0	0	0	0	19	0	202
5:15 PM	0	86	6	0	34	111	0	0	0	0	0	0	4	0	13	0	254
5:30 PM	0	71	5	0	29	95	0	0	0	0	0	0	1	0	14	0	215
5:45 PM	0	80	12	0	18	95	0	0	0	0	0	0	1	0	14	0	220
TOTAL VOLUMES :	0	589	46	0	214	804	0	0	0	0	0	0	22	0	137	0	1812
APPROACH %'s :	0.00%	92.76%	7.24%	0.00%	21.02%	78.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	13.84%	0.00%	86.16%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	273	20	0	108	427	0	0	0	0	0	0	16	0	77	0	921
PEAK HR FACTOR :	0.000	0.767	0.625	0.000	0.730	0.928	0.000	0.000	0.000	0.000	0.000	0.000	0.667	0.000	0.837	0.000	0.944
	0.788				0.898								0.802				

National Data & Surveying Services Intersection Turning Movement Count

Location: SR 120/SR 108 & La Grange Rd/CR J59
City: Jamestown
Control: 1-Way Stop(WB)

Project ID: 23-090099-001
Date: 8/29/2023

Data - 2axle

NS/EW Streets:	SR 120/SR 108				SR 120/SR 108				La Grange Rd/CR J59				La Grange Rd/CR J59				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	1	1	0	1	1	0	0	0	0	0	0	0	1	1	0	10
7:15 AM	0	3	0	0	0	1	0	0	0	0	0	0	0	0	2	0	6
7:30 AM	0	5	0	0	1	2	0	0	0	0	0	0	0	0	0	0	8
7:45 AM	0	3	0	0	0	1	0	0	0	0	0	0	0	0	1	0	5
8:00 AM	0	4	0	0	1	1	0	0	0	0	0	0	0	0	0	0	6
8:15 AM	0	3	0	0	0	1	0	0	0	0	0	0	0	0	1	0	5
8:30 AM	0	6	0	0	0	1	0	0	0	0	0	0	0	0	3	0	10
8:45 AM	0	8	0	0	0	3	0	0	0	0	0	0	1	0	1	0	13
TOTAL VOLUMES :	0	37	1	0	2	13	0	0	0	0	0	0	1	0	9	0	63
APPROACH %'s :	0.00%	97.37%	2.63%	0.00%	13.33%	86.67%	0.00%	0.00%					10.00%	0.00%	90.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	15	0	0	2	5	0	0	0	0	0	0	0	0	3	0	25
PEAK HR FACTOR :	0.000	0.750	0.000	0.000	0.500	0.625	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.781
				0.750				0.583								0.375	
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	2	1	0	0	3	0	0	0	0	0	0	0	0	2	0	8
4:15 PM	0	4	1	0	2	3	0	0	0	0	0	0	1	0	0	0	11
4:30 PM	0	0	1	0	0	5	0	0	0	0	0	0	0	0	1	0	7
4:45 PM	0	5	0	0	0	1	0	0	0	0	0	0	0	0	2	0	8
5:00 PM	0	3	0	0	2	4	0	0	0	0	0	0	0	0	1	0	10
5:15 PM	0	3	0	0	2	1	0	0	0	0	0	0	0	0	0	0	6
5:30 PM	0	2	2	0	1	4	0	0	0	0	0	0	0	0	1	0	10
5:45 PM	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	3
TOTAL VOLUMES :	0	20	5	0	9	21	0	0	0	0	0	0	1	0	7	0	63
APPROACH %'s :	0.00%	80.00%	20.00%	0.00%	30.00%	70.00%	0.00%	0.00%					12.50%	0.00%	87.50%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	11	3	0	2	12	0	0	0	0	0	0	1	0	5	0	34
PEAK HR FACTOR :	0.000	0.550	0.750	0.000	0.250	0.600	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.625	0.000	0.773
				0.700				0.700								0.750	

National Data & Surveying Services Intersection Turning Movement Count

Location: SR 120/SR 108 & La Grange Rd/CR J59
City: Jamestown
Control: 1-Way Stop(WB)

Project ID: 23-090099-001
Date: 8/29/2023

Data - 4axle

NS/EW Streets:	SR 120/SR 108				SR 120/SR 108				La Grange Rd/CR J59				La Grange Rd/CR J59				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	1	1	0	1	1	0	0	0	0	0	0	0	1	1	0	15
7:15 AM	0	10	1	0	3	5	0	0	0	0	0	0	0	0	3	0	22
7:30 AM	0	10	0	0	6	10	0	0	0	0	0	0	0	0	1	0	27
7:45 AM	0	9	0	0	5	9	0	0	0	0	0	0	0	0	1	0	24
8:00 AM	0	3	1	0	1	4	0	0	0	0	0	0	1	0	2	0	12
8:15 AM	0	11	1	0	3	8	0	0	0	0	0	0	0	0	4	0	27
8:30 AM	0	3	0	0	2	6	0	0	0	0	0	0	0	0	2	0	13
8:45 AM	0	4	0	0	0	6	0	0	0	0	0	0	0	0	1	0	11
TOTAL VOLUMES :	0	58	3	0	21	52	0	0	0	0	0	0	1	0	16	0	151
APPROACH %'s :	0.00%	95.08%	4.92%	0.00%	28.77%	71.23%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.88%	0.00%	94.12%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	32	2	0	15	28	0	0	0	0	0	0	1	0	7	0	85
PEAK HR FACTOR :	0.000	0.800	0.500	0.000	0.625	0.700	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.583	0.000	0.787
	0.773				0.672								0.667				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	3	1	0	1	6	0	0	0	0	0	0	0	0	1	0	12
4:15 PM	0	2	1	0	1	1	0	0	0	0	0	0	0	0	0	0	5
4:30 PM	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	4
4:45 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	1	0	5
5:15 PM	0	1	0	0	1	1	0	0	0	0	0	0	0	0	1	0	4
5:30 PM	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	4
5:45 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
TOTAL VOLUMES :	0	10	4	0	4	18	0	0	0	0	0	0	0	0	3	0	39
APPROACH %'s :	0.00%	71.43%	28.57%	0.00%	18.18%	81.82%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	7	3	0	2	10	0	0	0	0	0	0	0	0	1	0	23
PEAK HR FACTOR :	0.000	0.583	0.750	0.000	0.500	0.417	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.479
	0.625				0.429								0.250				

National Data & Surveying Services Intersection Turning Movement Count

Location: SR 120/SR 108 & La Grange Rd/CR J59
City: Jamestown
Control: 1-Way Stop(WB)

Project ID: 23-090099-001
Date: 8/29/2023

Data - Bikes

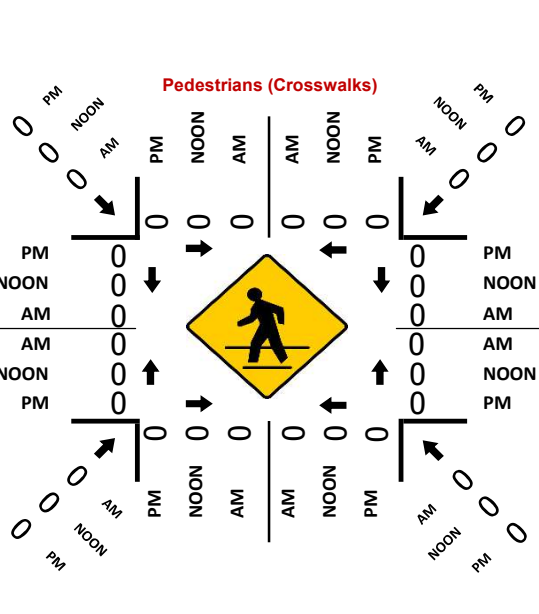
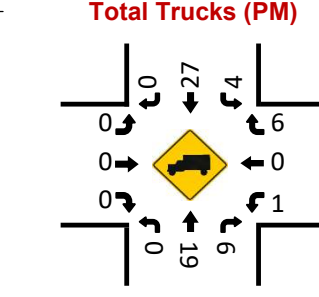
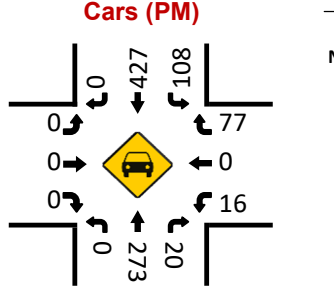
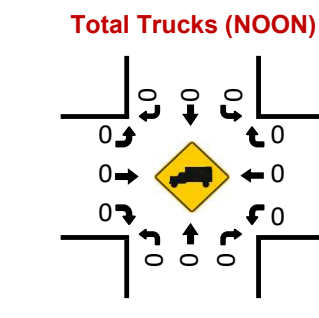
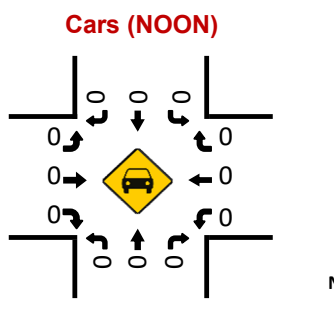
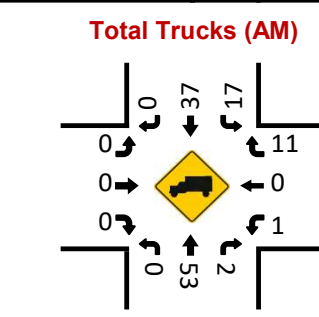
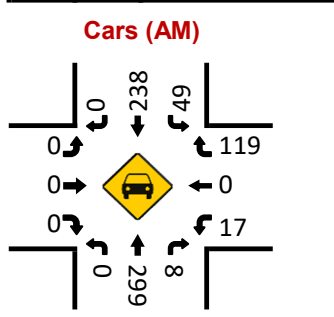
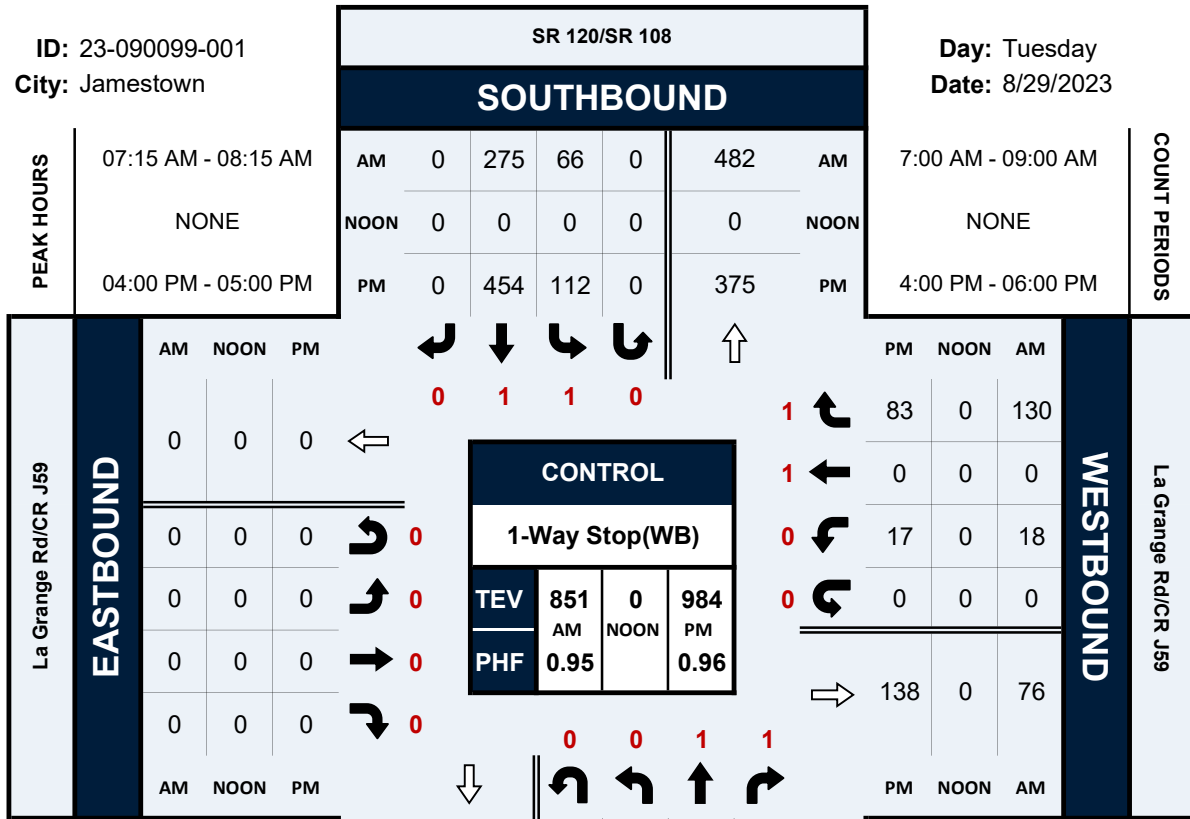
NS/EW Streets:	SR 120/SR 108				SR 120/SR 108				La Grange Rd/CR J59				La Grange Rd/CR J59					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	1	1	0	1	1	0	0	0	0	0	0	0	1	1	0		
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 AM	0	0	0	0	0	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	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PEAK HR :	07:15 AM - 08:15 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	0	
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	1	1	0	1	1	0	0	0	0	0	0	0	1	1	0		
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
	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	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL	
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	

SR 120/SR 108 & La Grange Rd/CR J59

Peak Hour Turning Movement Count

ID: 23-090099-001
City: Jamestown

Day: Tuesday
Date: 8/29/2023



National Data & Surveying Services Intersection Turning Movement Count

Location: Sierra Pacific Industries Dwy & La Grange Rd/CR J59
City: Jamestown
Control: 1-Way Stop(SB)

Project ID: 23-090099-002
Date: 8/29/2023

Data - Total

NS/EW Streets:	Sierra Pacific Industries Dwy				Sierra Pacific Industries Dwy				La Grange Rd/CR J59				La Grange Rd/CR J59				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
	0	0	0	0	1	0	4	0	0	22	0	0	0	37	0	0	64
	7:00 AM	0	0	0	0	0	1	0	0	18	0	0	0	48	0	0	67
	7:15 AM	0	0	0	0	0	0	0	1	19	0	0	0	38	1	0	59
	7:30 AM	0	0	0	0	0	0	0	0	17	0	0	0	23	0	0	40
	7:45 AM	0	0	0	0	0	1	0	1	18	0	0	0	32	0	0	52
	8:00 AM	0	0	0	0	0	1	0	0	26	0	0	0	23	0	0	50
	8:15 AM	0	0	0	0	0	1	0	0	21	0	0	0	22	0	0	44
8:30 AM	0	0	0	0	0	0	0	0	15	0	0	0	28	0	0	43	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	TOTAL	
TOTAL VOLUMES :	0	0	0	0	1	0	8	0	2	156	0	0	0	251	1	0	419
APPROACH %'s :					11.11%	0.00%	88.89%	0.00%	1.27%	98.73%	0.00%	0.00%	0.00%	99.60%	0.40%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	1	0	5	0	1	76	0	0	0	146	1	0	230
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.000	0.313	0.000	0.250	0.864	0.000	0.000	0.000	0.760	0.250	0.000	0.858
							0.300			0.875				0.766			
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
	0	0	0	0	0	0	0	0	1	33	0	0	0	23	0	0	57
	4:00 PM	0	0	0	0	0	0	0	0	43	0	0	0	31	0	0	74
	4:15 PM	0	0	0	0	0	0	0	1	39	0	0	0	19	0	0	59
	4:30 PM	0	0	0	0	0	0	0	0	27	0	0	0	23	0	0	50
	4:45 PM	0	0	0	0	0	1	0	0	31	0	0	0	21	0	0	53
	5:00 PM	0	0	0	0	0	0	0	0	40	0	0	0	17	0	0	57
	5:15 PM	0	0	0	0	0	0	0	0	42	0	0	0	16	0	0	58
5:30 PM	0	0	0	0	0	0	0	0	28	0	0	0	17	0	0	45	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	TOTAL	
TOTAL VOLUMES :	0	0	0	0	0	0	1	0	2	283	0	0	0	167	0	0	453
APPROACH %'s :					0.00%	0.00%	100.00%	0.00%	0.70%	99.30%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	2	142	0	0	0	96	0	0	240
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.826	0.000	0.000	0.000	0.774	0.000	0.000	0.811
										0.837				0.774			

National Data & Surveying Services Intersection Turning Movement Count

Location: Sierra Pacific Industries Dwy & La Grange Rd/CR J59
City: Jamestown
Control: 1-Way Stop(SB)

Project ID: 23-090099-002
Date: 8/29/2023

Data - Cars

NS/EW Streets:	Sierra Pacific Industries Dwy				Sierra Pacific Industries Dwy				La Grange Rd/CR J59				La Grange Rd/CR J59				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	0	0	0	0	1	0	4	0	0	20	0	0	0	32	0	0	57
	7:00 AM	0	0	0	0	0	0	0	0	15	0	0	0	45	0	0	60
	7:15 AM	0	0	0	0	0	0	0	0	12	0	0	0	37	0	0	49
	7:30 AM	0	0	0	0	0	0	0	0	13	0	0	0	20	0	0	33
	7:45 AM	0	0	0	0	0	0	0	0	16	0	0	0	30	0	0	46
	8:00 AM	0	0	0	0	0	0	0	0	22	0	0	0	17	0	0	39
	8:15 AM	0	0	0	0	0	0	0	0	15	0	0	0	17	0	0	32
8:30 AM	0	0	0	0	0	0	0	0	13	0	0	0	24	0	0	37	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	0	0	0	0	1	0	4	0	0	60	0	0	0	134	0	0	199
APPROACH %'s :	0	0	0	0	20.00%	0.00%	80.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.829
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	1	0	4	0	0	60	0	0	0	134	0	0	199
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.750	0.000	0.000	0.000	0.744	0.000	0.000	0.829
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	0	0	0	0	0	0	0	0	0	29	0	0	0	22	0	0	51
	4:00 PM	0	0	0	0	0	0	0	0	39	0	0	0	29	0	0	68
	4:15 PM	0	0	0	0	0	0	0	0	37	0	0	0	18	0	0	55
	4:30 PM	0	0	0	0	0	0	0	0	27	0	0	0	21	0	0	48
	4:45 PM	0	0	0	0	0	0	0	0	29	0	0	0	18	0	0	48
	5:00 PM	0	0	0	0	0	0	0	0	37	0	0	0	16	0	0	53
	5:15 PM	0	0	0	0	0	0	0	0	38	0	0	0	15	0	0	53
5:30 PM	0	0	0	0	0	0	0	0	26	0	0	0	17	0	0	43	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	0	0	0	0	0	0	1	0	0	262	0	0	0	156	0	0	419
APPROACH %'s :	0	0	0	0	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.816
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	132	0	0	0	90	0	0	222
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.846	0.000	0.000	0.000	0.776	0.000	0.000	0.816

National Data & Surveying Services Intersection Turning Movement Count

Location: Sierra Pacific Industries Dwy & La Grange Rd/CR J59
City: Jamestown
Control: 1-Way Stop(SB)

Project ID: 23-090099-002
Date: 8/29/2023

Data - 2axle

NS/EW Streets:	Sierra Pacific Industries Dwy				Sierra Pacific Industries Dwy				La Grange Rd/CR J59				La Grange Rd/CR J59					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
	7:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	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	1	0	0	1
	8:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	4
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	0	0	0	0	0	0	0	0	0	3	0	0	0	9	1	0	13	
									0.00%	100.00%	0.00%	0.00%	0.00%	90.00%	10.00%	0.00%		
PEAK HR :	07:00 AM - 08:00 AM																TOTAL	
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	2	0	0	0	3	1	0	6	
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	0.750	0.250	0.000	0.750	
									0.500				1.000					
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	4:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
	4:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	4
	4:30 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
	5:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	4
	5:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
	5:30 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	0	0	0	0	0	0	0	0	0	14	0	0	0	8	0	0	22	
									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%		
PEAK HR :	04:00 PM - 05:00 PM																TOTAL	
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	6	0	0	0	5	0	0	11	
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.625	0.000	0.000	0.688	
									0.750				0.625					

National Data & Surveying Services Intersection Turning Movement Count

Location: Sierra Pacific Industries Dwy & La Grange Rd/CR J59
City: Jamestown
Control: 1-Way Stop(SB)

Project ID: 23-090099-002
Date: 8/29/2023

Data - 3axle

NS/EW Streets:	Sierra Pacific Industries Dwy				Sierra Pacific Industries Dwy				La Grange Rd/CR J59				La Grange Rd/CR J59					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	
	7:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	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	1	0	0	1	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	0	0	0	0	0	0	2	0	0	1	0	0	0	4	0	0	7	
					0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%		
PEAK HR :	07:00 AM - 08:00 AM																TOTAL	
PEAK HR VOL :	0	0	0	0	0	0	1	0	0	0	0	0	0	3	0	0	4	
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	0.375	0.000	0.000	0.500	
							0.250							0.375				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	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	
	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	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL	
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	

National Data & Surveying Services Intersection Turning Movement Count

Location: Sierra Pacific Industries Dwy & La Grange Rd/CR J59
City: Jamestown
Control: 1-Way Stop(SB)

Project ID: 23-090099-002
Date: 8/29/2023

Data - 4axle

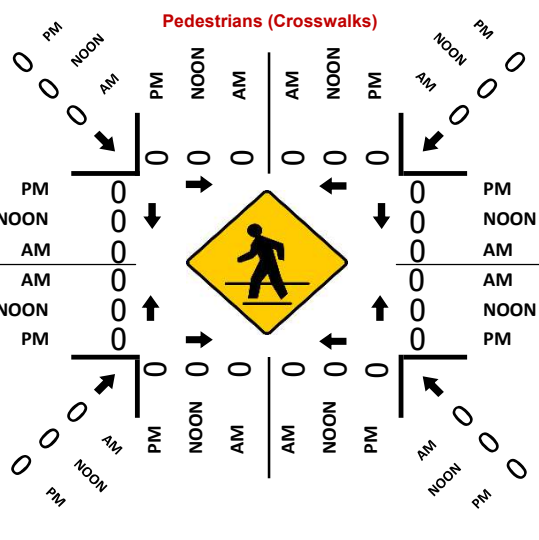
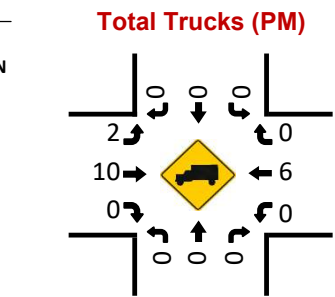
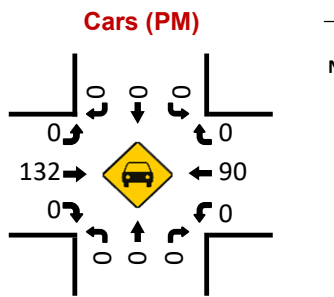
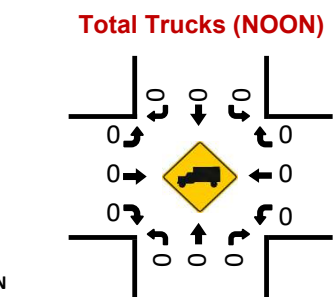
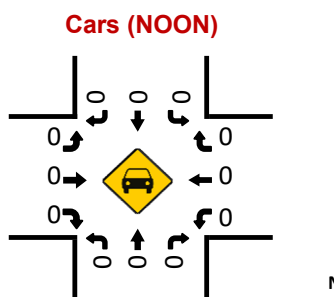
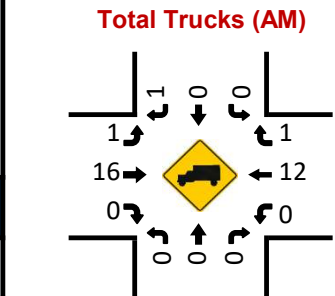
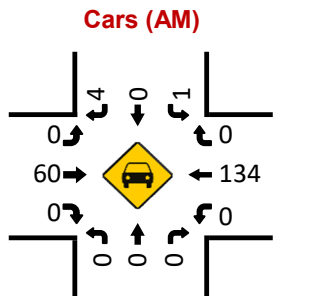
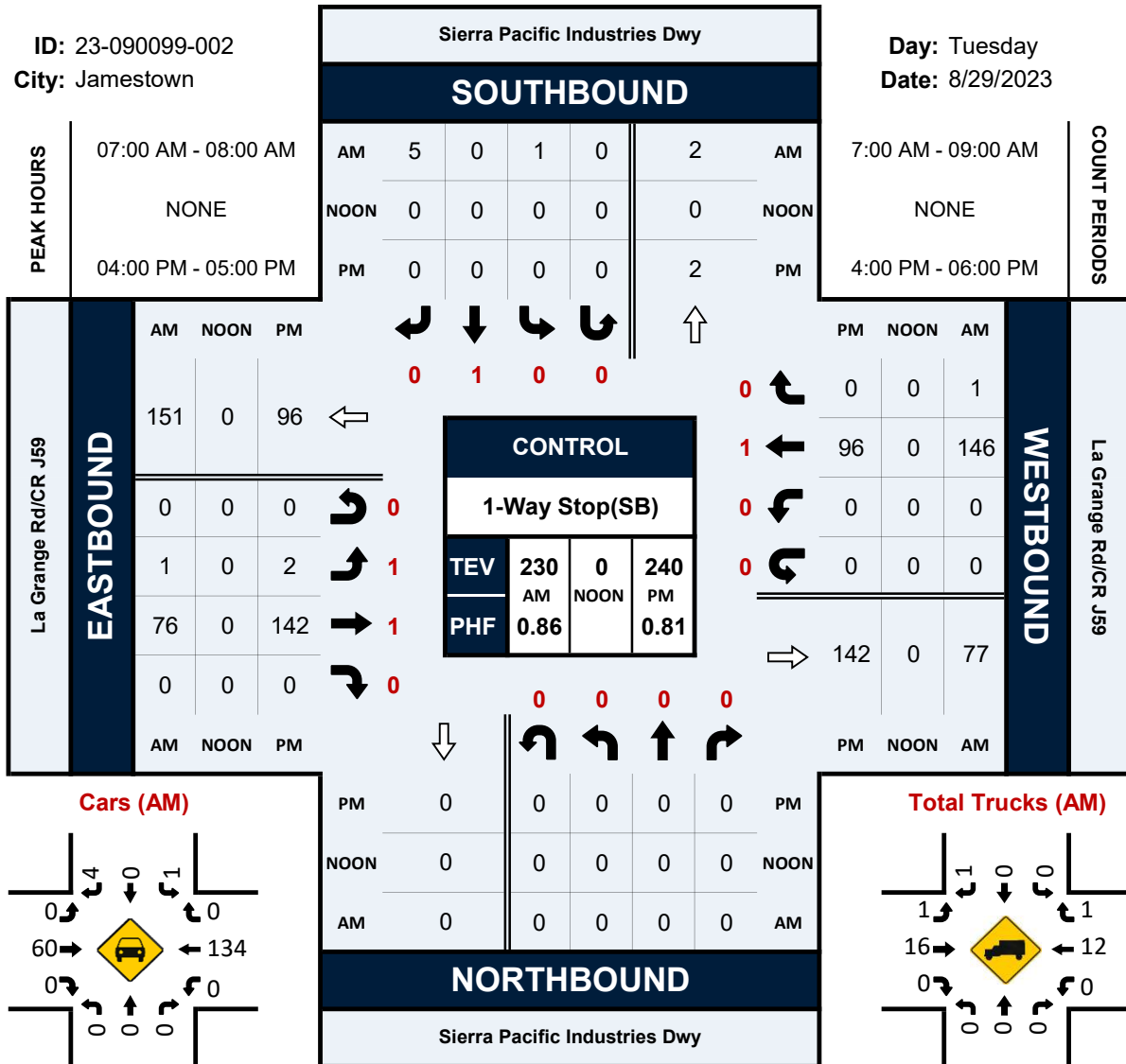
NS/EW Streets:	Sierra Pacific Industries Dwy				Sierra Pacific Industries Dwy				La Grange Rd/CR J59				La Grange Rd/CR J59					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	7:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
	7:15 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0	0	5
	7:30 AM	0	0	0	0	0	0	0	0	1	6	0	0	0	0	0	0	7
	7:45 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0	0	6
	8:00 AM	0	0	0	0	0	0	1	0	1	2	0	0	0	2	0	0	6
	8:15 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	5	0	0	8
	8:30 AM	0	0	0	0	0	0	1	0	0	5	0	0	0	2	0	0	8
8:45 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	0	0	0	0	0	0	2	0	2	26	0	0	0	16	0	0	46	
					0.00%	0.00%	100.00%	0.00%	7.14%	92.86%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%		
PEAK HR :	07:00 AM - 08:00 AM																TOTAL	
PEAK HR VOL :	0	0	0	0	0	0	0	0	1	14	0	0	0	6	0	0	21	
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.583	0.000	0.000	0.000	0.750	0.000	0.000	0.750	
									0.536				0.750					
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	4:00 PM	0	0	0	0	0	0	0	0	1	2	0	0	0	1	0	0	4
	4:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
	4:30 PM	0	0	0	0	0	0	0	0	1	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	1	0	0	1
	5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
	5:30 PM	0	0	0	0	0	0	0	0	0	2	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	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	0	0	0	0	0	0	0	0	2	7	0	0	0	3	0	0	12	
									22.22%				77.78%					
PEAK HR :	04:00 PM - 05:00 PM																TOTAL	
PEAK HR VOL :	0	0	0	0	0	0	0	0	2	4	0	0	0	1	0	0	7	
PEAK HR FACTOR :	0.000	0.000	0.000	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	0.438	
									0.500				0.250					

Sierra Pacific Industries Dwy & La Grange Rd/CR J59

Peak Hour Turning Movement Count

ID: 23-090099-002
City: Jamestown

Day: Tuesday
Date: 8/29/2023



National Data & Surveying Services Intersection Turning Movement Count

Location: La Grange Rd/CR J59 & Yosemite Blvd/SR 132
City: La Grange
Control: 4-Way Stop

Project ID: 23-090099-003
Date: 8/29/2023

Data - Total

NS/EW Streets:	La Grange Rd/CR J59				La Grange Rd/CR J59				Yosemite Blvd/SR 132				Yosemite Blvd/SR 132					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	1	0	0	0	1	0	0	0	1	1	0	0	1	1	0		
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
	0	11	2	0	0	6	8	0	3	4	0	0	3	29	1	0	67	
	7:00 AM	3	25	3	0	0	15	4	0	4	1	2	0	1	21	0	0	79
	7:15 AM	0	15	2	0	0	13	4	0	3	6	1	0	1	17	0	0	62
	7:30 AM	2	16	3	0	0	16	4	0	4	5	0	0	4	27	1	0	82
	7:45 AM	3	11	2	0	1	12	1	0	6	4	0	0	3	9	1	0	53
	8:00 AM	0	9	1	0	1	14	4	0	11	6	2	0	1	9	0	0	58
	8:15 AM	0	18	2	0	1	15	3	0	1	7	1	0	0	13	0	0	61
8:30 AM	0	10	1	0	0	16	5	0	5	9	1	0	0	13	0	0	60	
8:45 AM																		
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
	8	115	16	0	3	107	33	0	37	42	7	0	13	138	3	0	522	
APPROACH %'s :	5.76%	82.73%	11.51%	0.00%	2.10%	74.83%	23.08%	0.00%	43.02%	48.84%	8.14%	0.00%	8.44%	89.61%	1.95%	0.00%		
PEAK HR :	07:00 AM - 08:00 AM																TOTAL	
PEAK HR VOL :	5	67	10	0	0	50	20	0	14	16	3	0	9	94	2	0	290	
PEAK HR FACTOR :	0.417	0.670	0.833	0.000	0.000	0.781	0.625	0.000	0.875	0.667	0.375	0.000	0.563	0.810	0.500	0.000	0.884	
	0.661				0.875				0.825				0.795					
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	1	0	0	0	1	0	0	0	1	1	0	0	1	1	0		
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
	0	17	0	0	1	14	1	0	9	18	5	0	1	8	0	0	74	
	4:00 PM	1	10	3	0	0	24	7	0	5	23	3	0	4	5	3	0	88
	4:15 PM	2	23	0	0	0	25	8	0	0	15	3	0	0	11	0	0	87
	4:30 PM	1	7	3	1	0	22	6	0	7	25	3	0	2	13	0	0	90
	4:45 PM	0	11	2	1	0	12	6	0	7	23	1	0	1	12	0	0	76
	5:00 PM	2	12	2	0	1	13	4	0	6	19	4	0	3	3	2	0	71
	5:15 PM	0	15	3	0	0	19	3	0	7	26	0	0	0	8	0	0	81
5:30 PM	0	9	2	0	0	22	3	0	8	19	1	0	1	13	1	0	79	
5:45 PM																		
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
	6	104	15	2	2	151	38	0	49	168	20	0	12	73	6	0	646	
APPROACH %'s :	4.72%	81.89%	11.81%	1.57%	1.05%	79.06%	19.90%	0.00%	20.68%	70.89%	8.44%	0.00%	13.19%	80.22%	6.59%	0.00%		
PEAK HR :	04:15 PM - 05:15 PM																TOTAL	
PEAK HR VOL :	4	51	8	2	0	83	27	0	19	86	10	0	7	41	3	0	341	
PEAK HR FACTOR :	0.500	0.554	0.667	0.500	0.000	0.830	0.844	0.000	0.679	0.860	0.833	0.000	0.438	0.788	0.250	0.000	0.947	
	0.650				0.833				0.821				0.850					

National Data & Surveying Services Intersection Turning Movement Count

Location: La Grange Rd/CR J59 & Yosemite Blvd/SR 132
City: La Grange
Control: 4-Way Stop

Project ID: 23-090099-003
Date: 8/29/2023

Data - Cars

NS/EW Streets:	La Grange Rd/CR J59				La Grange Rd/CR J59				Yosemite Blvd/SR 132				Yosemite Blvd/SR 132					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	1	0	0	0	1	0	0	0	1	1	0	0	1	1	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	0	10	1	0	0	6	8	0	3	3	0	0	3	28	1	0	63	
	7:00 AM	3	23	3	0	0	14	4	0	4	1	1	0	1	21	0	0	75
	7:15 AM	0	13	2	0	0	11	4	0	3	5	1	0	1	16	0	0	56
	7:30 AM	2	15	3	0	0	8	4	0	4	5	0	0	4	26	1	0	72
	7:45 AM	3	6	2	0	1	11	0	0	3	4	0	0	3	9	1	0	43
	8:00 AM	0	6	1	0	1	12	3	0	9	4	2	0	1	9	0	0	48
	8:15 AM	0	15	2	0	1	14	3	0	0	6	1	0	0	12	0	0	54
8:30 AM	0	8	1	0	0	13	3	0	5	9	0	0	0	13	0	0	52	
8:45 AM																		
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	8	96	15	0	3	89	29	0	31	37	5	0	13	134	3	0	463	
	6.72%	80.67%	12.61%	0.00%	2.48%	73.55%	23.97%	0.00%	42.47%	50.68%	6.85%	0.00%	8.67%	89.33%	2.00%	0.00%		
PEAK HR :	07:00 AM - 08:00 AM																TOTAL	
PEAK HR VOL :	5	61	9	0	0	39	20	0	14	14	2	0	9	91	2	0	266	
PEAK HR FACTOR :	0.417	0.663	0.750	0.000	0.000	0.696	0.625	0.000	0.875	0.700	0.500	0.000	0.563	0.813	0.500	0.000	0.887	
	0.647				0.819				0.833				0.797					
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	1	0	0	0	1	0	0	0	1	1	0	0	1	1	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	0	17	0	0	1	14	1	0	9	18	4	0	1	8	0	0	73	
	4:00 PM	1	10	3	0	0	23	6	0	5	23	3	0	4	5	3	0	86
	4:15 PM	2	20	0	0	0	23	8	0	0	13	3	0	0	11	0	0	80
	4:30 PM	1	6	3	1	0	21	5	0	7	25	3	0	2	10	0	0	84
	4:45 PM	0	11	2	0	0	12	6	0	6	22	1	0	1	12	0	0	73
	5:00 PM	2	12	2	0	1	12	3	0	6	18	4	0	3	3	2	0	68
	5:15 PM	0	15	3	0	0	16	3	0	7	26	0	0	0	8	0	0	78
5:30 PM	0	7	2	0	0	22	3	0	8	19	1	0	1	13	1	0	77	
5:45 PM																		
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	6	98	15	1	2	143	35	0	48	164	19	0	12	70	6	0	619	
	5.00%	81.67%	12.50%	0.83%	1.11%	79.44%	19.44%	0.00%	20.78%	71.00%	8.23%	0.00%	13.64%	79.55%	6.82%	0.00%		
PEAK HR :	04:15 PM - 05:15 PM																TOTAL	
PEAK HR VOL :	4	47	8	1	0	79	25	0	18	83	10	0	7	38	3	0	323	
PEAK HR FACTOR :	0.500	0.588	0.667	0.250	0.000	0.859	0.781	0.000	0.643	0.830	0.833	0.000	0.438	0.792	0.250	0.000	0.939	
	0.682				0.839				0.793				0.923					

National Data & Surveying Services Intersection Turning Movement Count

Location: La Grange Rd/CR J59 & Yosemite Blvd/SR 132
City: La Grange
Control: 4-Way Stop

Project ID: 23-090099-003
Date: 8/29/2023

Data - 2axle

NS/EW Streets:	La Grange Rd/CR J59				La Grange Rd/CR J59				Yosemite Blvd/SR 132				Yosemite Blvd/SR 132				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	1	0	0	0	1	0	0	0	1	1	0	0	1	1	0	2
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
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	1	0	0	0	0	0	0	0	1	0	0	2
8:00 AM	0	1	0	0	0	0	0	0	3	0	0	0	0	0	0	0	4
8:15 AM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
8:30 AM	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	4
8:45 AM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
TOTAL VOLUMES :	0	6	0	0	0	1	0	0	3	4	1	0	0	3	0	0	18
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	37.50%	50.00%	12.50%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																
PEAK HR VOL :	0	1	0	0	0	1	0	0	0	2	0	0	0	2	0	0	6
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.500	0.000	0.000	0.750
	0.250				0.250				0.500				0.500				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
4:30 PM	0	3	0	0	0	1	0	0	0	1	0	0	0	0	0	0	5
4:45 PM	0	1	0	0	0	1	1	0	0	0	0	0	0	3	0	0	6
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
TOTAL VOLUMES :	0	6	0	0	0	6	3	0	0	1	0	0	0	3	0	0	19
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	66.67%	33.33%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																
PEAK HR VOL :	0	4	0	0	0	3	2	0	0	1	0	0	0	3	0	0	13
PEAK HR FACTOR :	0.000	0.333	0.000	0.000	0.000	0.750	0.500	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.542
	0.333				0.625				0.250				0.250				

National Data & Surveying Services Intersection Turning Movement Count

Location: La Grange Rd/CR J59 & Yosemite Blvd/SR 132
City: La Grange
Control: 4-Way Stop

Project ID: 23-090099-003
Date: 8/29/2023

Data - 3axle

NS/EW Streets:	La Grange Rd/CR J59				La Grange Rd/CR J59				Yosemite Blvd/SR 132				Yosemite Blvd/SR 132					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	1	0	0	0	1	0	0	0	1	1	0	0	1	1	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	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	
	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	1	0	0	0	0	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	1	0	0	0	0	0	0	0	0	0	0	1	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	3	
	0.00%				100.00%				50.00%				50.00%					
PEAK HR :	07:00 AM - 08:00 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	0	
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	1	0	0	0	1	0	0	0	1	1	0	0	1	1	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	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	
	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	1	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	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	
	0.00%				0.00%				0.00%				100.00%					
PEAK HR :	04:15 PM - 05:15 PM																TOTAL	
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	1	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	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250	

National Data & Surveying Services Intersection Turning Movement Count

Location: La Grange Rd/CR J59 & Yosemite Blvd/SR 132
City: La Grange
Control: 4-Way Stop

Project ID: 23-090099-003
Date: 8/29/2023

Data - 4axle

NS/EW Streets:	La Grange Rd/CR J59				La Grange Rd/CR J59				Yosemite Blvd/SR 132				Yosemite Blvd/SR 132				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	1	0	0	0	1	0	0	0	1	1	0	0	1	1	0	2
7:15 AM	0	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	3
7:30 AM	0	2	0	0	0	2	0	0	0	0	0	0	0	1	0	0	5
7:45 AM	0	1	0	0	0	7	0	0	0	0	0	0	0	0	0	0	8
8:00 AM	0	4	0	0	0	1	1	0	0	0	0	0	0	0	0	0	6
8:15 AM	0	2	0	0	0	2	1	0	1	0	0	0	0	0	0	0	6
8:30 AM	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	3
8:45 AM	0	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	5
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	13	1	0	0	16	4	0	2	0	1	0	0	1	0	0	38
	0.00%	92.86%	7.14%	0.00%	0.00%	80.00%	20.00%	0.00%	66.67%	0.00%	33.33%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	5	1	0	0	10	0	0	0	0	1	0	0	1	0	0	18
PEAK HR FACTOR :	0.000	0.625	0.250	0.000	0.000	0.357	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.563
	0.750				0.357				0.250				0.250				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	1	0	0	0	1	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	1	0	0	0	0	1	0	0	0	0	0	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	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
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	0	0	1	0	2	0	0	1	1	1	0	0	0	0	0	6
	0.00%	0.00%	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	33.33%	33.33%	33.33%	0.00%	0	0	0	0	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	1	0	1	0	0	1	1	0	0	0	0	0	0	4
PEAK HR FACTOR :	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.500
	0.250				0.250				0.500								

National Data & Surveying Services Intersection Turning Movement Count

Location: La Grange Rd/CR J59 & Yosemite Blvd/SR 132
City: La Grange
Control: 4-Way Stop

Project ID: 23-090099-003
Date: 8/29/2023

Data - Bikes

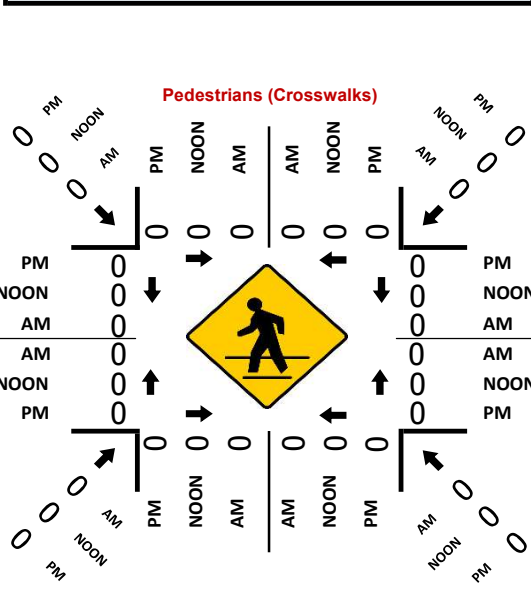
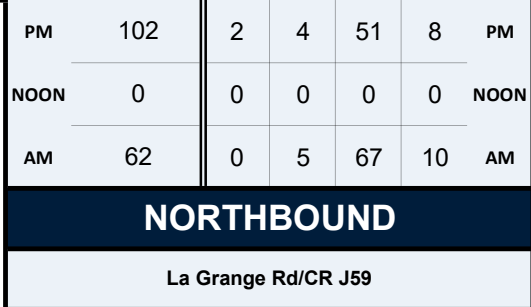
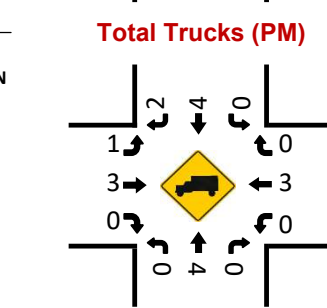
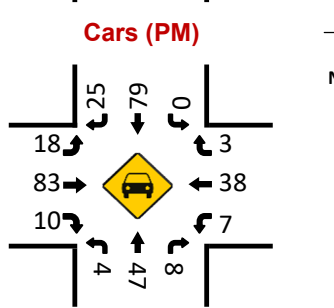
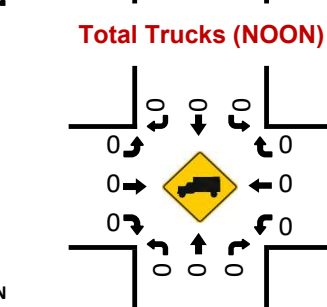
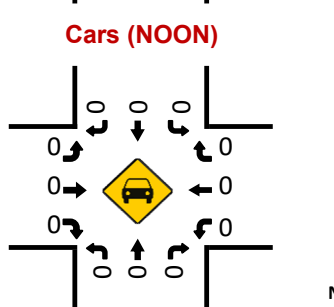
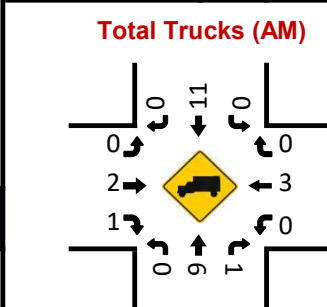
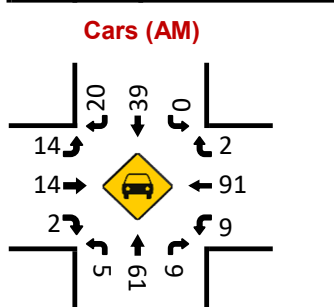
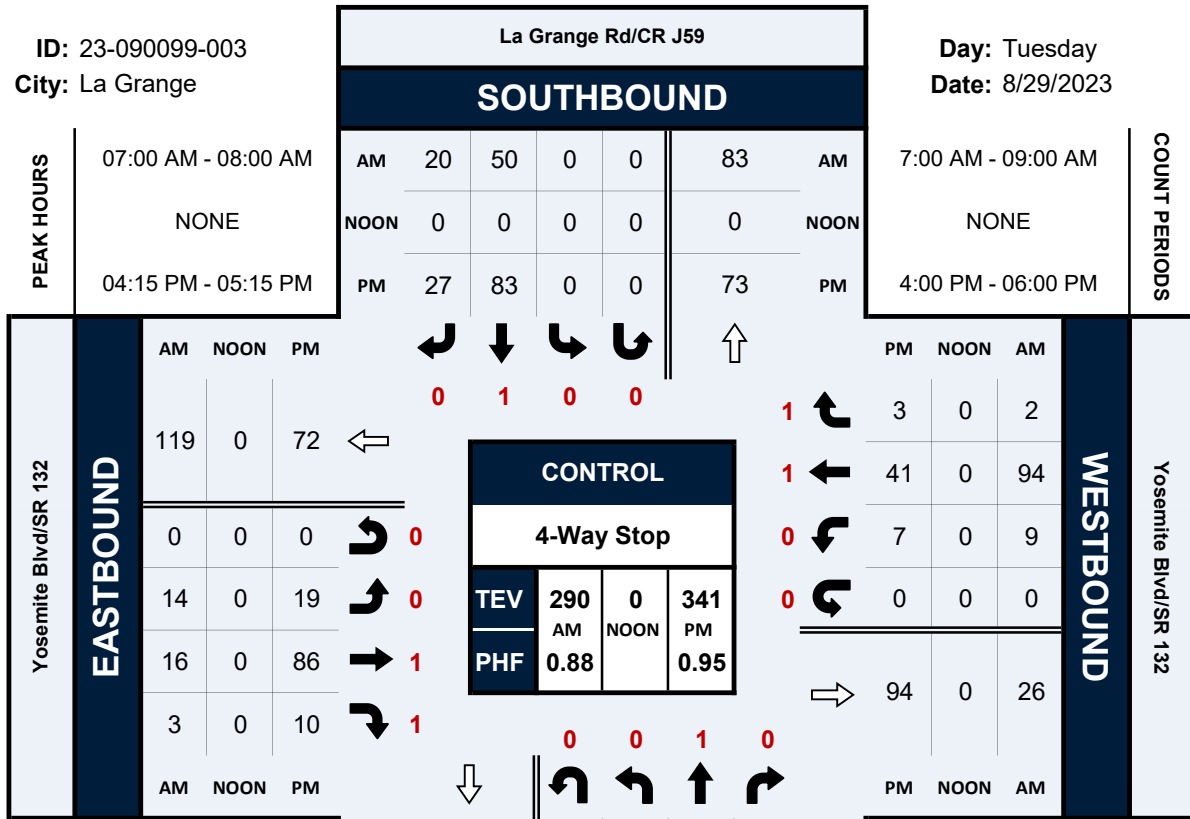
NS/EW Streets:	La Grange Rd/CR J59				La Grange Rd/CR J59				Yosemite Blvd/SR 132				Yosemite Blvd/SR 132					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	1	0	0	0	1	0	0	0	1	1	0	0	1	1	0		
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 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	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PEAK HR :	07:00 AM - 08:00 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	0	
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	1	0	0	0	1	0	0	0	1	1	0	0	1	1	0		
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
	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	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PEAK HR :	04:15 PM - 05:15 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 :	0.000	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	

La Grange Rd/CR J59 & Yosemite Blvd/SR 132

Peak Hour Turning Movement Count

ID: 23-090099-003
City: La Grange

Day: Tuesday
Date: 8/29/2023



National Data & Surveying Services Intersection Turning Movement Count

Location: Red Hill Rd & Montezuma Rd/SR 49
City: Chinese Camp
Control: 1-Way Stop(NB)

Project ID: 23-090099-004
Date: 8/29/2023

Data - Total

NS/EW Streets:	Red Hill Rd				Red Hill Rd				Montezuma Rd/SR 49				Montezuma Rd/SR 49					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	7:00 AM	3	0	0	0	0	0	0	0	0	29	2	0	0	17	0	0	51
	7:15 AM	2	0	1	0	0	0	0	0	0	14	0	0	0	18	0	0	35
	7:30 AM	2	0	0	0	0	0	0	0	0	26	2	0	0	22	0	0	52
	7:45 AM	4	0	0	0	0	0	0	0	0	19	1	0	0	19	0	0	43
	8:00 AM	3	0	1	0	0	0	0	0	0	28	6	0	0	13	0	0	51
	8:15 AM	2	0	1	0	0	0	0	0	0	37	6	0	0	20	0	0	66
	8:30 AM	4	0	1	0	0	0	0	0	0	29	1	0	0	22	0	0	57
8:45 AM	1	0	1	0	0	0	0	0	0	38	3	0	0	20	0	0	63	
TOTAL VOLUMES :	21	0	5	0	0	0	0	0	0	220	21	0	0	151	0	0	418	
APPROACH %'s :	80.77%	0.00%	19.23%	0.00%					0.00%	91.29%	8.71%	0.00%	0.00%	100.00%	0.00%	0.00%		
PEAK HR :	08:00 AM - 09:00 AM																TOTAL	
PEAK HR VOL :	10	0	4	0	0	0	0	0	0	132	16	0	0	75	0	0	237	
PEAK HR FACTOR :	0.625	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.868	0.667	0.000	0.000	0.852	0.000	0.000	0.898	
			0.700							0.860				0.852				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	4:00 PM	6	0	1	0	0	0	0	0	0	26	9	0	1	39	0	0	82
	4:15 PM	1	0	2	0	0	0	0	0	0	19	5	0	2	34	0	1	64
	4:30 PM	2	0	0	0	0	0	0	0	0	18	5	0	2	65	0	0	92
	4:45 PM	2	0	0	0	0	0	0	0	0	20	1	0	0	35	0	0	58
	5:00 PM	2	0	0	0	0	0	0	0	0	29	2	0	0	45	0	0	78
	5:15 PM	3	0	2	0	0	0	0	0	0	30	5	0	1	29	0	0	70
	5:30 PM	1	0	0	0	0	0	0	0	0	15	6	0	2	38	0	0	62
5:45 PM	1	0	2	0	0	0	0	0	0	26	4	0	0	26	0	0	59	
TOTAL VOLUMES :	18	0	7	0	0	0	0	0	0	183	37	0	8	311	0	1	565	
APPROACH %'s :	72.00%	0.00%	28.00%	0.00%					0.00%	83.18%	16.82%	0.00%	2.50%	97.19%	0.00%	0.31%		
PEAK HR :	04:30 PM - 05:30 PM																TOTAL	
PEAK HR VOL :	9	0	2	0	0	0	0	0	0	97	13	0	3	174	0	0	298	
PEAK HR FACTOR :	0.750	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.808	0.650	0.000	0.375	0.669	0.000	0.000	0.810	
			0.550							0.786				0.660				

National Data & Surveying Services Intersection Turning Movement Count

Location: Red Hill Rd & Montezuma Rd/SR 49
City: Chinese Camp
Control: 1-Way Stop(NB)

Project ID: 23-090099-004
Date: 8/29/2023

Data - Cars

NS/EW Streets:	Red Hill Rd				Red Hill Rd				Montezuma Rd/SR 49				Montezuma Rd/SR 49					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	7:00 AM	2	0	0	0	0	0	0	0	0	21	0	0	0	16	0	0	39
	7:15 AM	2	0	0	0	0	0	0	0	0	10	0	0	0	18	0	0	30
	7:30 AM	1	0	0	0	0	0	0	0	0	22	2	0	0	21	0	0	46
	7:45 AM	4	0	0	0	0	0	0	0	0	17	1	0	0	17	0	0	39
	8:00 AM	3	0	0	0	0	0	0	0	0	22	5	0	0	12	0	0	42
	8:15 AM	2	0	1	0	0	0	0	0	0	30	5	0	0	16	0	0	54
	8:30 AM	3	0	1	0	0	0	0	0	0	23	1	0	0	18	0	0	46
8:45 AM	1	0	1	0	0	0	0	0	0	31	3	0	0	18	0	0	54	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	18	0	3	0	0	0	0	0	0	176	17	0	0	136	0	0	350	
	85.71%	0.00%	14.29%	0.00%					0.00%	91.19%	8.81%	0.00%	0.00%	100.00%	0.00%	0.00%		
PEAK HR :	08:00 AM - 09:00 AM																TOTAL	
PEAK HR VOL :	9	0	3	0	0	0	0	0	0	106	14	0	0	64	0	0	196	
PEAK HR FACTOR :	0.750	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.855	0.700	0.000	0.000	0.889	0.000	0.000	0.907	
	0.750								0.857				0.889					
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	4:00 PM	6	0	1	0	0	0	0	0	0	26	8	0	1	38	0	0	80
	4:15 PM	1	0	2	0	0	0	0	0	0	19	4	0	2	32	0	1	61
	4:30 PM	2	0	0	0	0	0	0	0	0	17	5	0	1	63	0	0	88
	4:45 PM	1	0	0	0	0	0	0	0	0	20	1	0	0	32	0	0	54
	5:00 PM	2	0	0	0	0	0	0	0	0	28	2	0	0	40	0	0	72
	5:15 PM	3	0	2	0	0	0	0	0	0	30	5	0	1	28	0	0	69
	5:30 PM	1	0	0	0	0	0	0	0	0	15	6	0	2	37	0	0	61
5:45 PM	1	0	2	0	0	0	0	0	0	26	4	0	0	24	0	0	57	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	17	0	7	0	0	0	0	0	0	181	35	0	7	294	0	1	542	
	70.83%	0.00%	29.17%	0.00%					0.00%	83.80%	16.20%	0.00%	2.32%	97.35%	0.00%	0.33%		
PEAK HR :	04:30 PM - 05:30 PM																TOTAL	
PEAK HR VOL :	8	0	2	0	0	0	0	0	0	95	13	0	2	163	0	0	283	
PEAK HR FACTOR :	0.667	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.792	0.650	0.000	0.500	0.647	0.000	0.000	0.804	
	0.500								0.771				0.645					

National Data & Surveying Services Intersection Turning Movement Count

Location: Red Hill Rd & Montezuma Rd/SR 49
City: Chinese Camp
Control: 1-Way Stop(NB)

Project ID: 23-090099-004
Date: 8/29/2023

Data - 2axle

NS/EW Streets:	Red Hill Rd				Red Hill Rd				Montezuma Rd/SR 49				Montezuma Rd/SR 49					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	7:00 AM	1	0	0	0	0	0	0	0	0	2	2	0	0	1	0	0	6
	7:15 AM	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	3
	7:30 AM	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3
	7:45 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
	8:00 AM	0	0	1	0	0	0	0	0	0	3	1	0	0	1	0	0	6
	8:15 AM	0	0	0	0	0	0	0	0	0	4	1	0	0	1	0	0	6
	8:30 AM	1	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	4
8:45 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	4	
TOTAL VOLUMES :	3	0	2	0	0	0	0	0	0	19	4	0	0	6	0	0	34	
APPROACH %'s :	60.00%	0.00%	40.00%	0.00%					0.00%	82.61%	17.39%	0.00%	0.00%	100.00%	0.00%	0.00%		
PEAK HR :	08:00 AM - 09:00 AM																TOTAL	
PEAK HR VOL :	1	0	1	0	0	0	0	0	0	11	2	0	0	5	0	0	20	
PEAK HR FACTOR :	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.688	0.500	0.000	0.000	0.625	0.000	0.000	0.833	
			0.500							0.650				0.625				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	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	1	0	0	2	0	0	3
	4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	1	2	0	0	4
	4:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
	5:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	4
	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	1	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	
TOTAL VOLUMES :	1	0	0	0	0	0	0	0	0	2	1	0	1	12	0	0	17	
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%					0.00%	66.67%	33.33%	0.00%	7.69%	92.31%	0.00%	0.00%		
PEAK HR :	04:30 PM - 05:30 PM																TOTAL	
PEAK HR VOL :	1	0	0	0	0	0	0	0	0	2	0	0	1	7	0	0	11	
PEAK HR FACTOR :	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.250	0.583	0.000	0.000	0.688	
			0.250							0.500				0.667				

National Data & Surveying Services Intersection Turning Movement Count

Location: Red Hill Rd & Montezuma Rd/SR 49
City: Chinese Camp
Control: 1-Way Stop(NB)

Project ID: 23-090099-004
Date: 8/29/2023

Data - 3axle

NS/EW Streets:	Red Hill Rd				Red Hill Rd				Montezuma Rd/SR 49				Montezuma Rd/SR 49				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	4
7:15 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
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	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
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	2	0	0	0	1	0	0	3
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	0	0	0	0	0	0	0	0	14	0	0	0	2	0	0	16
	0.00%				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	7	0	0	0	2	0	0	9
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.875	0.000	0.000	0.000	0.500	0.000	0.000	0.750
									0.875				0.500				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	1	0	0	0	1	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	1	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
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
	0.00%				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	1	0	0	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250
													0.250				

National Data & Surveying Services Intersection Turning Movement Count

Location: Red Hill Rd & Montezuma Rd/SR 49
City: Chinese Camp
Control: 1-Way Stop(NB)

Project ID: 23-090099-004
Date: 8/29/2023

Data - 4axle

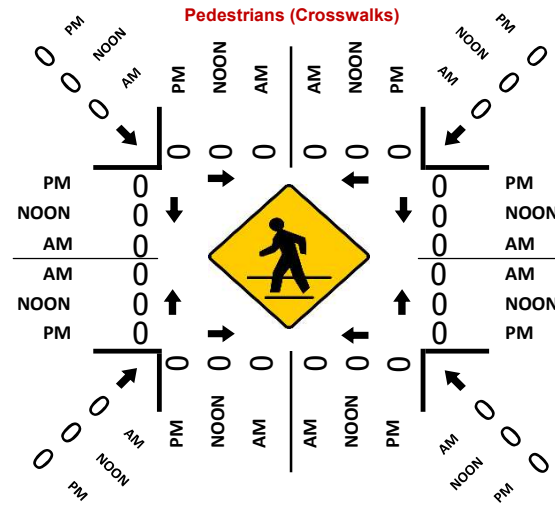
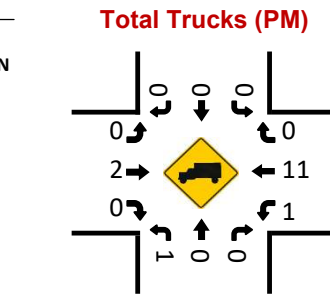
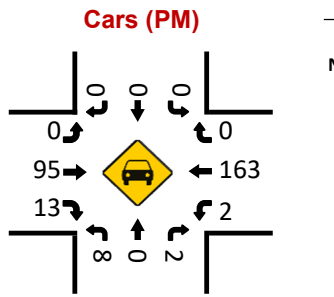
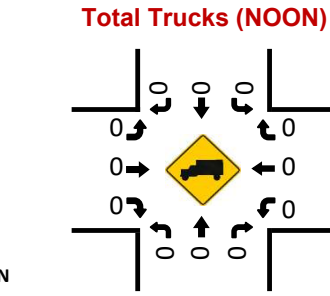
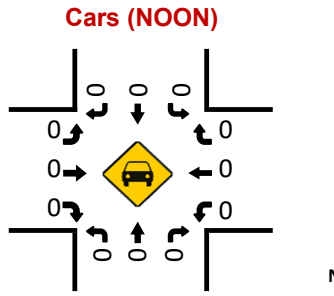
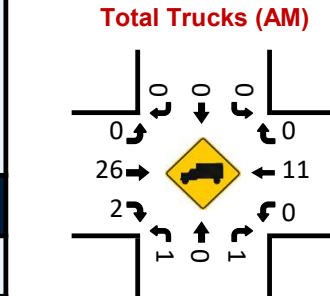
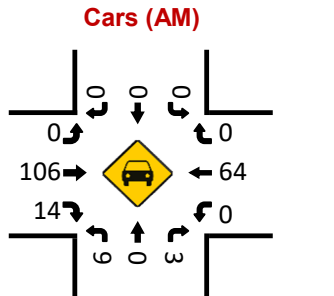
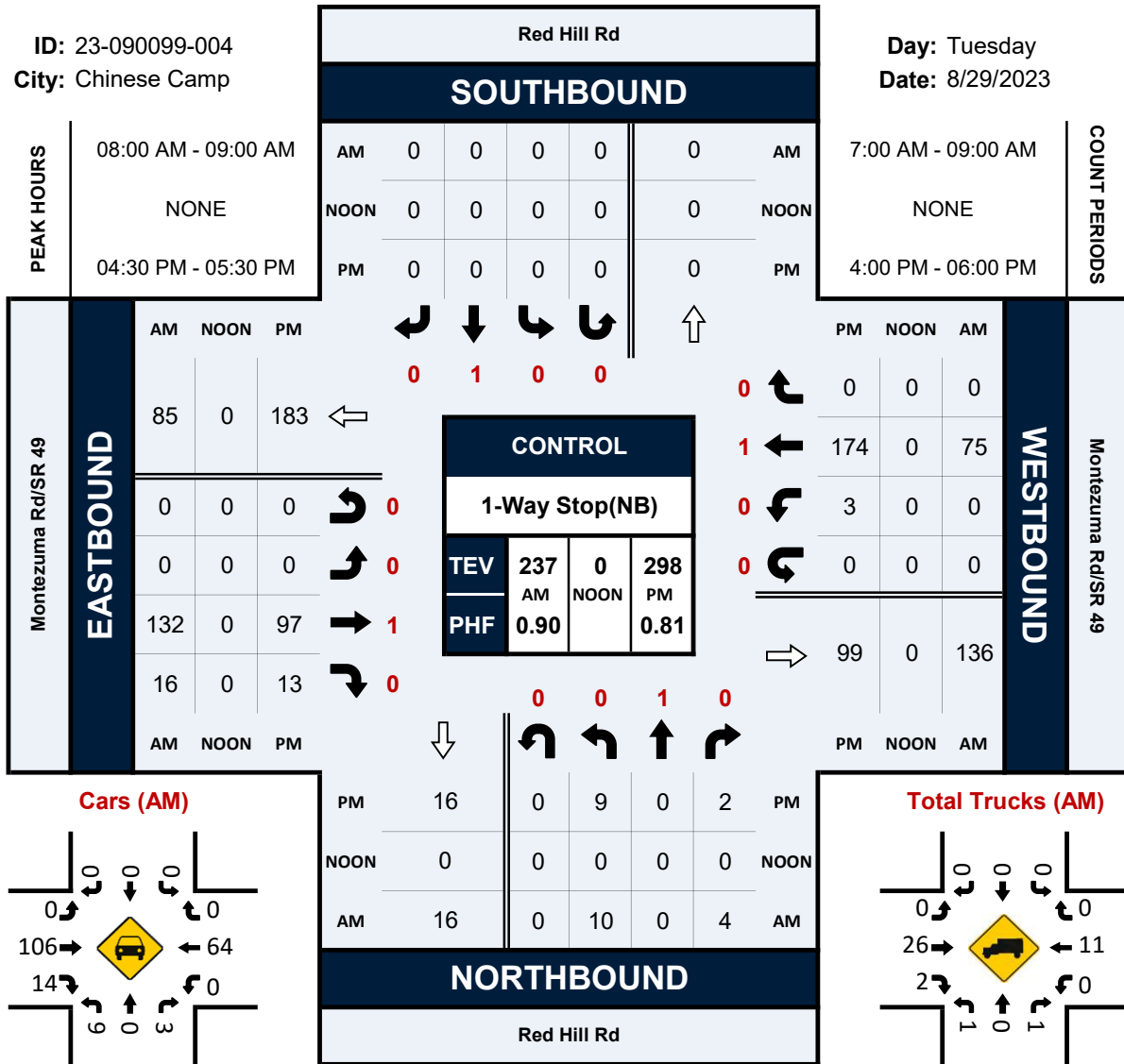
NS/EW Streets:	Red Hill Rd				Red Hill Rd				Montezuma Rd/SR 49				Montezuma Rd/SR 49				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0	0	6
0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	0	0	0	0	0	0	0	0	11	0	0	0	7	0	0	18
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	8	0	0	0	4	0	0	12
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	0.500	0.000	0.000	0.500
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	0	0	0	0	0	0	0	0	0	1	0	0	4	0	0	5
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	3	0	0	3
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	0.375	0.000	0.000	0.375

Red Hill Rd & Montezuma Rd/SR 49

Peak Hour Turning Movement Count

ID: 23-090099-004
City: Chinese Camp

Day: Tuesday
Date: 8/29/2023



Appendix B

LOS Worksheets

Intersection						
Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	20	147	430	14	97	338
Future Vol, veh/h	20	147	430	14	97	338
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	Free	-	None
Storage Length	0	25	-	75	475	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	21	155	453	15	102	356

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1013	-	0
Stage 1	453	-	-
Stage 2	560	-	-
Critical Hdwy	6.4	-	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	-	-
Pot Cap-1 Maneuver	267	0	-
Stage 1	645	0	-
Stage 2	576	0	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	243	-	-
Mov Cap-2 Maneuver	243	-	-
Stage 1	645	-	-
Stage 2	524	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.2	0	1.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBTWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	- 243	- 1118	-
HCM Lane V/C Ratio	- 0.087	- 0.091	-
HCM Control Delay (s)	- 21.2	0	8.5
HCM Lane LOS	- C	A	A
HCM 95th %tile Q(veh)	- 0.3	- 0.3	-

HCM 6th TWSC
2: La Grange Road - CR J59 & SPI Employee Dwy

Existing
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	111	169	0	0	0
Future Vol, veh/h	0	111	169	0	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	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	126	192	0	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	192	0	-	0	318 192
Stage 1	-	-	-	-	192 -
Stage 2	-	-	-	-	126 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1394	-	-	-	679 855
Stage 1	-	-	-	-	845 -
Stage 2	-	-	-	-	905 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1394	-	-	-	679 855
Mov Cap-2 Maneuver	-	-	-	-	679 -
Stage 1	-	-	-	-	845 -
Stage 2	-	-	-	-	905 -

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

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

HCM 6th TWSC
 3: La Grange Road - CR J59 & SPI Truck Dwy

Existing
 Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↑	↗		↘	
Traffic Vol, veh/h	3	105	163	2	1	6
Future Vol, veh/h	3	105	163	2	1	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	300	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	3	122	190	2	1	7

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	192	0	-	0	319
Stage 1	-	-	-	-	191
Stage 2	-	-	-	-	128
Critical Hdwy	4.1	-	-	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	2.2	-	-	-	3.5
Pot Cap-1 Maneuver	1394	-	-	-	678
Stage 1	-	-	-	-	846
Stage 2	-	-	-	-	903
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1394	-	-	-	677
Mov Cap-2 Maneuver	-	-	-	-	677
Stage 1	-	-	-	-	844
Stage 2	-	-	-	-	903

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1394	-	-	-	825
HCM Lane V/C Ratio	0.003	-	-	-	0.01
HCM Control Delay (s)	7.6	-	-	-	9.4
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗		↖	↗		↖	↗
Traffic Vol, veh/h	14	17	5	9	97	2	5	78	12	0	71	20
Future Vol, veh/h	14	17	5	9	97	2	5	78	12	0	71	20
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	16	19	6	10	110	2	6	89	14	0	81	23
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	8.2	8.9	8.3	8.1
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	6%	0%	45%	0%	8%	0%	0%	0%
Vol Thru, %	94%	0%	55%	0%	92%	0%	100%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	83	12	31	5	106	2	71	20
LT Vol	5	0	14	0	9	0	0	0
Through Vol	78	0	17	0	97	0	71	0
RT Vol	0	12	0	5	0	2	0	20
Lane Flow Rate	94	14	35	6	120	2	81	23
Geometry Grp	5	5	5	5	5	5	5	5
Degree of Util (X)	0.132	0.016	0.053	0.007	0.171	0.003	0.113	0.027
Departure Headway (Hd)	5.051	4.318	5.366	4.436	5.101	4.356	5.027	4.324
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	711	830	668	807	705	822	714	829
Service Time	2.773	2.04	3.092	2.162	2.823	2.078	2.748	2.045
HCM Lane V/C Ratio	0.132	0.017	0.052	0.007	0.17	0.002	0.113	0.028
HCM Control Delay	8.5	7.1	8.4	7.2	8.9	7.1	8.4	7.2
HCM Lane LOS	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.5	0	0.2	0	0.6	0	0.4	0.1

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	161	17	0	88	11	5
Future Vol, veh/h	161	17	0	88	11	5
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	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	179	19	0	98	12	6

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	198	0	287
Stage 1	-	-	-	-	189
Stage 2	-	-	-	-	98
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1387	-	708
Stage 1	-	-	-	-	848
Stage 2	-	-	-	-	931
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1387	-	708
Mov Cap-2 Maneuver	-	-	-	-	708
Stage 1	-	-	-	-	848
Stage 2	-	-	-	-	931

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

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	708	858	-	-	1387	-
HCM Lane V/C Ratio	0.017	0.006	-	-	-	-
HCM Control Delay (s)	10.2	9.2	-	-	0	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	18	88	313	34	117	485
Future Vol, veh/h	18	88	313	34	117	485
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	Free	-	None
Storage Length	0	25	-	75	475	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	19	92	326	35	122	505

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1075	-	0
Stage 1	326	-	-
Stage 2	749	-	-
Critical Hdwy	6.4	-	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	-	-
Pot Cap-1 Maneuver	245	0	-
Stage 1	736	0	-
Stage 2	471	0	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	221	-	-
Mov Cap-2 Maneuver	221	-	-
Stage 1	736	-	-
Stage 2	425	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.8	0	1.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBTWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	- 221	- 1245	-
HCM Lane V/C Ratio	- 0.085	- 0.098	-
HCM Control Delay (s)	- 22.8	0	8.2
HCM Lane LOS	- C	A	A
HCM 95th %tile Q(veh)	- 0.3	- 0.3	-

HCM 6th TWSC
2: La Grange Road - CR J59 & SPI Employee Dwy

Existing
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	151	101	0	0	0
Future Vol, veh/h	0	151	101	0	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	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	172	115	0	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	115	0	-	0	287 115
Stage 1	-	-	-	-	115 -
Stage 2	-	-	-	-	172 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1487	-	-	-	708 943
Stage 1	-	-	-	-	915 -
Stage 2	-	-	-	-	863 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1487	-	-	-	708 943
Mov Cap-2 Maneuver	-	-	-	-	708 -
Stage 1	-	-	-	-	915 -
Stage 2	-	-	-	-	863 -

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1487	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

HCM 6th TWSC
 3: La Grange Road - CR J59 & SPI Truck Dwy

Existing
 Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑	↗		↘	
Traffic Vol, veh/h	6	153	101	0	0	0
Future Vol, veh/h	6	153	101	0	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	300	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	7	189	125	0	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	125	0	-	0	328 125
Stage 1	-	-	-	-	125 -
Stage 2	-	-	-	-	203 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1474	-	-	-	671 931
Stage 1	-	-	-	-	906 -
Stage 2	-	-	-	-	836 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1474	-	-	-	668 931
Mov Cap-2 Maneuver	-	-	-	-	668 -
Stage 1	-	-	-	-	901 -
Stage 2	-	-	-	-	836 -

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1474	-	-	-	-
HCM Lane V/C Ratio	0.005	-	-	-	-
HCM Control Delay (s)	7.5	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗		↖	↗		↖	↗
Traffic Vol, veh/h	21	90	10	7	43	3	4	53	8	0	87	28
Future Vol, veh/h	21	90	10	7	43	3	4	53	8	0	87	28
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	22	95	11	7	45	3	4	56	8	0	92	29
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	8.8	8.2	8.2	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	7%	0%	19%	0%	14%	0%	0%	0%
Vol Thru, %	93%	0%	81%	0%	86%	0%	100%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	57	8	111	10	50	3	87	28
LT Vol	4	0	21	0	7	0	0	0
Through Vol	53	0	90	0	43	0	87	0
RT Vol	0	8	0	10	0	3	0	28
Lane Flow Rate	60	8	117	11	53	3	92	29
Geometry Grp	5	5	5	5	5	5	5	5
Degree of Util (X)	0.085	0.01	0.166	0.013	0.075	0.004	0.128	0.035
Departure Headway (Hd)	5.117	4.379	5.115	4.317	5.158	4.385	5.035	4.332
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	701	818	703	830	696	817	713	828
Service Time	2.839	2.101	2.833	2.036	2.881	2.107	2.754	2.051
HCM Lane V/C Ratio	0.086	0.01	0.166	0.013	0.076	0.004	0.129	0.035
HCM Control Delay	8.3	7.1	8.9	7.1	8.3	7.1	8.5	7.2
HCM Lane LOS	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.3	0	0.6	0	0.2	0	0.4	0.1

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	98	13	4	185	10	2
Future Vol, veh/h	98	13	4	185	10	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	121	16	5	228	12	2

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	137	0	367
Stage 1	-	-	-	-	129
Stage 2	-	-	-	-	238
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1459	-	637
Stage 1	-	-	-	-	902
Stage 2	-	-	-	-	806
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1459	-	634
Mov Cap-2 Maneuver	-	-	-	-	634
Stage 1	-	-	-	-	902
Stage 2	-	-	-	-	803

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	634	926	-	-	1459	-
HCM Lane V/C Ratio	0.019	0.003	-	-	0.003	-
HCM Control Delay (s)	10.8	8.9	-	-	7.5	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

Intersection						
Int Delay, s/veh	1.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	23	170	430	19	129	338
Future Vol, veh/h	23	170	430	19	129	338
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	Free	-	None
Storage Length	0	25	-	75	475	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	24	179	453	20	136	356

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1081	-	0
Stage 1	453	-	-
Stage 2	628	-	-
Critical Hdwy	6.4	-	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	-	-
Pot Cap-1 Maneuver	243	0	0
Stage 1	645	0	0
Stage 2	536	0	0
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	213	-	-
Mov Cap-2 Maneuver	213	-	-
Stage 1	645	-	-
Stage 2	471	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.1	0	2.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBTWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	- 213	- 1118	-
HCM Lane V/C Ratio	- 0.114	- 0.121	-
HCM Control Delay (s)	- 24.1	0	8.7
HCM Lane LOS	- C	A	A
HCM 95th %tile Q(veh)	- 0.4	- 0.4	-

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	16	132	187	9	5	8
Future Vol, veh/h	16	132	187	9	5	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	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	18	150	213	10	6	9

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	223	0	0	404	218
Stage 1	-	-	-	218	-
Stage 2	-	-	-	186	-
Critical Hdwy	4.1	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	3.5	3.3
Pot Cap-1 Maneuver	1358	-	-	606	827
Stage 1	-	-	-	823	-
Stage 2	-	-	-	851	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1358	-	-	598	827
Mov Cap-2 Maneuver	-	-	-	598	-
Stage 1	-	-	-	811	-
Stage 2	-	-	-	851	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1358	-	-	-	721
HCM Lane V/C Ratio	0.013	-	-	-	0.02
HCM Control Delay (s)	7.7	0	-	-	10.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	24	110	172	6	4	24
Future Vol, veh/h	24	110	172	6	4	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	28	128	200	7	5	28

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	207	0	-	0	388
Stage 1	-	-	-	-	204
Stage 2	-	-	-	-	184
Critical Hdwy	4.1	-	-	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	2.2	-	-	-	3.5
Pot Cap-1 Maneuver	1376	-	-	-	619
Stage 1	-	-	-	-	835
Stage 2	-	-	-	-	852
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1376	-	-	-	607
Mov Cap-2 Maneuver	-	-	-	-	607
Stage 1	-	-	-	-	818
Stage 2	-	-	-	-	852

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1376	-	-	-	798
HCM Lane V/C Ratio	0.02	-	-	-	0.041
HCM Control Delay (s)	7.7	-	-	-	9.7
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗		↖	↗		↖	↗
Traffic Vol, veh/h	17	17	5	9	97	7	5	82	12	4	73	21
Future Vol, veh/h	17	17	5	9	97	7	5	82	12	4	73	21
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	19	19	6	10	110	8	6	93	14	5	83	24
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	8.3	8.8	8.4	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	6%	0%	50%	0%	8%	0%	5%	0%
Vol Thru, %	94%	0%	50%	0%	92%	0%	95%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	87	12	34	5	106	7	77	21
LT Vol	5	0	17	0	9	0	4	0
Through Vol	82	0	17	0	97	0	73	0
RT Vol	0	12	0	5	0	7	0	21
Lane Flow Rate	99	14	39	6	120	8	88	24
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.14	0.016	0.058	0.007	0.172	0.01	0.123	0.029
Departure Headway (Hd)	5.081	4.349	5.434	4.479	5.142	4.397	5.08	4.351
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	707	824	660	799	699	815	707	823
Service Time	2.804	2.072	3.161	2.206	2.864	2.118	2.804	2.075
HCM Lane V/C Ratio	0.14	0.017	0.059	0.008	0.172	0.01	0.124	0.029
HCM Control Delay	8.6	7.1	8.5	7.2	8.9	7.2	8.5	7.2
HCM Lane LOS	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.5	0	0.2	0	0.6	0	0.4	0.1

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	166	17	1	94	11	6
Future Vol, veh/h	166	17	1	94	11	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	-	-	-	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	184	19	1	104	12	7

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	203	0	300
Stage 1	-	-	-	-	194
Stage 2	-	-	-	-	106
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1381	-	696
Stage 1	-	-	-	-	844
Stage 2	-	-	-	-	923
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1381	-	695
Mov Cap-2 Maneuver	-	-	-	-	695
Stage 1	-	-	-	-	844
Stage 2	-	-	-	-	922

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	695	853	-	-	1381	-
HCM Lane V/C Ratio	0.018	0.008	-	-	0.001	-
HCM Control Delay (s)	10.3	9.3	-	-	7.6	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	18	108	313	37	140	485
Future Vol, veh/h	18	108	313	37	140	485
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	Free	-	None
Storage Length	0	25	-	75	475	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	19	113	326	39	146	505

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1123	-	0
Stage 1	326	-	-
Stage 2	797	-	-
Critical Hdwy	6.4	-	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	-	-
Pot Cap-1 Maneuver	230	0	-
Stage 1	736	0	-
Stage 2	447	0	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	203	-	-
Mov Cap-2 Maneuver	203	-	-
Stage 1	736	-	-
Stage 2	395	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.5	0	1.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBTWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	- 203	- 1245	-
HCM Lane V/C Ratio	- 0.092	- 0.117	-
HCM Control Delay (s)	- 24.5	0	8.3
HCM Lane LOS	- C	A	A
HCM 95th %tile Q(veh)	- 0.3	- 0.4	-

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	9	168	121	5	0	0
Future Vol, veh/h	9	168	121	5	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	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	10	191	138	6	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	144	0	-	0	352 141
Stage 1	-	-	-	-	141 -
Stage 2	-	-	-	-	211 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1451	-	-	-	650 912
Stage 1	-	-	-	-	891 -
Stage 2	-	-	-	-	829 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1451	-	-	-	645 912
Mov Cap-2 Maneuver	-	-	-	-	645 -
Stage 1	-	-	-	-	884 -
Stage 2	-	-	-	-	829 -

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1451	-	-	-	-
HCM Lane V/C Ratio	0.007	-	-	-	-
HCM Control Delay (s)	7.5	0	-	-	0
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	23	153	106	3	4	20
Future Vol, veh/h	23	153	106	3	4	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	28	189	131	4	5	25

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	135	0	-	0	378 133
Stage 1	-	-	-	-	133 -
Stage 2	-	-	-	-	245 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1462	-	-	-	628 922
Stage 1	-	-	-	-	898 -
Stage 2	-	-	-	-	800 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1462	-	-	-	616 922
Mov Cap-2 Maneuver	-	-	-	-	616 -
Stage 1	-	-	-	-	881 -
Stage 2	-	-	-	-	800 -

Approach	EB	WB	SB
HCM Control Delay, s	1	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1462	-	-	-	852
HCM Lane V/C Ratio	0.019	-	-	-	0.035
HCM Control Delay (s)	7.5	-	-	-	9.4
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔		↔	↔		↔	↔
Traffic Vol, veh/h	22	90	10	7	43	7	4	55	8	4	87	28
Future Vol, veh/h	22	90	10	7	43	7	4	55	8	4	87	28
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	23	95	11	7	45	7	4	58	8	4	92	29
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	8.8	8.2	8.3	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	7%	0%	20%	0%	14%	0%	4%	0%
Vol Thru, %	93%	0%	80%	0%	86%	0%	96%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	59	8	112	10	50	7	91	28
LT Vol	4	0	22	0	7	0	4	0
Through Vol	55	0	90	0	43	0	87	0
RT Vol	0	8	0	10	0	7	0	28
Lane Flow Rate	62	8	118	11	53	7	96	29
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.089	0.01	0.168	0.013	0.076	0.009	0.135	0.036
Departure Headway (Hd)	5.134	4.397	5.141	4.34	5.179	4.406	5.072	4.347
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	699	814	699	825	693	812	708	824
Service Time	2.859	2.122	2.864	2.062	2.905	2.132	2.794	2.069
HCM Lane V/C Ratio	0.089	0.01	0.169	0.013	0.076	0.009	0.136	0.035
HCM Control Delay	8.4	7.2	8.9	7.1	8.3	7.2	8.6	7.2
HCM Lane LOS	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.3	0	0.6	0	0.2	0	0.5	0.1

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	104	13	5	190	10	2
Future Vol, veh/h	104	13	5	190	10	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	128	16	6	235	12	2

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	144	0	383
Stage 1	-	-	-	-	136
Stage 2	-	-	-	-	247
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1451	-	624
Stage 1	-	-	-	-	895
Stage 2	-	-	-	-	799
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1451	-	621
Mov Cap-2 Maneuver	-	-	-	-	621
Stage 1	-	-	-	-	895
Stage 2	-	-	-	-	795

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	621	918	-	-	1451	-
HCM Lane V/C Ratio	0.02	0.003	-	-	0.004	-
HCM Control Delay (s)	10.9	8.9	-	-	7.5	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	21	189	511	15	107	362
Future Vol, veh/h	21	189	511	15	107	362
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	Free	-	None
Storage Length	0	25	-	75	475	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	22	199	538	16	113	381

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1145	-	0	-	538
Stage 1	538	-	-	-	-
Stage 2	607	-	-	-	-
Critical Hdwy	6.4	-	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	-	-	-	2.2
Pot Cap-1 Maneuver	223	0	-	0	1040
Stage 1	589	0	-	0	-
Stage 2	548	0	-	0	-
Platoon blocked, %					
Mov Cap-1 Maneuver	199	-	-	-	1040
Mov Cap-2 Maneuver	199	-	-	-	-
Stage 1	589	-	-	-	-
Stage 2	488	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.3	0	2
HCM LOS	D		

Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	199	-	1040
HCM Lane V/C Ratio	-	0.111	-	0.108
HCM Control Delay (s)	-	25.3	0	8.9
HCM Lane LOS	-	D	A	A
HCM 95th %tile Q(veh)	-	0.4	-	0.4

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	121	212	0	0	0
Future Vol, veh/h	0	121	212	0	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	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	138	241	0	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	241	0	-	0	379 241
Stage 1	-	-	-	-	241 -
Stage 2	-	-	-	-	138 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1337	-	-	-	627 803
Stage 1	-	-	-	-	804 -
Stage 2	-	-	-	-	894 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1337	-	-	-	627 803
Mov Cap-2 Maneuver	-	-	-	-	627 -
Stage 1	-	-	-	-	804 -
Stage 2	-	-	-	-	894 -

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1337	-	-	-	-
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	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑	↗		↘	
Traffic Vol, veh/h	3	115	206	2	1	6
Future Vol, veh/h	3	115	206	2	1	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	300	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	3	134	240	2	1	7

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	242	0	0	381	241
Stage 1	-	-	-	241	-
Stage 2	-	-	-	140	-
Critical Hdwy	4.1	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	3.5	3.3
Pot Cap-1 Maneuver	1336	-	-	625	803
Stage 1	-	-	-	804	-
Stage 2	-	-	-	892	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1336	-	-	624	803
Mov Cap-2 Maneuver	-	-	-	624	-
Stage 1	-	-	-	802	-
Stage 2	-	-	-	892	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1336	-	-	-	771
HCM Lane V/C Ratio	0.003	-	-	-	0.011
HCM Control Delay (s)	7.7	-	-	-	9.7
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗		↖	↗		↖	↗
Traffic Vol, veh/h	27	18	5	9	101	14	5	93	12	2	76	23
Future Vol, veh/h	27	18	5	9	101	14	5	93	12	2	76	23
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	31	20	6	10	115	16	6	106	14	2	86	26
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	8.7	8.9	8.7	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	5%	0%	60%	0%	8%	0%	3%	0%
Vol Thru, %	95%	0%	40%	0%	92%	0%	97%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	98	12	45	5	110	14	78	23
LT Vol	5	0	27	0	9	0	2	0
Through Vol	93	0	18	0	101	0	76	0
RT Vol	0	12	0	5	0	14	0	23
Lane Flow Rate	111	14	51	6	125	16	89	26
Geometry Grp	5	5	5	5	5	5	5	5
Degree of Util (X)	0.159	0.017	0.079	0.007	0.18	0.02	0.127	0.032
Departure Headway (Hd)	5.151	4.423	5.543	4.537	5.198	4.453	5.15	4.434
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	697	809	646	787	690	803	697	807
Service Time	2.88	2.151	3.278	2.272	2.928	2.184	2.879	2.163
HCM Lane V/C Ratio	0.159	0.017	0.079	0.008	0.181	0.02	0.128	0.032
HCM Control Delay	8.9	7.2	8.8	7.3	9.1	7.3	8.6	7.3
HCM Lane LOS	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.6	0.1	0.3	0	0.7	0.1	0.4	0.1

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	184	18	0	131	11	5
Future Vol, veh/h	184	18	0	131	11	5
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	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	204	20	0	146	12	6

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	224	0	360
Stage 1	-	-	-	-	214
Stage 2	-	-	-	-	146
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1357	-	643
Stage 1	-	-	-	-	826
Stage 2	-	-	-	-	886
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1357	-	643
Mov Cap-2 Maneuver	-	-	-	-	643
Stage 1	-	-	-	-	826
Stage 2	-	-	-	-	886

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	643	831	-	-	1357	-
HCM Lane V/C Ratio	0.019	0.007	-	-	-	-
HCM Control Delay (s)	10.7	9.4	-	-	0	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	19	110	357	35	158	569
Future Vol, veh/h	19	110	357	35	158	569
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	Free	-	None
Storage Length	0	25	-	75	475	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	20	115	372	36	165	593

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1295	-	0	-	372
Stage 1	372	-	-	-	-
Stage 2	923	-	-	-	-
Critical Hdwy	6.4	-	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	-	-	-	2.2
Pot Cap-1 Maneuver	181	0	-	0	1198
Stage 1	702	0	-	0	-
Stage 2	390	0	-	0	-
Platoon blocked, %					
Mov Cap-1 Maneuver	156	-	-	-	1198
Mov Cap-2 Maneuver	156	-	-	-	-
Stage 1	702	-	-	-	-
Stage 2	336	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31.4	0	1.8
HCM LOS	D		

Minor Lane/Major Mvmt	NBTWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	- 156	- 1198	-
HCM Lane V/C Ratio	- 0.127	- 0.137	-
HCM Control Delay (s)	- 31.4	0	8.5
HCM Lane LOS	- D	A	A
HCM 95th %tile Q(veh)	- 0.4	- 0.5	-

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	193	123	0	0	0
Future Vol, veh/h	0	193	123	0	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	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	219	140	0	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	140	0	-	0	359 140
Stage 1	-	-	-	-	140 -
Stage 2	-	-	-	-	219 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1456	-	-	-	644 913
Stage 1	-	-	-	-	892 -
Stage 2	-	-	-	-	822 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1456	-	-	-	644 913
Mov Cap-2 Maneuver	-	-	-	-	644 -
Stage 1	-	-	-	-	892 -
Stage 2	-	-	-	-	822 -

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1456	-	-	-	-
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	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑	↗		↘	
Traffic Vol, veh/h	6	195	123	0	0	0
Future Vol, veh/h	6	195	123	0	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	300	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	7	241	152	0	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	152	0	-	0	407
Stage 1	-	-	-	-	152
Stage 2	-	-	-	-	255
Critical Hdwy	4.1	-	-	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	2.2	-	-	-	3.5
Pot Cap-1 Maneuver	1441	-	-	-	604
Stage 1	-	-	-	-	881
Stage 2	-	-	-	-	792
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1441	-	-	-	601
Mov Cap-2 Maneuver	-	-	-	-	601
Stage 1	-	-	-	-	877
Stage 2	-	-	-	-	792

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1441	-	-	-	-
HCM Lane V/C Ratio	0.005	-	-	-	-
HCM Control Delay (s)	7.5	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗		↖	↗		↖	↗
Traffic Vol, veh/h	28	94	10	7	45	9	4	61	8	12	103	41
Future Vol, veh/h	28	94	10	7	45	9	4	61	8	12	103	41
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	29	99	11	7	47	9	4	64	8	13	108	43
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	9	8.3	8.4	8.6
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	6%	0%	23%	0%	13%	0%	10%	0%
Vol Thru, %	94%	0%	77%	0%	87%	0%	90%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	65	8	122	10	52	9	115	41
LT Vol	4	0	28	0	7	0	12	0
Through Vol	61	0	94	0	45	0	103	0
RT Vol	0	8	0	10	0	9	0	41
Lane Flow Rate	68	8	128	11	55	9	121	43
Geometry Grp	5	5	5	5	5	5	5	5
Degree of Util (X)	0.099	0.01	0.188	0.013	0.081	0.012	0.173	0.053
Departure Headway (Hd)	5.217	4.483	5.275	4.456	5.306	4.535	5.155	4.399
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	686	797	681	803	675	788	696	813
Service Time	2.953	2.218	3.006	2.187	3.042	2.27	2.885	2.13
HCM Lane V/C Ratio	0.099	0.01	0.188	0.014	0.081	0.011	0.174	0.053
HCM Control Delay	8.5	7.3	9.2	7.2	8.5	7.3	9	7.4
HCM Lane LOS	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.3	0	0.7	0	0.3	0	0.6	0.2

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	140	14	4	216	10	2
Future Vol, veh/h	140	14	4	216	10	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	173	17	5	267	12	2

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	190	0	459
Stage 1	-	-	-	-	182
Stage 2	-	-	-	-	277
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1396	-	564
Stage 1	-	-	-	-	854
Stage 2	-	-	-	-	774
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1396	-	562
Mov Cap-2 Maneuver	-	-	-	-	562
Stage 1	-	-	-	-	854
Stage 2	-	-	-	-	771

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	562	866	-	-	1396	-
HCM Lane V/C Ratio	0.022	0.003	-	-	0.004	-
HCM Control Delay (s)	11.6	9.2	-	-	7.6	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	24	212	511	20	139	362
Future Vol, veh/h	24	212	511	20	139	362
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	Free	-	None
Storage Length	0	25	-	75	475	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	25	223	538	21	146	381

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1211	-	0	-	538
Stage 1	538	-	-	-	-
Stage 2	673	-	-	-	-
Critical Hdwy	6.4	-	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	-	-	-	2.2
Pot Cap-1 Maneuver	203	0	-	0	1040
Stage 1	589	0	-	0	-
Stage 2	511	0	-	0	-
Platoon blocked, %					
Mov Cap-1 Maneuver	175	-	-	-	1040
Mov Cap-2 Maneuver	175	-	-	-	-
Stage 1	589	-	-	-	-
Stage 2	439	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	29	0	2.5
HCM LOS	D		

Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	175	-	1040
HCM Lane V/C Ratio	-	0.144	-	0.141
HCM Control Delay (s)	-	29	0	9
HCM Lane LOS	-	D	A	A
HCM 95th %tile Q(veh)	-	0.5	-	0.5

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	16	142	230	9	5	8
Future Vol, veh/h	16	142	230	9	5	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	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	18	161	261	10	6	9

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	271	0	0	463	266
Stage 1	-	-	-	266	-
Stage 2	-	-	-	197	-
Critical Hdwy	4.1	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	3.5	3.3
Pot Cap-1 Maneuver	1304	-	-	561	778
Stage 1	-	-	-	783	-
Stage 2	-	-	-	841	-
Platoon blocked, %		-	-		
Mov Cap-1 Maneuver	1304	-	-	553	778
Mov Cap-2 Maneuver	-	-	-	553	-
Stage 1	-	-	-	771	-
Stage 2	-	-	-	841	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1304	-	-	-	673
HCM Lane V/C Ratio	0.014	-	-	-	0.022
HCM Control Delay (s)	7.8	0	-	-	10.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	24	120	215	6	4	24
Future Vol, veh/h	24	120	215	6	4	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	28	140	250	7	5	28

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	257	0	-	0	450
Stage 1	-	-	-	-	254
Stage 2	-	-	-	-	196
Critical Hdwy	4.1	-	-	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	2.2	-	-	-	3.5
Pot Cap-1 Maneuver	1320	-	-	-	571
Stage 1	-	-	-	-	793
Stage 2	-	-	-	-	842
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1320	-	-	-	559
Mov Cap-2 Maneuver	-	-	-	-	559
Stage 1	-	-	-	-	776
Stage 2	-	-	-	-	842

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1320	-	-	-	746
HCM Lane V/C Ratio	0.021	-	-	-	0.044
HCM Control Delay (s)	7.8	-	-	-	10
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗		↖	↗		↖	↗
Traffic Vol, veh/h	30	18	5	9	101	19	5	97	12	6	78	24
Future Vol, veh/h	30	18	5	9	101	19	5	97	12	6	78	24
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	34	20	6	10	115	22	6	110	14	7	89	27
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	8.8	8.8	8.8	8.5
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	5%	0%	62%	0%	8%	0%	7%	0%
Vol Thru, %	95%	0%	38%	0%	92%	0%	93%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	102	12	48	5	110	19	84	24
LT Vol	5	0	30	0	9	0	6	0
Through Vol	97	0	18	0	101	0	78	0
RT Vol	0	12	0	5	0	19	0	24
Lane Flow Rate	116	14	55	6	125	22	95	27
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.167	0.017	0.085	0.007	0.182	0.027	0.138	0.034
Departure Headway (Hd)	5.184	4.456	5.597	4.578	5.236	4.491	5.204	4.465
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	692	802	639	779	685	796	689	801
Service Time	2.916	2.188	3.338	2.319	2.972	2.227	2.936	2.197
HCM Lane V/C Ratio	0.168	0.017	0.086	0.008	0.182	0.028	0.138	0.034
HCM Control Delay	9	7.3	8.9	7.4	9.1	7.4	8.8	7.4
HCM Lane LOS	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.6	0.1	0.3	0	0.7	0.1	0.5	0.1

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	189	18	1	137	11	6
Future Vol, veh/h	189	18	1	137	11	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	-	-	-	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	210	20	1	152	12	7

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	230	0	374
Stage 1	-	-	-	-	220
Stage 2	-	-	-	-	154
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1350	-	631
Stage 1	-	-	-	-	821
Stage 2	-	-	-	-	879
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1350	-	630
Mov Cap-2 Maneuver	-	-	-	-	630
Stage 1	-	-	-	-	821
Stage 2	-	-	-	-	878

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	630	825	-	-	1350	-
HCM Lane V/C Ratio	0.019	0.008	-	-	0.001	-
HCM Control Delay (s)	10.8	9.4	-	-	7.7	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	19	130	357	38	181	568
Future Vol, veh/h	19	130	357	38	181	568
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	Free	-	None
Storage Length	0	25	-	75	475	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	20	135	372	40	189	592

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1342	-	0	-	372
Stage 1	372	-	-	-	-
Stage 2	970	-	-	-	-
Critical Hdwy	6.4	-	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	-	-	-	2.2
Pot Cap-1 Maneuver	169	0	-	0	1198
Stage 1	702	0	-	0	-
Stage 2	371	0	-	0	-
Platoon blocked, %					
Mov Cap-1 Maneuver	142	-	-	-	1198
Mov Cap-2 Maneuver	142	-	-	-	-
Stage 1	702	-	-	-	-
Stage 2	312	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	34.4	0	2.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	142	-	1198
HCM Lane V/C Ratio	-	0.139	-	0.157
HCM Control Delay (s)	-	34.4	0	8.6
HCM Lane LOS	-	D	A	A
HCM 95th %tile Q(veh)	-	0.5	-	0.6

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	9	210	143	5	0	0
Future Vol, veh/h	9	210	143	5	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	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	10	239	163	6	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	169	0	-	0	425 166
Stage 1	-	-	-	-	166 -
Stage 2	-	-	-	-	259 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1421	-	-	-	590 884
Stage 1	-	-	-	-	868 -
Stage 2	-	-	-	-	789 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1421	-	-	-	585 884
Mov Cap-2 Maneuver	-	-	-	-	585 -
Stage 1	-	-	-	-	861 -
Stage 2	-	-	-	-	789 -

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1421	-	-	-	-
HCM Lane V/C Ratio	0.007	-	-	-	-
HCM Control Delay (s)	7.6	0	-	-	0
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑	↗		↘	
Traffic Vol, veh/h	23	195	128	3	4	20
Future Vol, veh/h	23	195	128	3	4	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	28	241	158	4	5	25

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	162	0	-	0	457 160
Stage 1	-	-	-	-	160 -
Stage 2	-	-	-	-	297 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1429	-	-	-	565 890
Stage 1	-	-	-	-	874 -
Stage 2	-	-	-	-	758 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1429	-	-	-	554 890
Mov Cap-2 Maneuver	-	-	-	-	554 -
Stage 1	-	-	-	-	857 -
Stage 2	-	-	-	-	758 -

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1429	-	-	-	808
HCM Lane V/C Ratio	0.02	-	-	-	0.037
HCM Control Delay (s)	7.6	-	-	-	9.6
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗		↖	↗		↖	↗
Traffic Vol, veh/h	29	94	10	7	45	13	4	63	8	16	102	41
Future Vol, veh/h	29	94	10	7	45	13	4	63	8	16	102	41
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	31	99	11	7	47	14	4	66	8	17	107	43
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	9.1	8.3	8.5	8.7
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	6%	0%	24%	0%	13%	0%	14%	0%
Vol Thru, %	94%	0%	76%	0%	87%	0%	86%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	67	8	123	10	52	13	118	41
LT Vol	4	0	29	0	7	0	16	0
Through Vol	63	0	94	0	45	0	102	0
RT Vol	0	8	0	10	0	13	0	41
Lane Flow Rate	71	8	129	11	55	14	124	43
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.103	0.011	0.191	0.013	0.081	0.017	0.179	0.053
Departure Headway (Hd)	5.234	4.5	5.298	4.477	5.325	4.553	5.186	4.415
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	684	794	677	798	672	784	692	810
Service Time	2.972	2.237	3.033	2.211	3.065	2.293	2.919	2.148
HCM Lane V/C Ratio	0.104	0.01	0.191	0.014	0.082	0.018	0.179	0.053
HCM Control Delay	8.6	7.3	9.3	7.3	8.5	7.4	9.1	7.4
HCM Lane LOS	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.3	0	0.7	0	0.3	0.1	0.6	0.2

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	146	14	5	221	10	2
Future Vol, veh/h	146	14	5	221	10	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	180	17	6	273	12	2

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	197	0	474
Stage 1	-	-	-	-	189
Stage 2	-	-	-	-	285
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1388	-	553
Stage 1	-	-	-	-	848
Stage 2	-	-	-	-	768
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1388	-	550
Mov Cap-2 Maneuver	-	-	-	-	550
Stage 1	-	-	-	-	848
Stage 2	-	-	-	-	764

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	550	858	-	-	1388	-
HCM Lane V/C Ratio	0.022	0.003	-	-	0.004	-
HCM Control Delay (s)	11.7	9.2	-	-	7.6	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

Appendix C

Haul Routes and Levels of Service

Tuolumne Facility Haul Routes and Levels of Service

Haul Route	CA Postmile	Latitude	Longitude	Lanes at Postmile	FHWA FCF ¹	Type ²	LOS "D" Capacity at Postmile ²	Data Year ³	Back ADT	Ahead ADT	ADT (Base Yr)	ADT (2023)	V/C (E)	LOS	ADT (Project Logging/Haul Trucks)	ADT (E+P)	V/C (E+P)	LOS	LOS D or better?	ADT (2025)	V/C (OY)	LOS (OY)	ADT (OY+P)	V/C (OY+P)	LOS (OY+P)	OY+P LOS D or better?
SR-4	29.62	38.139059	-120.456141	2	4	210	20100	2021	7000	6800	7000	7283	0.362	A	236	7519	0.374	A	Yes	7577	0.377	A	7813	0.389	A	Yes
SR-4	18.556	38.067128	-120.598894	2	3	5	13260	2021	4900	4900	4900	510	0.038	A	236	746	0.056	A	Yes	531	0.040	A	767	0.058	A	Yes
SR-41	17.91	37.12444	-119.736963	4	3	2	20485	2021	16000	13400	16000	16646	0.813	D	236	16882	0.824	D	Yes	17318	0.845	D	17584	0.857	D	Yes
SR-49	1.65	38.573869	-120.846136	2	3	5	13260	2021	2050	2050	2050	2133	0.161	A	236	2369	0.179	A	Yes	2219	0.167	A	2455	0.185	A	Yes
SR-49	9.42	38.087694	-120.57103	2	4	5	13260	2021	7700	7100	7700	8011	0.604	B	236	8247	0.622	B	Yes	8335	0.629	B	8571	0.646	B	Yes
SR-49	29.45	37.569309	-120.119433	2	3	210	20100	2021	860	510	860	895	0.045	A	236	1131	0.056	A	Yes	931	0.046	A	1167	0.058	A	Yes
US 50	20.296	38.731226	-120.76013	4	3	201	74400	2021	24300	23900	24300	25282	0.340	A	236	25518	0.343	A	Yes	26303	0.354	A	26539	0.357	A	Yes
US 50	65.619	38.824307	-120.044235	2	3	104	18190	2021	15500	9200	15500	16126	0.887	D	236	16362	0.900	D	Yes	16777	0.922	E	17013	0.935	E	No
SR-88	1.25	38.704996	-120.050932	2	2	105	12340	2021	1950	2450	2450	2549	0.207	A	236	2785	0.226	A	Yes	2652	0.215	A	2888	0.234	A	Yes
SR-88	22.69	38.412824	-120.667363	2	3	4	19550	2021	12000	12000	12000	12485	0.639	B	236	12721	0.651	B	Yes	12989	0.664	B	13225	0.676	B	Yes
SR-108	7.511	37.996508	-120.267276	4	4	1	26520	2021	10500	7900	10500	10924	0.412	A	236	11160	0.421	A	Yes	11365	0.429	A	11601	0.437	A	Yes
SR-108	9.6	38.350174	-119.536286	2	4	105	12340	2021	1300	1550	1550	1613	0.131	A	236	1849	0.150	A	Yes	1678	0.136	A	1914	0.155	A	Yes
SR-120	32.184	37.838293	-120.231647	2	3	5	13260	2021	8600	3850	8600	8947	0.675	B	236	9183	0.693	B	Yes	9308	0.702	C	9544	0.720	C	Yes
SR-120	8.19	37.84335	-120.508081	2	3	4	19550	2021	9500	12900	12900	13421	0.686	B	236	13657	0.699	B	Yes	13863	0.714	C	14199	0.726	C	Yes
SR-132	7.58	37.706276	-120.334027	2	4	5	13260	2021	1450	1150	1450	1509	0.114	A	236	1745	0.132	A	Yes	1570	0.118	A	1806	0.136	A	Yes
SR-132	45.81	37.661141	-120.483363	2	4	5	13260	2021	1700	1400	1700	1769	0.133	A	236	2005	0.151	A	Yes	1840	0.139	A	2076	0.157	A	Yes
SR-140	29.689	37.564499	-119.939815	2	3	105	12340	2021	2550	1400	2550	2653	0.215	A	236	2889	0.234	A	Yes	2760	0.224	A	2996	0.243	A	Yes
SR-167	15.47	36.873802	-119.557381	2	4	5	13260	2021	7000	6500	7000	7283	0.549	A	236	7519	0.567	A	Yes	7577	0.571	A	7813	0.589	A	Yes
SR-168	65.84	37.258427	-119.161485	2	4	105	12340	2021	1100	1000	1100	1144	0.093	A	236	1380	0.112	A	Yes	1190	0.096	A	1426	0.116	A	Yes
Road CR 159		37.840655	-120.507755	2	4	8	11008	2023	3155		3155	3155	0.287	A	236	3391	0.308	A	Yes	3282	0.298	A	3518	0.320	A	Yes

¹ Federal Highway Administration Functional Classification System for Caltrans roadways.

² Type number and capacity based on the LOS Look Up Table provided as Appendix Table 2 of the Tuolumne County General Plan and RTP Update Traffic Study (September 2015).

³ Average daily traffic (ADT), including back and ahead ADT, provided by Caltrans Traffic Census Program for the most recent available year (2021).

Appendix Table 2 – Tuolumne County – LOS Look up Table

FHWA FC#	Roadway Type	Type #	Area Type	Maximum Two-way Average Daily Traffic (ADT) Volume-carrying Capacity for each LOS Designation				
				LOS "A"	LOS "B"	LOS "C"	LOS "D"	LOS "E"
4	Rural Arterial (4-lane) Divided	1	ROLLING	6,240	12,480	18,720	26,520	31,200
4	Rural Arterial (4-lane) Undivided	2		4,820	9,640	14,460	20,485	24,100
4	Rural Minor Arterial (4-lane)	3		6,080	12,160	18,240	25,840	30,400
4	Rural Minor Arterial (with left-turn Lane)	4		4,600	9,200	13,800	19,550	23,000
4	Rural Minor Arterial (2-lane)	5		3,120	6,240	9,360	13,260	15,600
5	Major Collector (34 ft. - 36 ft.)	6		3,420	6,840	10,260	14,535	17,100
5	Major/Minor Collector (23 ft.- 32 ft.)	7		2,900	5,800	8,700	12,325	14,500
5	Major/Minor Collector (20 ft.- 23 ft.)	8		2,590	5,180	7,770	11,008	12,950
5	Major/Minor Collector (18 ft.- 20 ft.)	9		2,300	4,600	6,900	9,775	11,500
5	Major/Minor Collector (Less than 18 ft.)	10		1,920	3,840	5,760	8,160	9,600
6	Local Road	11		1,920	3,840	5,760	8,160	9,600
4	Rural Minor Arterial (with Climbing Lane)	12		2,900	7,400	13,800	19,700	28,800
4	Rural Arterial (4-lane) Divided	101	MOUNTANEOUS	5,810	11,610	17,410	24,670	29,020
4	Rural Arterial (4-lane) Undivided	102		4,490	8,970	13,450	19,060	22,420
4	Rural Minor Arterial (4-lane)	103		5,660	11,310	16,970	24,040	28,280
4	Rural Minor Arterial (with left-turn Lane)	104		4,280	8,560	12,840	18,190	21,390
4	Rural Minor Arterial (2-lane)	105		2,910	5,810	8,710	12,340	14,510
5	Major Collector (34 ft. - 36 ft.)	106		3,190	6,370	9,550	13,520	15,910
5	Major/Minor Collector (23 ft.- 32 ft.)	107		2,700	5,400	8,100	11,470	13,490
5	Major/Minor Collector (20 ft.- 23 ft.)	108		2,410	4,820	7,230	10,240	12,050
5	Major/Minor Collector (18 ft.- 20 ft.)	109		2,140	4,280	6,420	9,100	10,700
5	Major/Minor Collector (Less than 18 ft.)	110		1,790	3,580	5,360	7,590	8,930
6	Local Road	111		1,790	3,580	5,360	7,590	8,930
4	Rural Minor Arterial (with Climbing Lane)	112		2,700	6,890	12,840	18,330	26,790
2	4-Lane Freeway	201	URBAN	28,000	43,200	61,600	74,400	80,000
2	3-Lane Freeway	202		10,100	20,200	30,300	42,925	50,500
2	2-Lane Freeway + Auxiliary Lanes	203		8,392	16,784	25,176	35,666	41,960
2	2-Lane Freeway	204		6,680	13,360	20,040	28,390	33,400
2	4-Lane Expressway	205		24,000	28,000	32,000	36,000	40,000
2	2-Lane Expressway	206		5,700	11,300	17,000	24,100	28,400
3	6-Lane Divided Arterial (with left-turn lane)	207		32,000	38,000	43,000	49,000	54,000
3	4-Lane Divided Arterial (with left-turn lane)	208		22,000	25,000	29,000	32,500	36,000
3	4-Lane Undivided Arterial (no left-turn lane)	209		18,000	21,000	24,000	27,000	30,000
4	2-Lane Principal/Minor Arterial (with left-turn lane)	210		2,900	7,700	14,300	20,100	31,300
4	2-Lane Principal/Minor Arterial (no left-turn lane)	211		2,900	7,200	11,900	16,100	24,200
5	2-Lane Major/Minor Collector (with left-turn lane)	212		3,400	6,900	11,600	15,800	29,400
5	2-Lane Major/Minor Collector (no left-turn lane)	213		2,700	5,600	9,200	12,800	23,500
6	2-Lane Local Street	214		2,300	4,900	8,400	11,400	21,200

Notes:

1. Values shown corresponding to LOS A through E are roadway ADT traffic volumes
2. Collector width is measured from the edge of pavement to the edge of pavement
3. Roadways with continuous grade steeper than 6% or above 4,000 ft. elevation should use mountainous train LOS thresholds
4. Site Specific LOS maybe necessary
5. Peak Hour LOS threshold is assumed to be 10% of the daily traffic volume unless site specific analysis shows a different peak hour to daily traffic ratio
6. Examples LOS A (0.20 of capacity), LOS B (0.21 to 0.40 of capacity), LOS C (0.41 to 0.60 of capacity), LOS D (0.61 to 0.85 of capacity), LOS E (0.86 to 0.92 of capacity)

All volumes thresholds are approximate and assumes average roadway characteristics. Actual threshold volume for each Level of Service listed above may vary depending on variety of factors including (but not limited to) roadway curvature and grade, intersection or interchange spacing, driveway spacing, percentage of trucks, RVs, and other heavy vehicles, travel lane widths, speed limits, signal timing characteristics, on-street parking, volume of cross traffic and pedestrians, etc.

Appendix D

Cumulative Project Trip Generation

Cumulative Projects Trip Generation Summary

Land Use	ITE Code	Size/Units	Daily	AM Peak Hour			PM Peak Hour			
				In	Out	Total	In	Out	Total	
TRIP RATES¹										
Hotel	310	per Room	7.99	0.26	0.20	0.46	0.30	0.29	0.59	
Casino (Field Counts) ²	-	per GP	8.01	0.11	0.12	0.23	0.20	0.19	0.39	
Quality Restaurant	931	per TSF	10.99	0.37	0.37	0.73	5.23	2.57	7.80	
Drinking Place ³	975	per TSF	61.69	0.00	0.00	0.00	7.50	3.86	11.36	
No. TRIP GENERATION⁴										
T1	Casino	-	400 GP	3,204	54	38	92	96	73	169
			To Attached Hotel	-1,406	-19	-28	-47	-30	-32	-62
			To Steakhouse	-234	-1	-1	-2	-7	-14	-21
	Attached Hotel	310	200 Rooms	1,598	52	40	92	60	58	118
			To Casino	-828	-28	-19	-47	-32	-30	-62
	Sports Bar	975	2.4 TSF	148	0	0	0	18	9	27
			To Casino	-76	0	0	0	-9	-5	-14
	Steakhouse	931	5.4 TSF	59	2	2	4	28	14	42
			To Casino	-30	-1	-1	-2	-14	-7	-21
	Chicken Ranch Rancheria New Hotel and Casino Project² Net New Total			2,436	58	31	90	110	66	176
T2	Tuolumne Bioenergy Woody Biomass Pellet Manufacturing Facility		Passenger Vehicles	12	6	3	9	3	6	9
			Trucks	12	2	2	4	2	2	4
			Total	24	8	5	13	5	8	13
			Trucks (PCE-adjusted)	36	6	6	12	6	6	12
			Total (PCE-adjusted)	48	12	9	21	9	12	21
T3	Tuolumne Biomass LLC Biomass Utilization Project ⁵		Passenger Vehicles	334	167	0	167	0	167	167
			Trucks	130	8	8	16	8	8	16
			Total	464	175	8	183	8	175	183
			Trucks (PCE-adjusted)	390	24	24	48	24	24	48
			Total (PCE-adjusted)	724	191	24	215	24	191	215
T4	Social and Ecological Resilience Across the Landscape (SERAL) Forest Health Project Phase 1 - Stanislaus National Forest		Passenger Vehicles	45	13	0	13	0	13	13
			Trucks	108	8	7	15	7	7	14
			Total	153	21	7	28	7	20	27
			Trucks (PCE-adjusted)	324	24	21	45	21	21	42
			Total (PCE-adjusted)	369	37	21	58	21	34	55
	Total Trip Generation			3,077	262	51	313	130	268	399
	Total Trip Generation (PCE)			3,577	298	85	383	164	302	467

Notes: TSF = thousand square feet; GP = gaming position

¹ Trip rates from *Trip Generation Manual, 11th Edition*, Institute of Transportation Engineers, 2021.

² Trip generation from Appendix H of the Chicken Ranch Rancheria New Hotel and Casino Project Final TEIR, July 2021; updated where applicable with ITE 11th Edition rates. Daily internal trip capture (ITC) estimated from average percentages between AM and PM ITC assumptions from the TEIR.

³ No daily rate provided for Drinking Place land use; daily rate from Brewery Tap Room (ITE Code 971) used.

⁴ Cumulative projects provided by the County of Tuolumne, 2023.

⁵ Trip generation approximated from Appendix A of the TBLLC Public IS-MND; January 26, 2023.

⁶ Trip generation approximated from Figure 2 - Site Plan of the TBI Biomass Initial Study/Mitigated Negative Declaration; site plan received by Community Development Dept. March 30, 2021.

Appendix E

SimTraffic Queuing Worksheet

Queuing and Blocking Report
Existing

AM Peak Hour

Intersection: 1: SR-120 - SR-108 & La Grange Road - CR J59

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	66	48	61
Average Queue (ft)	17	37	26
95th Queue (ft)	47	43	52
Link Distance (ft)	510		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		25	475
Storage Blk Time (%)	7	2	
Queuing Penalty (veh)	11	0	

Intersection: 2: La Grange Road - CR J59 & SPI Employee Dwy

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 3: La Grange Road - CR J59 & SPI Truck Dwy

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	10	29
Average Queue (ft)	0	4
95th Queue (ft)	5	21
Link Distance (ft)	867	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	300	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
Existing

AM Peak Hour

Intersection: 4: La Grange Road - CR J59 & Yosemite Blvd - SR-132

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LT	LT	LT	R	LT	R
Maximum Queue (ft)	29	47	48	37	49	45
Average Queue (ft)	16	28	29	11	28	14
95th Queue (ft)	38	42	43	35	45	41
Link Distance (ft)	2630	2629	1416		2042	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				25		25
Storage Blk Time (%)			5	1	5	1
Queuing Penalty (veh)			1	1	1	1

Intersection: 5: Red Hill Road & Montezuma/SR-49 - SR-120

Movement	NB	NB
Directions Served	L	R
Maximum Queue (ft)	21	25
Average Queue (ft)	5	5
95th Queue (ft)	18	21
Link Distance (ft)	1595	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		50
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Network Summary

Network wide Queuing Penalty: 14

Queuing and Blocking Report
Existing

PM Peak Hour

Intersection: 1: SR-120 - SR-108 & La Grange Road - CR J59

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	44	44	53
Average Queue (ft)	12	33	22
95th Queue (ft)	36	47	49
Link Distance (ft)	510		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		25	475
Storage Blk Time (%)	7	1	
Queuing Penalty (veh)	6	0	

Intersection: 2: La Grange Road - CR J59 & SPI Employee Dwy

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 3: La Grange Road - CR J59 & SPI Truck Dwy

Movement	EB
Directions Served	L
Maximum Queue (ft)	17
Average Queue (ft)	1
95th Queue (ft)	8
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	300
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report
Existing

PM Peak Hour

Intersection: 4: La Grange Road - CR J59 & Yosemite Blvd - SR-132

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LT	LT	LT	R	LT	R
Maximum Queue (ft)	56	32	43	39	52	42
Average Queue (ft)	30	22	24	7	29	19
95th Queue (ft)	47	38	43	29	46	46
Link Distance (ft)	2630	2629	1416		2042	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				25		25
Storage Blk Time (%)			3	1	6	2
Queuing Penalty (veh)			0	0	2	1

Intersection: 5: Red Hill Road & Montezuma/SR-49 - SR-120

Movement	WB	NB	NB
Directions Served	LT	L	R
Maximum Queue (ft)	12	24	25
Average Queue (ft)	0	6	3
95th Queue (ft)	6	20	17
Link Distance (ft)	1098	1595	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			50
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Network Summary

Network wide Queuing Penalty: 10

Queuing and Blocking Report
Existing plus Project

AM Peak Hour

Intersection: 1: SR-120 - SR-108 & La Grange Road - CR J59

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	75	48	77
Average Queue (ft)	16	38	30
95th Queue (ft)	50	45	62
Link Distance (ft)	510		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		25	475
Storage Blk Time (%)	6	2	
Queuing Penalty (veh)	10	1	

Intersection: 2: La Grange Road - CR J59 & SPI Employee Dwy

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	39	29
Average Queue (ft)	2	10
95th Queue (ft)	17	32
Link Distance (ft)	510	582
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: La Grange Road - CR J59 & SPI Truck Dwy

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	34	38
Average Queue (ft)	3	19
95th Queue (ft)	18	42
Link Distance (ft)		867
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	300	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
Existing plus Project

AM Peak Hour

Intersection: 4: La Grange Road - CR J59 & Yosemite Blvd - SR-132

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LT	LT	LT	R	LT	R
Maximum Queue (ft)	42	50	51	37	53	45
Average Queue (ft)	18	29	29	12	30	14
95th Queue (ft)	40	43	43	36	44	40
Link Distance (ft)	2630	2629	1416		2042	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				25		25
Storage Blk Time (%)			6	1	5	1
Queuing Penalty (veh)			1	1	1	1

Intersection: 5: Red Hill Road & Montezuma/SR-49 - SR-120

Movement	NB	NB
Directions Served	L	R
Maximum Queue (ft)	20	25
Average Queue (ft)	5	5
95th Queue (ft)	17	21
Link Distance (ft)	1595	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		50
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Network Summary

Network wide Queuing Penalty: 14

Queuing and Blocking Report
Existing plus Project

PM Peak Hour

Intersection: 1: SR-120 - SR-108 & La Grange Road - CR J59

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	64	44	33	67
Average Queue (ft)	14	35	2	26
95th Queue (ft)	42	43	18	56
Link Distance (ft)	510			
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		25	75	475
Storage Blk Time (%)	8	1	0	
Queuing Penalty (veh)	8	0	0	

Intersection: 2: La Grange Road - CR J59 & SPI Employee Dwy

Movement	EB
Directions Served	LT
Maximum Queue (ft)	33
Average Queue (ft)	2
95th Queue (ft)	15
Link Distance (ft)	510
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: La Grange Road - CR J59 & SPI Truck Dwy

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	32	29
Average Queue (ft)	4	13
95th Queue (ft)	19	36
Link Distance (ft)		867
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	300	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
Existing plus Project

PM Peak Hour

Intersection: 4: La Grange Road - CR J59 & Yosemite Blvd - SR-132

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LT	LT	LT	R	LT	R
Maximum Queue (ft)	54	45	44	33	54	47
Average Queue (ft)	31	21	24	8	30	19
95th Queue (ft)	47	41	44	29	45	46
Link Distance (ft)	2630	2629	1416		2042	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				25		25
Storage Blk Time (%)			4	1	6	2
Queuing Penalty (veh)			0	0	2	1

Intersection: 5: Red Hill Road & Montezuma/SR-49 - SR-120

Movement	WB	NB	NB
Directions Served	LT	L	R
Maximum Queue (ft)	26	20	20
Average Queue (ft)	1	4	2
95th Queue (ft)	12	16	13
Link Distance (ft)	1098	1595	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			50
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Network Summary

Network wide Queuing Penalty: 12

Queuing and Blocking Report
 Opening Year (2025)

AM Peak Hour

Intersection: 1: SR-120 - SR-108 & La Grange Road - CR J59

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	64	50	66
Average Queue (ft)	20	39	32
95th Queue (ft)	53	49	62
Link Distance (ft)	510		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		25	475
Storage Blk Time (%)	8	3	
Queuing Penalty (veh)	15	1	

Intersection: 2: La Grange Road - CR J59 & SPI Employee Dwy

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 3: La Grange Road - CR J59 & SPI Truck Dwy

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	16	28
Average Queue (ft)	1	4
95th Queue (ft)	7	20
Link Distance (ft)	867	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	300	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
Opening Year (2025)

AM Peak Hour

Intersection: 4: La Grange Road - CR J59 & Yosemite Blvd - SR-132

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LT	LT	R	LT	R
Maximum Queue (ft)	34	11	55	57	37	53	45
Average Queue (ft)	21	0	29	31	10	30	16
95th Queue (ft)	39	8	45	45	34	48	43
Link Distance (ft)	2630		2629		1416		2042
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	100			25		25	
Storage Blk Time (%)				7	1	5	1
Queuing Penalty (veh)				1	1	1	1

Intersection: 5: Red Hill Road & Montezuma/SR-49 - SR-120

Movement	NB	NB
Directions Served	L	R
Maximum Queue (ft)	21	31
Average Queue (ft)	5	5
95th Queue (ft)	18	22
Link Distance (ft)	1595	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	50	
Storage Blk Time (%)	0	0
Queuing Penalty (veh)	0	0

Network Summary

Network wide Queuing Penalty: 20

Queuing and Blocking Report
 Opening Year (2025)

PM Peak Hour

Intersection: 1: SR-120 - SR-108 & La Grange Road - CR J59

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	80	47	78
Average Queue (ft)	17	35	33
95th Queue (ft)	56	45	64
Link Distance (ft)	510		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		25	475
Storage Blk Time (%)	12	1	
Queuing Penalty (veh)	13	0	

Intersection: 2: La Grange Road - CR J59 & SPI Employee Dwy

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 3: La Grange Road - CR J59 & SPI Truck Dwy

Movement	EB
Directions Served	L
Maximum Queue (ft)	21
Average Queue (ft)	1
95th Queue (ft)	10
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	300
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report
Opening Year (2025)

PM Peak Hour

Intersection: 4: La Grange Road - CR J59 & Yosemite Blvd - SR-132

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LT	LT	R	LT	R
Maximum Queue (ft)	53	11	46	40	38	59	47
Average Queue (ft)	32	0	22	26	6	33	26
95th Queue (ft)	48	8	42	42	27	53	52
Link Distance (ft)	2630		2629		1416		2042
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	100			25		25	
Storage Blk Time (%)				4	1	8	3
Queuing Penalty (veh)				0	0	3	3

Intersection: 5: Red Hill Road & Montezuma/SR-49 - SR-120

Movement	WB	NB	NB
Directions Served	LT	L	R
Maximum Queue (ft)	5	29	20
Average Queue (ft)	0	5	3
95th Queue (ft)	4	18	17
Link Distance (ft)	1098	1595	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	50		
Storage Blk Time (%)	0		
Queuing Penalty (veh)	0		

Network Summary

Network wide Queuing Penalty: 21

Queuing and Blocking Report
 Opening Year (2025) plus Project

AM Peak Hour

Intersection: 1: SR-120 - SR-108 & La Grange Road - CR J59

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	164	50	76
Average Queue (ft)	31	40	37
95th Queue (ft)	99	50	65
Link Distance (ft)	510		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		25	475
Storage Blk Time (%)	11	4	
Queuing Penalty (veh)	23	1	

Intersection: 2: La Grange Road - CR J59 & SPI Employee Dwy

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	39	38
Average Queue (ft)	4	12
95th Queue (ft)	22	35
Link Distance (ft)	510	582
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: La Grange Road - CR J59 & SPI Truck Dwy

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	28	46
Average Queue (ft)	6	17
95th Queue (ft)	24	42
Link Distance (ft)		867
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	300	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
 Opening Year (2025) plus Project

AM Peak Hour

Intersection: 4: La Grange Road - CR J59 & Yosemite Blvd - SR-132

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LT	LT	LT	R	LT	R
Maximum Queue (ft)	37	55	48	38	58	47
Average Queue (ft)	22	30	30	11	31	16
95th Queue (ft)	40	48	41	36	46	44
Link Distance (ft)	2630	2629	1416		2042	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				25		25
Storage Blk Time (%)			7	1	7	1
Queuing Penalty (veh)			1	1	2	1

Intersection: 5: Red Hill Road & Montezuma/SR-49 - SR-120

Movement	NB	NB
Directions Served	L	R
Maximum Queue (ft)	30	25
Average Queue (ft)	7	5
95th Queue (ft)	21	21
Link Distance (ft)	1595	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		50
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Network Summary

Network wide Queuing Penalty: 29

Intersection: 1: SR-120 - SR-108 & La Grange Road - CR J59

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	65	46	11	98
Average Queue (ft)	16	36	1	37
95th Queue (ft)	46	45	11	71
Link Distance (ft)	510			
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		25	75	475
Storage Blk Time (%)	12	1	0	
Queuing Penalty (veh)	16	0	0	

Intersection: 2: La Grange Road - CR J59 & SPI Employee Dwy

Movement	EB
Directions Served	LT
Maximum Queue (ft)	21
Average Queue (ft)	1
95th Queue (ft)	13
Link Distance (ft)	510
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: La Grange Road - CR J59 & SPI Truck Dwy

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	30	37
Average Queue (ft)	4	16
95th Queue (ft)	19	39
Link Distance (ft)		867
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	300	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
 Opening Year (2025) plus Project

PM Peak Hour

Intersection: 4: La Grange Road - CR J59 & Yosemite Blvd - SR-132

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LT	LT	LT	R	LT	R
Maximum Queue (ft)	65	40	39	37	63	47
Average Queue (ft)	32	23	25	8	34	26
95th Queue (ft)	50	40	42	31	54	51
Link Distance (ft)	2630	2629	1416		2042	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				25		25
Storage Blk Time (%)			4	1	8	3
Queuing Penalty (veh)			0	0	3	3

Intersection: 5: Red Hill Road & Montezuma/SR-49 - SR-120

Movement	WB	NB	NB
Directions Served	LT	L	R
Maximum Queue (ft)	27	16	20
Average Queue (ft)	1	4	2
95th Queue (ft)	12	14	15
Link Distance (ft)	1098	1595	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			50
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 23
