

**APPENDIX I**  
**TRAFFIC IMPACT ANALYSIS**

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## Memorandum

**Date:** February 25, 2022  
**To:** Rebecca Auld, Lamphier-Gregory  
**From:** Kai-Ling Kuo, Jocelyn Lee  
**Subject:** Transportation Analysis for the Proposed Stanford University Housing Project on Alpine Road in Portola Valley, California

Hexagon Transportation Consultants, Inc. has completed this transportation analysis for the proposed Stanford University Housing Project on Alpine Road in Portola Valley, California (see Figure 1). The project is located approximately 1,000 feet south of the Alpine Road/Westridge Drive intersection on the west side of Alpine Road. The proposed project comprises 27 single-family homes and 12 below-market rate (BMR) units within three buildings on an approximately 6-acre site. The project would be accessed via two full access driveways on Alpine Road (see Figure 2).

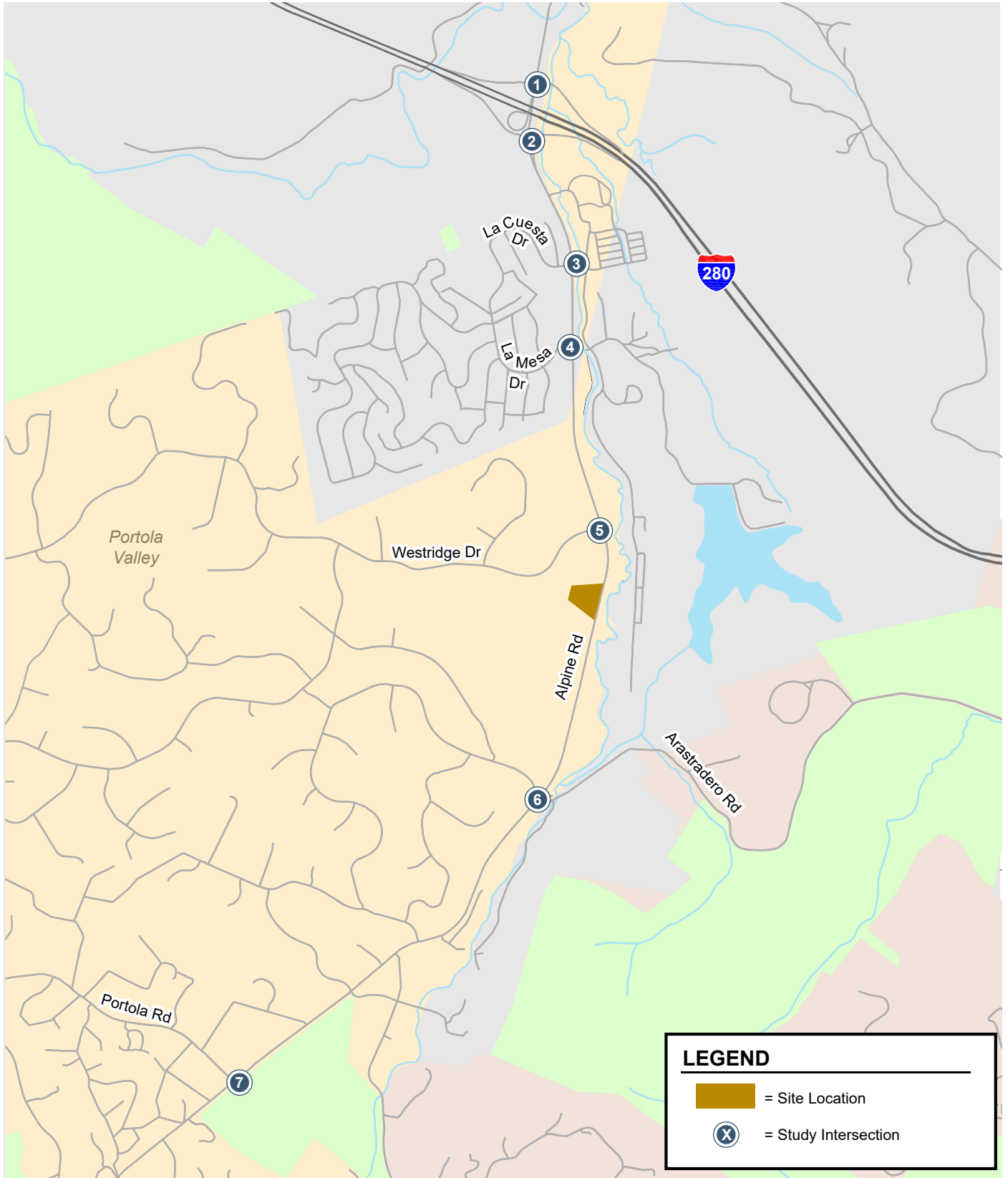
This study was conducted for the purpose of identifying the potential transportation impacts related to the proposed development and to satisfy the requirements of the California Environmental Quality Act (CEQA) and the Town of Portola Valley. Per California Senate Bill 743 (SB743) and CEQA Guidelines, the study includes a vehicle miles traveled (VMT) analysis. The study also evaluates the effects of the development on site access, circulation, pedestrian and bicycle access, and transit services, as well as the traffic operational effects of the development on the surrounding roadway network.

### Vehicle Miles Traveled (VMT) Analysis

Per California Senate Bill 743, the California Natural Resources Agency, with assistance from the Governor's Office of Planning and Research (OPR), adopted new CEQA guidelines in December 2018. The new guidelines state that automobile delay, as measured by level of service (LOS), will no longer constitute a significant environmental impact under CEQA, and that VMT is considered the most appropriate metric to evaluate a project's transportation impacts. The new guidelines became effective July 1, 2020. The legislation is intended to promote infill development, a diversity of land uses, transit, active transportation modes while reducing greenhouse gas emissions. OPR recommends the following threshold for residential projects:

*"A proposed project exceeding a level of 15 percent below existing VMT per capita may indicate a significant transportation impact. Existing VMT per capita may be measured as regional VMT per capita or a city VMT per capita."*

Lead agencies have the discretion to choose the VMT analysis methodology and to set or apply their own thresholds of significance different from OPR's guidance. Otherwise, as in Portola Valley and therefore for this project, OPR's Technical Advisory on Evaluating Transportation Impacts in CEQA (December 2018, as detailed above) can be used.



**Figure 1**  
**Site Location and Study Intersections**

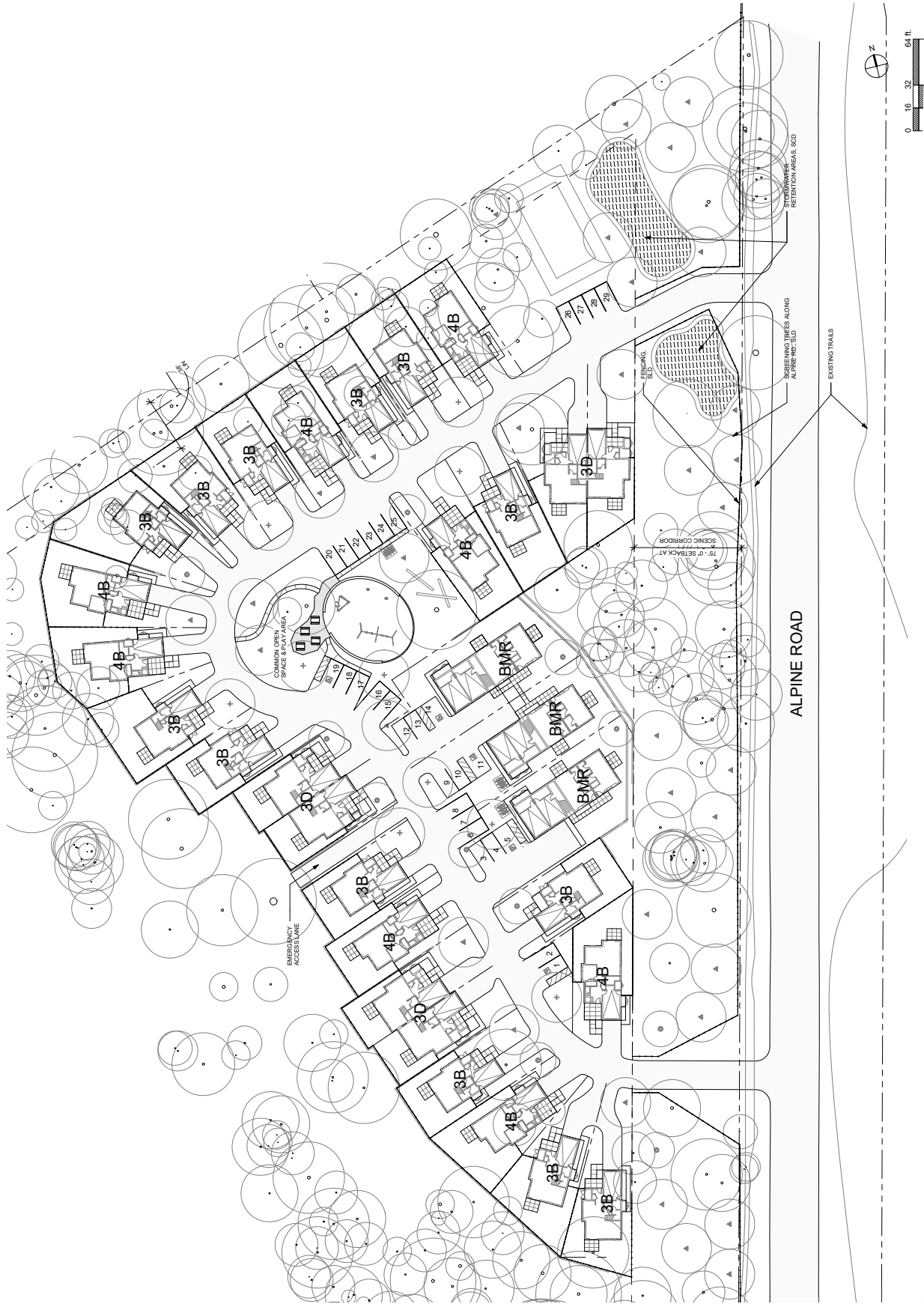


Figure 2  
Proposed Site Plan

The VMT analysis for the project was conducted by comparing the daily VMT estimated for the proposed development to the average VMT for the Town of Portola Valley. The OPR's Technical Advisory on Evaluating Transportation Impacts in CEQA states that "Existing VMT per capita may be measured as regional VMT per capita or as city VMT per capita." Therefore, the advisory allows for assessment using regional or city VMT averages. In practice, this allows for cities with high relative VMT, which is the case in Portola Valley, to use this as a mechanism to encourage reductions against their own averages. (Conversely, it also allows projects in denser/transit rich cities to show how location in those areas helps reduce regional VMT even though they may not be able to reduce much from their own city average.)

The VMT estimates for the project and the Town were obtained from the Metropolitan Transportation Commission (MTC)'s VMT database, which is estimated using the MTC travel demand forecast model for Plan Bay Area 2040. The VMT database includes the forecasted VMT for each transportation analysis zone (TAZ) in the Bay Area. The VMT database provides two types of VMT forecasts: the average daily VMT per worker based on location of work and the average daily VMT per capita based on location of residence. For the proposed residential development, the average daily VMT per capita was used. Table 1 summarizes the MTC's forecasted VMT per capita for the Town, San Mateo County, and Bay Area. All of Portola Valley and the project site is located in TAZ 298 in the MTC travel demand forecast model.

**Table 1**  
**Average Daily VMT per Capita in Portola Valley, San Mateo County, and Bay Area**

	VMT/Capita		
	Year 2020	Year 2030	Year 2040
Portola Valley (TAZ 298)	25.68	25.09	25.04
San Mateo County	16.02	15.83	15.30
SF Bay Area Average	15.00	15.01	14.59

Source: MTC's VMT forecast for Plan Bay Area 2040.

As shown in Table 1, the average VMT for residents within the Town is higher than that of the regional average.

### **VMT Estimate Methodology**

The project's VMT was estimated based on home-based trips as described in the OPR recommendations. The OPR's Technical Advisory states that the VMT thresholds "can be applied to either household (i.e., tour-based) VMT or home-based (i.e., trip-based) VMT assessments." In simple terms, tour-based analyses capture all types of trips persons make in a day, including various stops on a trip, whereas trip-based analyses focus on the primary trip (generally commuting). As excerpted above, the advisory allows for assessment using either methodology. Because it is known that some of the residents' daily primary trip would be the commute trip to Stanford University, the trip-based analysis is most appropriate for this project.

### **Population Estimates**

In order to calculate trips made by the various types of residents (faculty, non-faculty, and BMR residents), the project population needs to be determined for each type of resident, because the different types have different levels of VMT. The Town of Portola Valley Housing Element, prepared in 2015, reported persons per household based on the decennial US Census data as 2.58 in 2000 and 2.47 in 2010.

The California Department of Finance generates yearly population and housing tables, and those are the usual source for population data outside of the decennial census. As of January 1, 2020, the California Department of Finance estimated the average number of persons per household within Portola Valley as 2.58<sup>1</sup>.

Neither of these sources further break down this average by type of unit or by number of bedrooms. Inherent to any average, it will be above the population of some units and below the population of other units but should be a reasonable estimate for the project as a whole and. Therefore, the study uses the 2020 average (2.58 persons per household, which is consistent with the higher of the reported averages from the Town's Housing Element) across the entire project.

### **Project VMT Estimates**

Each single-family unit was assumed to have at least one person working at the Stanford University campus on typical weekdays, and the remaining persons were assumed to work elsewhere. All affordable housing units were assumed to not have any person working at the campus. For the single-family units, the roundtrip distance between the project site and the campus (9.5 miles) was used for those working on campus, while the 2020 VMT per capita for Portola Valley (25.68 miles) was used for the others.

As is standard practice for VMT analysis of BMR units and consistent with applicable research<sup>2</sup>, the VMT per capita for the BMR units was assumed to be 10 percent lower than the Town's average.

Total VMT generated by the site was calculated by multiplying the total persons by the VMT per capita of each category then dividing the total VMT by the total population of the site.

As previously discussed, OPR recommends a threshold of 15 percent below the existing VMT per capita for residential projects, which equates to 21.83. As shown in Table 2 below, the average VMT for the project was calculated to be 20.57 VMT per capita, which is more than 15 percent below the Portola Valley average VMT. Thus, the project is expected to have a less-than-significant transportation impact.

Additional requirements for BMR units that would prioritize local workers or existing Portola Valley residents were being considered by the Town during preparation of this report. While such potential requirements have not been taken into account in this analysis, the results would be the same or improved from that reported here if they were implemented.

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<sup>1</sup> State of California, Department of Finance, May 2020, E-5 Population and Housing Estimates for Cities, Counties and the State, January 1, 2011-2020, 2019 Persons per Household for Portola Valley.

<sup>2</sup> Income, Location Efficiency, and VMT: Affordable Housing as a Climate Strategy paper published by Gregory L. Newmark, Ph.D and Meter M. Haas Ph.D from the Center for Neighborhood Technology in December 2015.



**Table 2**  
**Project VMT Estimate**

Land Use	Number of Units	Persons per Household	Total Persons	Daily VMT per Capita	Total Daily VMT	Daily VMT per Capita Assumption
Stanford Housing	27	2.58				
-To Stanford <sup>1</sup>		1.00	27	9.50	256.50	Round trip distance between the site and Stanford Campus Year 2020 VMT per capita for Portola Valley
-Non Stanford		1.58	43	25.68	1,104.24	
Affordable Housing	12	2.58	31	23.11	716.47	10% lower than the Town average, according to research <sup>2</sup>
<i>Total</i>	<i>39</i>		<i>101</i>		<i>2,077.21</i>	
<b>Average VMT for the Site</b>				<b>20.57</b>		
Year 2020 VMT per capita for Portola Valley				25.68		
<b>VMT Threshold (15% below Portola Valley Average VMT)</b>				<b>21.83</b>		
<u>Notes:</u>						
1. Each Stanford unit was assumed to have at least one person working at the campus on typical weekdays.						
2. Income, Location Efficiency, and VMT: Affordable Housing as a Climate Strategy, by Gregory L. Newmark, Ph.D and Meter M. Haas Ph.D from the Center for Neighborhood Technology, December 2015.						

## Existing Transportation Conditions

### Roadway Network

Regional access to the project site is provided by Interstate 280 (I-280). Local access to the project site is provided via Alpine Road, Portola Road, Westridge Drive, and Arastradero Road.

**I-280** is an eight-lane freeway in the vicinity of the site. I-280 extends northward through San Francisco and southward to US 101 in San Jose. East of US 101, it makes a transition into I-680 to Oakland. Access to and from the site is provided via a full interchange at Alpine Road.

**Alpine Road** is a north-south two-lane road that transitions from Santa Cruz Avenue at Junipero Serra Boulevard in the north and transitions into Ciervos Street in the south. It serves as an arterial from Junipero Serra Boulevard to Portola Road in the project vicinity. Striped shoulders exist along both sides of Alpine Road, between Corte Madera Road and Junipero Serra Boulevard. A pedestrian/equestrian trail exists along the east side of the street near the project site. On-street parking is prohibited along the project frontage on the west side of the street. The speed limit ranges from 35 miles per hour (mph) to 40 mph. Alpine Road provides direct access to the site.

**Portola Road** is a two-lane arterial that mainly runs in a north-south direction from Alpine Road in the south to Mountain Home Road in the north, where it transitions into Sand Hill Road. Striped shoulders exist along both sides of the street. A pedestrian/equestrian trail exists along one side of the street. On-street parking is prohibited. The speed limit is 35 mph. Portola Road provides access to the project via its intersection with Alpine Road.

**Westridge Drive** is an east-west two-lane major collector from Portola Road in the west to Alpine Road in the east. A pedestrian/equestrian trail exists along the north side of the street. On-street



parking is prohibited along both sides of the street. The speed limit is 30 mph. Westridge Drive provides access to the project via its intersection with Alpine Road.

**Arastradero Road** is an east-west two-lane road from Alpine Road in the west to Page Mill Road in the east. A bike route is designated between Alpine Road and Tracy Court in the City of Palo Alto, where it transitions into bike lanes along both sides of the street for the rest of the street. On-street parking is prohibited along both sides of the street. The speed limit is 35 mph. Arastradero Road provides access to the project via its intersection with Alpine Road.

### **Pedestrian and Equestrian Facilities**

Pedestrian facilities consist of trails and crosswalks in the project vicinity. A paved pedestrian trail exists on the east side of Alpine Road, and an unpaved pedestrian/equestrian trail exists on the west side of Alpine Road. Pedestrian/equestrian trails also exist along one side of Portola Road and the north side of Westridge Drive. Crosswalks are present along all of the study area roadways at unsignalized study intersections. Crosswalks are present crossing Alpine Road at La Cuesta Drive, La Mesa Drive, and Portola Road. Crosswalks are also present along the east leg of the Alpine Road and Arastradero Road intersection and along the west leg of the Alpine Road/Portola Road intersection.

### **Bicycle Facilities**

Although the Town has not designated any bicycle facilities on its roadways, bicycle usage is allowed on Town roadways. Within one mile of the project site, striped shoulders on Alpine Road and Portola Road are commonly used by cyclists as bike lanes. Arastradero Road is mostly within the City of Palo Alto, where it is a designated bike route marked with painted shared lane markings (sharrows) on the roadway.

### **Transit Services**

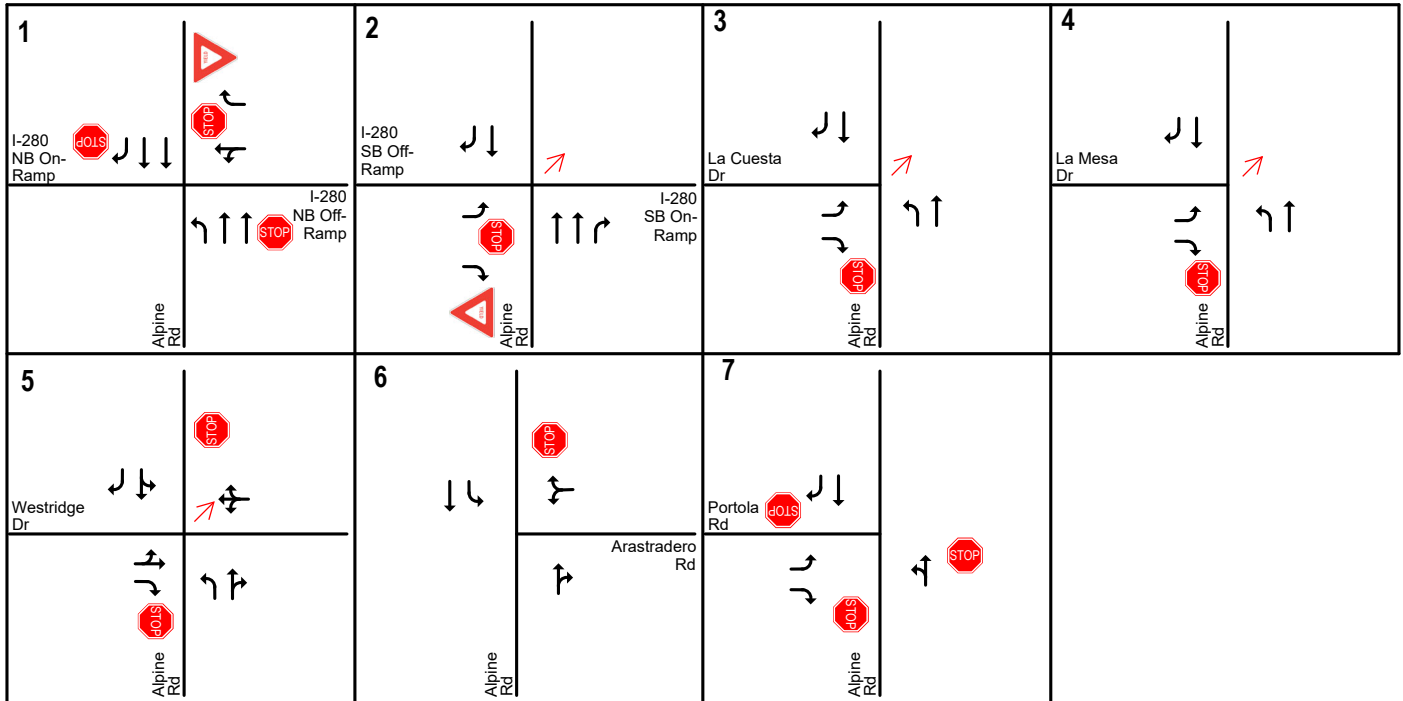
Existing public transit services in the study area are provided by the San Mateo County Transit District (SamTrans). SamTrans operates bus services in San Mateo County. SamTrans Routes 87 and 286 ran along Alpine Road prior to April 2020. Due to Covid-19 and shelter-in-place orders, both routes have been temporarily suspended within the project vicinity. The nearest bus stop was located on Westridge Drive at Alpine Road, approximately 1,000 feet from the project site, and was served by both Routes 87 and 286 on school days, during school start and end hours.

Stanford University provides free Marguerite shuttles between the campus and various points of interest near the campus. The shuttle route with a stop closest to the site is the SLAC route that operates on weekdays. The nearest stop is located on Sand Hill Road at Sharon Park Drive, approximately 2.8 miles from the project site.

### **Existing Lane Configurations and Traffic Volumes**

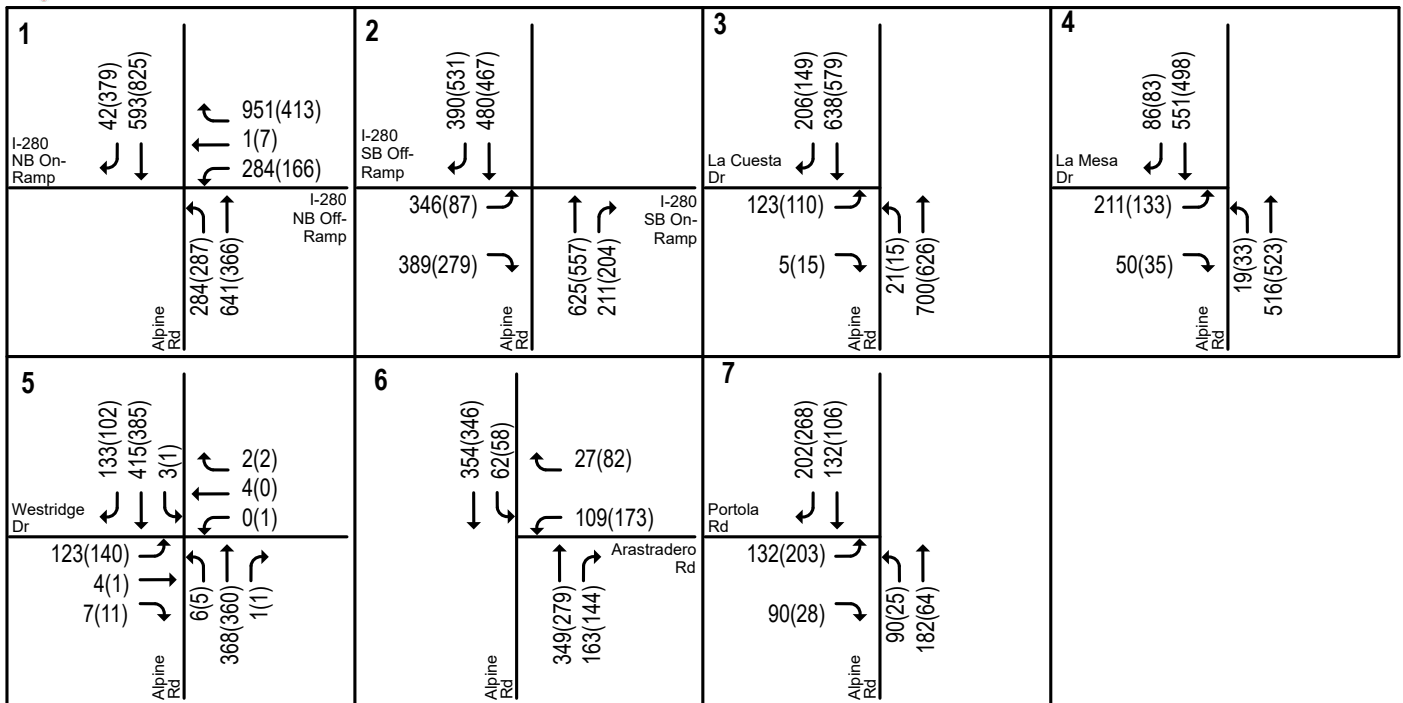
The existing lane configurations at the study intersections were obtained from Google Earth. Existing AM and PM peak-hour traffic volumes (see Figure 3) were obtained from new traffic count data, collected in November 2019 (see Appendix A).

The Alpine Road/I-280 northbound ramps intersection has an all-way stop sign, but the westbound right-turn movement from the off-ramp to Alpine Road and the southbound right-turn movement from Alpine Road to the on-ramp are not stop-controlled. The westbound right-turn movement from the off-ramp to Alpine Road has a yield sign and a yield to pedestrians sign at the crosswalk. The southbound right-turn movement from Alpine Road to the on-ramp has a yield to pedestrians sign



LEGEND

- = Stop Sign
- = Yield Sign
- = Left-turn Refuge



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

**Figure 3**  
Existing Intersection Lane Configurations and Traffic Volumes

at the crosswalk. At the Alpine Road/I-280 southbound ramps intersection, only the southbound off-ramp left turn has stop control. The other movements are uncontrolled. There are left-turn refuges for left turns from the I-280 southbound off-ramp, from La Cuesta Drive, from La Mesa Drive, and from Westridge Road onto northbound Alpine Road.

## Project Trip Estimates

The magnitude of traffic produced by a new development and the locations where that traffic would appear were estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In determining project trip generation, the magnitude of traffic traveling to and from the proposed residential development was estimated for the AM and PM peak hours. As part of the project trip distribution, the directions to and from which the project trips would travel were estimated. In the project trip assignment, the project trips were assigned to specific streets and intersections. These procedures are described below.

### Trip Generation

Through empirical research, data have been collected that quantify the estimated amount of traffic produced by many types of land uses. The data are published in the Institute of Transportation Engineers’ (ITE) manual entitled *Trip Generation, 10th Edition* (2017). The magnitude of traffic added to the roadway system by a particular development is estimated by multiplying the applicable trip generation rates by the size of the development. The rates published for Single-Family Housing (Land Use 210) and Multi-Family Housing (Low-Rise) (Land Use 220) were used to estimate the trips generated by the proposed project. The ITE Trip Generation Manual describes low-rise multi-family housing as residential buildings with one or two floors. The BMR buildings consists of 2 floors each. The project is estimated to generate 26 trips during the AM peak hour (6 in and 20 out), and 34 trips during the PM peak hour (21 in and 13 out) (see Table 3).

**Table 3  
Trip Generation Estimates**

Land Use	Size	Daily		AM Peak Hour			PM Peak Hour				
		Trip Rate	Trips	Trip Rate	In	Out	Total	Trip Rate	In	Out	Total
Single-Family Housing <sup>1</sup>	27 du	9.44	255	0.74	5	15	20	0.99	17	10	27
Multi-Family Housing <sup>2</sup>	12 du	7.32	88	0.46	1	5	6	0.56	4	3	7
<b>Net Project Trips</b>			<b>343</b>		<b>6</b>	<b>20</b>	<b>26</b>		<b>21</b>	<b>13</b>	<b>34</b>

**Notes:**

All trip rates (in trips per dwelling unit) are from ITE Trip Generation Manual, 10th Edition, 2017.

1. Single-family detached housing (ITE Land use 210): average trip rates were used.
2. Low-rise multifamily housing (ITE Land use 220): average trip rates were used.

### Trip Distribution and Assignment

The trip distribution pattern for the project was estimated based on existing travel patterns in the study area, the locations of complementary land uses, a majority of the residential units that would be leased to Stanford faculty (see Figure 4). The trip distribution pattern for the project was estimated based on the existing travel patterns on the surrounding roadway system and based on the fact that a majority of the residential units would be leased to Stanford faculty. According to the project description, the single-family homes (27 of 39 total units) would be leased to Stanford faculty. Therefore, it was assumed that 40 percent of the project trips would be destined to the

Stanford campus and the surrounding area. It was assumed that 40 percent of the project trips would travel to other job sites/destinations via I-280, and 10 percent of the project trips would access I-280 (to the south) or other businesses on Page Mill Road via Arastradero Road. It was also assumed that 10 percent of the project trips would travel to the south on Alpine Road and Portola Road to reflect some local trips, such as school trips or trips to the town center.

The peak-hour trips generated by the project were assigned to the roadway system based on the trip distribution pattern, directions of approach and departure, the roadway network connections, and the location of project driveway (see Figure 4).

## Site Access and Circulation

The project's site access and circulation were evaluated in accordance with generally accepted traffic engineering standards based on the project plan (see Figure 2), dated July 14, 2020. The project would provide two new full access driveways on Alpine Road. Within the site, a two-way internal road would be provided to access the private garages and surface parking spaces. For the single-family homes, parking would be provided within each attached one car garage and on the driveway to each single-family home. For the BMR housing units, parking would be provided within private garages and surface parking spaces in various locations on site.

### Vehicle Site Access

#### Project Driveway Design

The proposed driveways on Alpine Road measure 20 feet in width, which meets the Town's maximum of 20 feet for driveways entering a road.

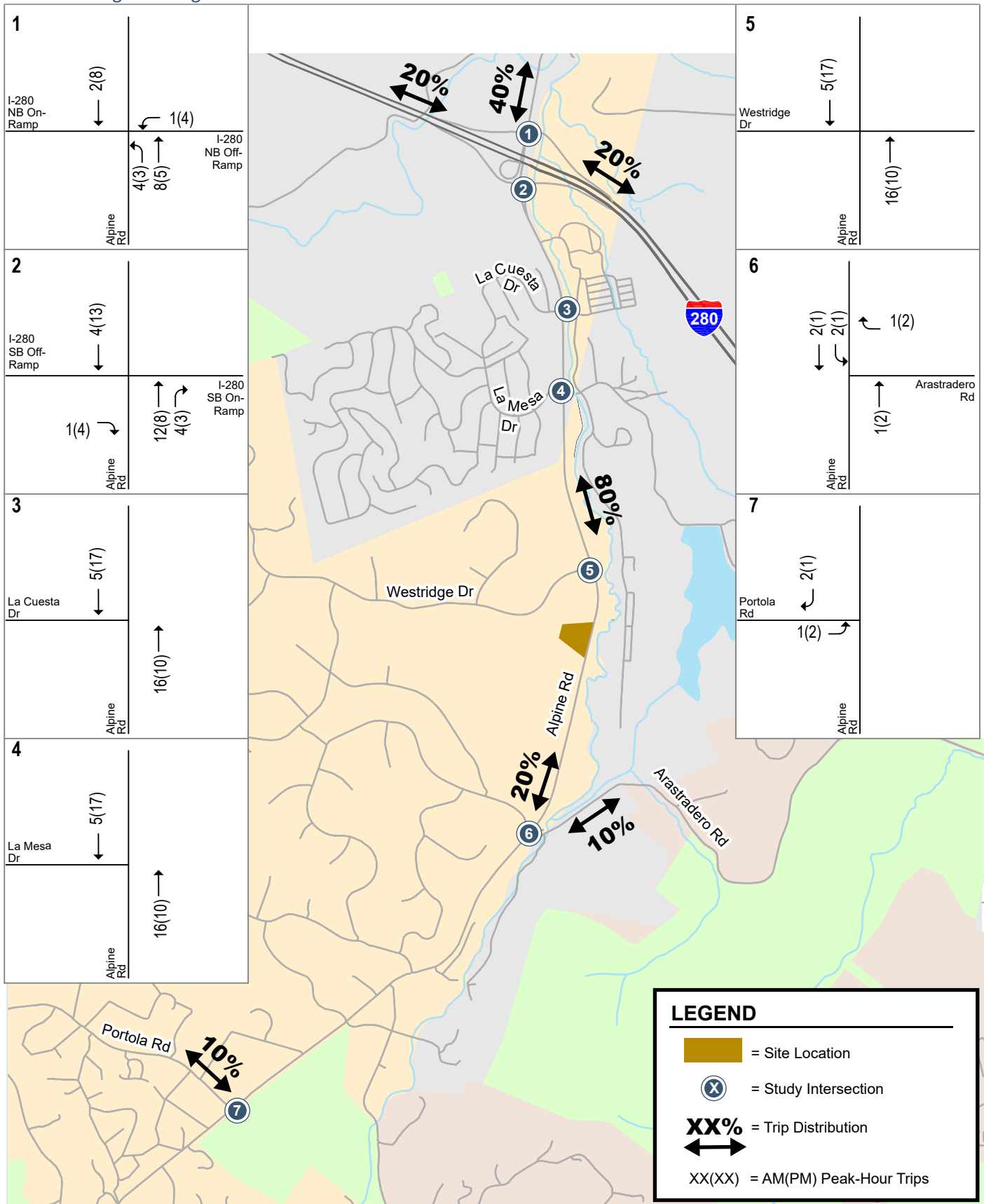
#### Sight Distance at Project Driveways

The proposed driveway locations were evaluated to determine if the sight distance at the driveways would be adequate. Adequate sight distance reduces the likelihood of a collision at driveways and provides drivers with the ability to locate sufficient gaps in traffic to exit a driveway. Sight distance of a driveway is evaluated based on the stopping sight distance recommended by Caltrans for a given design speed.

Alpine Road has a speed limit of 40 mph near the project driveways. The Caltrans stopping sight distance is 350 feet (based on a design speed of 45 mph). Thus, a driver must be able to see 350 feet in both directions of Alpine Road to locate a sufficient gap to turn out of the driveway. Both driveways have a sight distance of greater than 350 feet when looking in both directions. Therefore, the sight distance is adequate. The two driveways would be approximately 550 feet apart.

The project would provide adequate sight distance at the driveways with low-level landscaping to ensure that exiting drivers would be able to see any pedestrians on the trail along the project frontage as well as oncoming vehicles. According to the site plan, the landscape plan shows street trees would be added along the project frontage. Note that street trees have a high canopy and would not obstruct the view of drivers exiting the project driveways, and the trees would not be placed within the sight triangles of the driveways. The project would also install split rail fencing along the project frontage. Split rail fencing enables pedestrians on the trail and outbound vehicles to see each other when approaching the driveway. Thus, the landscaping features shown on the site plan are not expected to obstruct the vision of exiting drivers.

Stanford Wedge Housing



**Figure 4**  
**Trip Distribution Pattern and Project Trip Assignment**

### **Project Driveway Operations**

As shown in Table 3, the project is expected to generate 6 inbound and 20 outbound trips during the AM peak hour and 21 inbound and 13 outbound trips during the PM peak hour between the two driveways. Most of inbound trips would make southbound right turns, with 4 trips making northbound left turns into the site. The estimated 4 trips turning from northbound Alpine Road into the site calculates to approximately one inbound vehicle every 30 minutes between the two driveways. Therefore, no operational issues related to vehicle queueing and/or vehicle delay are expected to occur on Alpine Road at the driveways. Some minor on-site vehicle queuing could occur due to a combination of the inherent unpredictability of vehicle arrivals at the driveway and the random occurrence of gaps in traffic along Alpine Road. However, given the estimated 20 outbound trips in the AM peak hour between the two driveways, which calculates to about one outbound trip every 6 minutes, the probability of two or more outbound vehicles exiting the site at the same time from the same driveway would likely be low. The maximum queue is not expected to affect the on-site circulation. Additionally, vehicles turning right into the project site from Alpine Road may momentarily affect the southbound traffic flow due to vehicles slowing down to turn into the driveway, but this would not have an adverse effect on traffic operations.

### **On-Site Circulation**

Within the site, a two-way internal road would be provided to access the private garages and surface parking spaces. The internal road would range from 20 feet to 27 feet wide. The pavement width meets the minimum pavement width of 20 feet for residential service streets and fire access roads, according to the Portola Valley Municipal Code and the Woodside Fire Protection Department Fire Code. The project would provide 90-degree street parking spaces in five areas along the internal road. The roadway width would be 27 feet where street parking is provided, and the drive aisles to the BMR parking spaces would be 25 to 28 feet wide, both of which meet the Town's requirement of 25-foot aisles where surface parking is directly accessed. The project would provide 90-degree uniform parking stalls within the site. As discussed under Parking below, the street parking spaces would be for both residents and guests.

### **Passenger Loading**

The project does not propose any specific passenger loading area on-site for residents. However, it is presumed that loading could occur on the internal road, as the project traffic is expected to be very low.

### **Bike and Pedestrian On-Site Circulation**

The site plan provides some pedestrian paths within the common open area space and play area, but there are no sidewalks along the internal road or pedestrian paths leading to the common area. Due to the low traffic volume and speed within the internal neighborhood, it is presumed that bicyclists would be able to safely utilize the internal road.

### **Truck Access and Circulation**

Emergency response vehicles and garbage collection vehicles would access the project site from the internal road. It is presumed that trash bins would be wheeled out to the internal road for garbage truck pickup. Per the project description, vehicle parking on the internal road will be prohibited, which should be enforced by the HOA to ensure that access and circulation for emergency response vehicles is not obstructed by parked vehicles. The project should install signage along the internal road to indicate no parking at any time.



## Potential Effects on Pedestrians, Bicycles, and Transit Facilities

### Pedestrian Facilities

Pedestrian facilities in the study area consist of trails and crosswalks. A paved pedestrian trail exists on the east side of Alpine Road, and an unpaved pedestrian/equestrian trail exists on the west side of Alpine Road. Pedestrian/equestrian trails also exist along one side of Portola Road and the north side of Westridge Drive. Within a typical walking distance (a half mile or 10 minutes), continuous pedestrian facilities are present between the site and the bus stops in the area. The project proposes to construct a new loop trail within its property to the south of the housing development site. The trail would be accessible to the general public and would connect to the existing trail that runs on the west side of Alpine Road at two separate locations. The trail would be near to the location of the planned trails shown in the Trails and Paths Element of the Town's General Plan. The project would also improve the existing dirt trail along the frontage of the entire property. Both the new loop trail and the existing trails along Alpine Road would have a minimum six-foot width with all-weather compacted base-rock surface.

### Bicycle Facilities

Although the Town has not designated any bicycle facilities on its roadways, the striped shoulders on Alpine Road and Portola Road are commonly used by cyclists as bike lanes. Cyclists riding on Alpine Road can connect to the bike lanes on Junipero Serra Boulevard and Sand Hill Road to Stanford University. The small number of vehicle trips added by the project is not expected to substantially impact bicycle travel on Alpine Road or the surrounding roadways.

### Transit Services

The project site was served by SamTrans Routes 87 and 286 with the bus stops approximately 1,000 feet from the project site. Due to Covid-19 and shelter-in-place orders, both routes have been suspended within the project vicinity. Regardless, the project is expected to create minimal, if any, transit ridership given that Routes 87 and 286 only provide a few busses per day near the project site. Any increase in riders is expected to be accommodated by the bus routes when services return to pre-Covid conditions.

The project would not remove any transit facilities, nor would it conflict with any adopted plans or policies associated with new transit facilities.

### Pedestrian and Bicycle Access to Schools

The Town of Portola Valley has two public schools and two private schools within Town limits. The Town's public schools include Omondale School for grades Kindergarten through 3 and Corte Madera School for grades 4 through 8. Both schools are located two or more miles away from the project site. The Town's private schools include Woodland School for grades preschool to 8, approximately 1.2 miles north of the project site, and Woodside Priory for grades 6 to 12, approximately 3.1 miles southwest of the project site. Some older students at Woodland School may ride their bikes, using the striped shoulders on Alpine Road and the trail behind the plaza north of La Mesa Drive. The distances to the other schools are longer than typical walking (one mile) or bike distance (3 miles) for students. Thus, it is likely that most students would be driven to school, rather than walk or bike.

### Access to Stanford University

The project site is located approximately 4 miles southwest of Stanford University. Bicyclists could utilize Alpine Road and Junipero Serra Boulevard to access Stanford University. Currently, the



Stanford University Marguerite Shuttle does not provide any shuttle lines along Alpine Road. Although new residents could utilize SamTrans Routes 87 or 286 when bus services return to pre-Covid conditions to access the Marguerite Shuttle Line S, Routes 87 and 286 only provide a few busses per day during school operational hours.

To reduce vehicle trips and promote alternative transportation, Stanford University has a transportation demand management (TDM) program that offers various programs to eligible university employees. Although the Stanford University Marguerite Shuttle does not provide service along Alpine Road, future residents who wish to commute to the University using alternative transportation modes could utilize the following programs/resources:

- Free transit passes for eligible university employees.
- Free parking passes and reserved spaces for employees who commute by carpool or vanpool.
- Commute Club – an incentive program that offers various rewards and services for alternative transportation commuters, including vanpool subsidies, emergency ride home, free rental car vouchers, and Zipcar driving credit. The Commute Club was suspended in April 2020 due to the COVID-19 pandemic and many employees continue to work remotely on a part-time or full-time basis.
- Zipcar fleet on Campus with discounted rates.
- Discounted rates on rental cars.
- Ridematching services.

## Potential Effects on Pedestrian/Equestrian Trails

In the project vicinity, an unpaved pedestrian/equestrian trail runs on the west side of Alpine Road along the project frontage, and a paved pedestrian trail exists on the east side of Alpine Road. Pedestrian/equestrian trails also exist along one side of Portola Road and the north side of Westridge Drive. It is expected that the project would generate some pedestrian/equestrian trips, which could utilize these trails. However, the increase in trail usage is not expected to degrade the quality of these trails because of the small number of pedestrian/equestrian trips that would be generated by the project.

The project proposes to construct a new loop trail within its property to the south of the housing development site. The trail would be accessible to the general public and would connect to the existing trail that runs on the west side of Alpine Road at two locations. The project would also improve the existing dirt trail along the frontage of the entire property. Both the new loop trail and the existing trails along Alpine Road would have a minimum six-foot width with all-weather compacted base-rock surface. Therefore, the new loop trail and improvement to the existing trail would increase the capacity and quality of the Town's trail system.

The project would have two driveways crossing the pedestrian/equestrian trail that runs along its frontage. As discussed above under Sight Distance at Project Driveways, the project would provide adequate sight distance at the driveways with low-level landscaping to ensure a clear line of sight between exiting drivers and pedestrians/horses on the trail. The project would install split rail fencing along the project frontage. Split rail fencing enables pedestrians/equestrians on the trail and outbound vehicles to see each other when approaching the driveway. Therefore, the project is not expected to adversely affect the safety of trail users. Because the number of pedestrians/horses traveling on the trail is relatively low and the project traffic on the driveways would also be low, the chance of the pedestrians/horses and the project traffic arriving at the

crossing simultaneously is expected to be small. Regardless, any increase in vehicle access points along the trail would increase the potential for conflict between pedestrians/equestrians and is considered a potential safety impact. Therefore, to mitigation the safety impact, the project should install a sign at the driveways “STOP HERE LOOK FOR TRAIL USERS STOP AGAIN AT ROAD” for outbound traffic approaching the trail to alert the exiting drivers of the presence of pedestrians/horses.

## Parking

### Vehicle Parking

Because the project proposes 12 BMR units, according to State of California Density Bonus Law (Government Code section 65915(p)), for a development that meets the density bonus requirements, a city, county, or city and county shall not require a vehicular parking ratio, inclusive of handicapped and guest parking, that exceeds the following ratios:

- 1 on-site space for each studio or one-bedroom unit
- 1.5 on-site spaces for each dwelling with two or three bedrooms
- 2.5 on-site spaces for each dwelling with four or more bedrooms

The single-family homes would consist of 19 three-bedroom units and 8 four-bedroom units, which require a total of 49 spaces. Each BMR building consists of 2 studio units, one one-bedroom unit, and one two-bedroom unit, which requires 5 spaces for each building. The three BMR buildings would require 15 spaces. The project would require a total of 64 residential parking spaces.

The site plan shows all single-family homes would be provided one garage parking space and one driveway space. Each BMR building would provide two garage parking spaces and three adjacent surface parking spaces. There would be an additional 20 street surface parking spaces for use by visitors. In total, the project would provide 89 parking spaces (33 spaces in garages, 27 spaces on single-family home driveways, 9 spaces in multi-family lots, and 20 street surface parking spaces). The project meets the Density Bonus Law required number of parking spaces, and parking on site would be adequate. The 20 street parking spaces could be used by both residents and guests. Based on typical guest parking requirements in other cities, it is recommended that the project designate 8 spaces for guest parking, which would be monitored by the HOA.

The project would install electric vehicle charging infrastructure to facilitate future installation and use of electric vehicle chargers at all the single-family units, which meets the requirement of the California Green Building Standards Code (Section 4.106.4).

### Bicycle Parking

The Town does not require developments to provide bicycle parking. However, the site plan shows that each garage would provide wall-hung bike racks for two bicycles (long-term spaces) and 9 bicycle racks (short term spaces) for 18 bicycles around the site. Six of the bicycle parking spaces located in front of BMR Building B would be reserved for the BMR units, while the rest would be for guests.

## On-Street Parking on Alpine Road

According to the General Plan Circulation Element Section 3105.9, on-road parking should be discouraged. The General Plan Alpine Scenic Corridor Plan Section 6211.8 also states that on-street parking should be limited to the maximum extent possible. On-street parking is prohibited

along the project frontage on the west sides of the street with signs to indicate no parking at any time. However, on-street parking on the east side of the street is not prohibited.

The project would provide more on-site parking spaces than the requirement by 16 spaces. Therefore, parking demand is expected to be accommodated within the site.

## Non-CEQA Traffic Operations Analysis

### Scope of Analysis

The potential traffic operations effects of the project were evaluated in accordance with the standards set forth by the Town of Portola Valley and the San Mateo City/County Association of Governments (C/CAG) of San Mateo County. C/CAG is a Joint Powers Authority that plans, funds, and delivers transportation programs and projects in San Mateo County. C/CAG administers the San Mateo County Congestion Management Program (CMP).

The study analyzes the traffic effects of the project on the key intersections in the vicinity of the site during the weekday AM and PM peak hours of commute traffic. An analysis of site access and on-site circulation, parking, and transit, bicycle, and pedestrian access is also included. Given that the project is expected to add fewer than 100 peak hour trips, a C/CAG trip reduction analysis was not prepared.

Traffic conditions were evaluated for the following seven unsignalized intersections in the vicinity of the project site (see Figure 1). Four intersections are within the County of San Mateo, and three are in Portola Valley.

#### County of San Mateo:

1. Alpine Road and I-280 Northbound Ramps
2. Alpine Road and I-280 Southbound Ramps
3. Alpine Road and La Cuesta Drive
4. Alpine Road and La Mesa Drive

#### Town of Portola Valley:

5. Alpine Road and Westridge Road
6. Alpine Road and Arastradero Road
7. Alpine Road and Portola Road

Traffic conditions at the study intersections were analyzed for the weekday AM and PM peak hours of adjacent street traffic. The AM peak hour typically occurs between 7:00 AM and 9:00 AM and the PM peak hour typically occurs between 4:00 PM and 6:00 PM on a regular weekday. It is during these periods that the most congested traffic conditions occur on the roadways. Traffic operations on weekends were not analyzed because traffic on the surrounding streets is less congested; the analysis of traffic conditions during the peak commute hours on weekdays represents the busiest conditions.

Intersection traffic conditions were evaluated for the following scenarios:

- **Existing Conditions.** Existing AM and PM peak-hour traffic volumes were obtained from new turning-movement counts conducted in November 2019, prior to Covid-19 and shelter-in-place orders (included in Appendix A). The study intersections were evaluated with a level of service analysis using Synchro software in accordance with the *2000 Highway Capacity Manual* methodology.

- **Existing Plus Project Conditions.** Existing traffic volumes with the project were estimated by adding to existing traffic volumes the additional traffic generated by the project. Existing plus project conditions were evaluated relative to existing conditions in order to determine the effects the project would have on the existing roadway network.

Traffic conditions typically are also evaluated for cumulative conditions for developments that would generate a substantial number of new trips. The project would generate a small number of new trips on the surrounding roadways amounting to less than a total of 50 trips during the peak hours. Additionally, approved and pending developments in the Town are not expected to add a notable number of trips to the study intersections that would substantially degrade operations. Therefore, it was determined that a cumulative scenario would not contribute additional relevant information to this analysis and was therefore not evaluated.

## Methodology

This section presents the methods used to determine traffic conditions at the study intersections and the traffic effects of the project. It includes descriptions of the data requirements, the analysis methodologies, and the applicable level of service standards.

### Data Requirements

The data required for the analysis were obtained from traffic counts and Google Earth. The following data were collected from these sources:

- Peak hour intersection turning-movement volumes and
- Lane configurations

### Intersection Level of Service Analysis Methodology

Traffic conditions at the study intersections were evaluated using level of service (LOS). Level of service is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays.

Level of service analysis at unsignalized intersections is generally used to determine the need for modification in the type of intersection control (i.e., all-way stop or signalization). As part of the evaluation, traffic volumes, and delays are evaluated to determine if the existing intersection control is appropriate.

For unsignalized intersections, level of service depends on the average delay experienced by vehicles on the stop-controlled approaches. Thus, for all-way stop controlled intersections, level of service is determined by the average delay for all movements through the intersection. For side street stop-controlled intersections (two-way or T-intersections), operations are defined by the average control delay experienced by vehicles entering the intersection from the stop-controlled approaches on minor streets or from left-turn approaches on major streets. For side street stop-controlled intersections, the level of service is reported based on the average delay for the worst approach. The level of service definitions for unsignalized intersections is shown in Table 4. This study utilizes Synchro software to determine intersection levels of service based on the 2000 HCM methodology for unsignalized intersection.

**Table 4**  
**Unsignalized Intersection Level of Service Definitions Based on Average Delay**

Level of Service	Description	Average Delay Per Vehicle (Sec.)
A	Little or no traffic delay	10.0 or less
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	Extreme traffic delays	greater than 50.0

Source: Transportation Research Board, *2000 Highway Capacity Manual* (Washington, D.C., 2000) p17-2.

### **Intersection Level of Service Standards**

The Town of Portola Valley and the County of San Mateo do not have an adopted level of service standard for unsignalized intersections. However, LOS D is typically considered acceptable for operational conditions.

### **Existing Intersection Levels of Service**

The results of the Intersection levels of service (see Table 5) show that all study intersections operate at an acceptable level of service during both the AM and PM peak hours. The intersection level of service calculation sheets are included in Appendix B.

**Table 5**  
**Existing Intersection Level of Service Summary**

#	Intersection	Control <sup>1</sup>	Peak Hour	Count Date	Avg. Delay (sec)	LOS
1	Alpine Road & I-280 NB Ramps	AWSC	AM	11/21/2019	19.4	C
			PM	11/21/2019	17.8	C
2	Alpine Road & I-280 SB Ramps	TWSC	AM	11/21/2019	33.5	D
			PM	11/21/2019	14.2	B
3	Alpine Road & La Cuesta Drive	TWSC	AM	11/21/2019	25.3	D
			PM	11/21/2019	20.2	C
4	Alpine Road & La Mesa Drive	TWSC	AM	11/21/2019	24.8	C
			PM	11/21/2019	18.5	C
5	Alpine Road & Westridge Drive	TWSC	AM	11/21/2019	25.3	D
			PM	11/21/2019	23.7	C
6	Alpine Road & Arastradero Road	TWSC	AM	11/21/2019	24.2	C
			PM	11/21/2019	29.0	D
7	Alpine Road & Portola Road	AWSC	AM	11/21/2019	10.6	B
			PM	11/21/2019	10.2	B

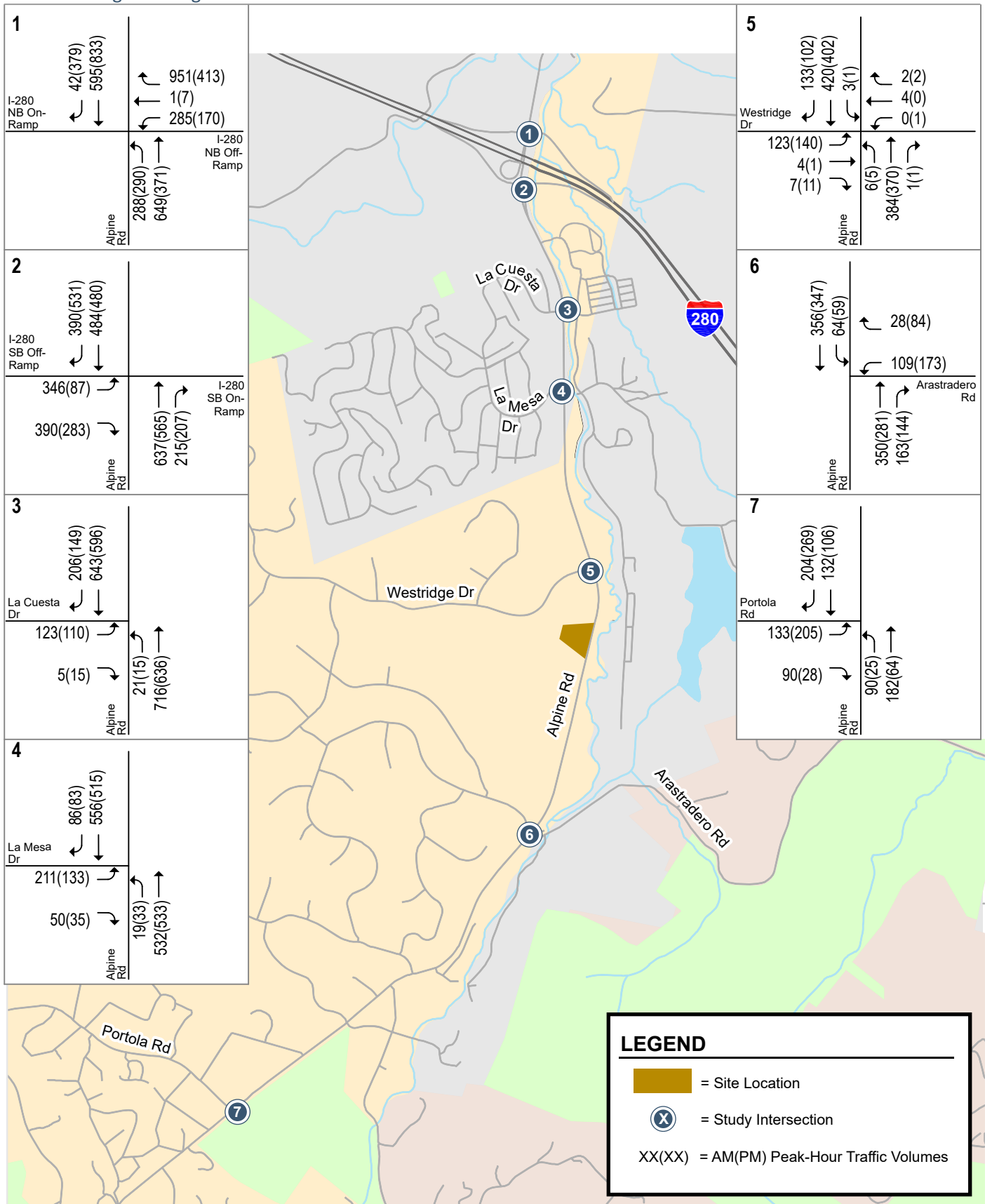
Notes:  
 AWSC = all-way stop control, TWSC = two-way stop control  
<sup>1</sup> Average delay for the worst stop-controlled approach is reported for TWSC intersections.

### Existing Plus Project Intersection volumes and Levels of Service

Project trips, as represented in the above project trip assignment (Figure 4), were added to existing traffic volumes to obtain existing plus project traffic volumes (see Figure 5).

The results of the intersection level of service analysis (see Table 6) show all study intersections would continue to operate at an acceptable level of service during both the AM and PM peak hours. The intersection level of service calculation sheets are included in Appendix B.

Stanford Wedge Housing



**Figure 5**  
Existing Plus Project Traffic Volumes



**Table 6**  
**Existing Plus Project Intersection Levels of Service**

#	Intersection	Control <sup>1</sup>	Peak Hour	No Project		With Project	
				Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS
1	Alpine Road & I-280 NB Ramps	AWSC	AM	19.4	C	19.7	C
			PM	17.8	C	18.3	C
2	Alpine Road & I-280 SB Ramps	TWSC	AM	33.5	D	34.1	D
			PM	14.2	B	14.4	C
3	Alpine Road & La Cuesta Drive	TWSC	AM	25.3	D	25.8	D
			PM	20.2	C	20.6	C
4	Alpine Road & La Mesa Drive	TWSC	AM	24.8	C	25.4	D
			PM	18.5	C	18.9	C
5	Alpine Road & Westridge Drive	TWSC	AM	25.3	D	26.4	D
			PM	23.7	C	25.1	D
6	Alpine Road & Arastradero Road	TWSC	AM	24.2	C	24.4	C
			PM	29.0	D	29.4	D
7	Alpine Road & Portola Road	AWSC	AM	10.6	B	10.6	B
			PM	10.2	B	10.2	B

Notes:  
 AWSC = all-way stop control, TWSC = two-way stop control  
<sup>1</sup> Average delay for the worst stop-controlled approach is reported for TWSC intersections.

## Conclusions

This study includes a VMT analysis and a traffic operations analysis. This traffic operations analysis includes an analysis of traffic conditions during the AM and PM peak hours at seven intersections, a review of site access and on-site circulation, an evaluation of transit services, and an evaluation of pedestrian and bicycle facilities, and parking.

### VMT Analysis

OPR recommends a threshold of 15 percent below the existing VMT per capita for residential projects. The average daily VMT for the project was calculated to be 20.57 VMT per capita, which is more than 15% below Portola Valley's average VMT (25.68). Thus, the project is not expected to create a significant transportation impact.

### Potential Safety Impact on Pedestrian/Equestrian Trails

The project would increase vehicle access points along the pedestrian/equestrian trail runs on the west side of Alpine Road along the project frontage. Any increase in vehicle access points along the trail would increase the potential for conflict between pedestrians/equestrians and is considered a potential safety impact.

### Mitigation Measure

The project should install a sign at the driveways "STOP HERE LOOK FOR TRAIL USERS STOP AGAIN AT ROAD" for outbound traffic approaching the trail to alert the exiting drivers of the presence of pedestrians/horses.

## Other Transportation Issues

The site plan shows adequate site access and on-site circulation. The project would not have an adverse effect on the existing transit, pedestrian, or bicycle facilities in the study area.

Hexagon has the following recommendation resulting from the site access and circulation evaluation and the parking evaluation. Implementation (or not) of these recommendations would not change impact and significance conclusions discussed in this report.

### Recommendation

- New residents that work at Stanford University should be encouraged to utilize the TDM programs offered by the University, which could include carpooling together to work.
- The project should install the “NO PARKING ANY TIME” signs along the internal road.
- The project should designate 8 spaces for guest parking, which would be monitored by the HOA.

## Intersection Traffic Operations

The results of the intersection level-of-service analysis show that the added project trips are not expected to result in a noticeable increase vehicle delay on the stop-controlled approaches.

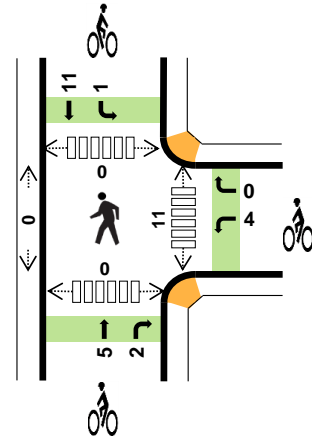
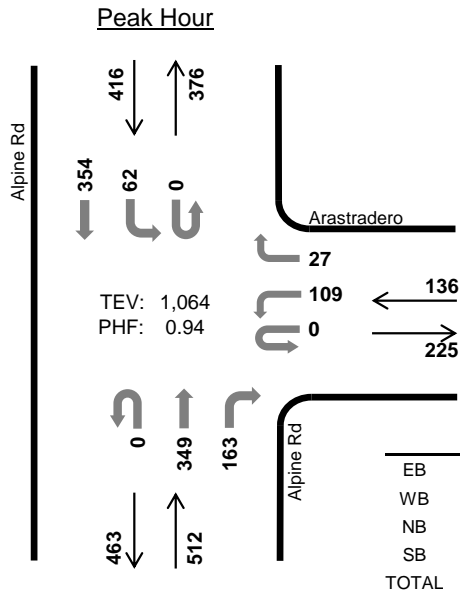
## **Appendix A**

### **Traffic Counts**

### Alpine Rd Arastradero



Date: 11-21-2019  
 Count Period: 7:00 AM to 9:00 AM  
 Peak Hour: 7:30 AM to 8:30 AM



#### Two-Hour Count Summaries

Interval Start	0				Arastradero				Alpine Rd				Alpine Rd				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	0	0	0	0	20	0	3	0	0	47	17	0	9	57	0	153	0	
7:15 AM	0	0	0	0	0	39	0	6	0	0	61	37	0	12	73	0	228	0	
7:30 AM	0	0	0	0	0	20	0	8	0	0	91	42	0	11	78	0	250	0	
7:45 AM	0	0	0	0	0	31	0	10	0	0	89	37	0	19	97	0	283	914	
8:00 AM	0	0	0	0	0	19	0	4	0	0	99	37	0	15	82	0	256	1,017	
8:15 AM	0	0	0	0	0	39	0	5	0	0	70	47	0	17	97	0	275	1,064	
8:30 AM	0	0	0	0	0	18	0	2	0	0	87	45	0	19	77	0	248	1,062	
8:45 AM	0	0	0	0	0	22	0	4	0	0	77	36	0	16	67	0	222	1,001	
Count Total	0	0	0	0	0	208	0	42	0	0	621	298	0	118	628	0	1,915	0	
Peak Hour	All	0	0	0	0	0	109	0	27	0	0	349	163	0	62	354	0	1,064	0
	HV	0	0	0	0	0	2	0	7	0	0	4	2	0	1	11	0	27	0
	HV%	-	-	-	-	-	2%	-	26%	-	-	1%	1%	-	2%	3%	-	3%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	3	1	4	0	2	12	0	14	0	0	0	0	0
7:15 AM	0	0	3	3	6	0	7	29	2	38	4	0	0	0	4
7:30 AM	0	3	0	4	7	0	3	1	1	5	5	0	0	0	5
7:45 AM	0	5	2	3	10	0	0	3	7	10	3	0	0	0	3
8:00 AM	0	1	3	2	6	0	1	1	1	3	0	0	0	0	0
8:15 AM	0	0	1	3	4	0	0	2	3	5	3	0	0	0	3
8:30 AM	0	1	2	5	8	0	0	2	3	5	2	0	0	0	2
8:45 AM	0	2	2	3	7	0	2	3	0	5	4	0	0	0	4
Count Total	0	12	16	24	52	0	15	53	17	85	21	0	0	0	21
Peak Hr	0	9	6	12	27	0	4	7	12	23	11	0	0	0	11

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	0				Arastradero				Alpine Rd				Alpine Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	2	0	0	1	0	4	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	1	2	0	6	0
7:30 AM	0	0	0	0	0	1	0	2	0	0	0	0	0	1	3	0	7	0
7:45 AM	0	0	0	0	0	0	0	5	0	0	2	0	0	0	3	0	10	27
8:00 AM	0	0	0	0	0	1	0	0	0	0	2	1	0	0	2	0	6	29
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	0	4	27
8:30 AM	0	0	0	0	0	1	0	0	0	0	2	0	0	0	5	0	8	28
8:45 AM	0	0	0	0	0	1	0	1	0	0	2	0	0	0	3	0	7	25
Count Total	0	0	0	0	0	4	0	8	0	0	12	4	0	2	22	0	52	0
Peak Hour	0	0	0	0	0	2	0	7	0	0	4	2	0	1	11	0	27	0

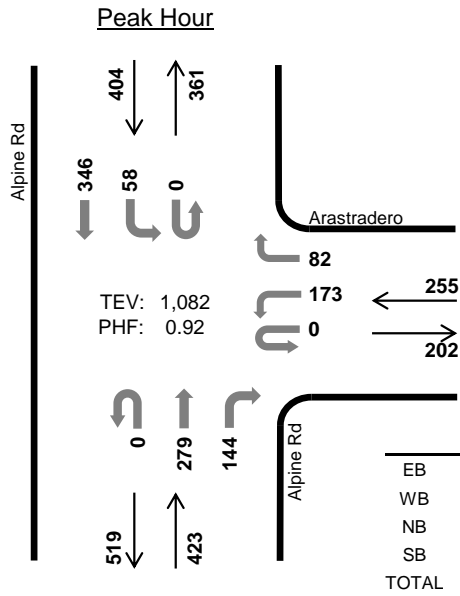
Two-Hour Count Summaries - Bikes														
Interval Start	0			Arastradero			Alpine Rd			Alpine Rd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	1	0	1	0	6	6	0	0	0	14	0
7:15 AM	0	0	0	5	0	2	0	13	16	2	0	0	38	0
7:30 AM	0	0	0	3	0	0	0	0	1	0	1	0	5	0
7:45 AM	0	0	0	0	0	0	0	2	1	0	7	0	10	67
8:00 AM	0	0	0	1	0	0	0	1	0	1	0	0	3	56
8:15 AM	0	0	0	0	0	0	0	2	0	0	3	0	5	23
8:30 AM	0	0	0	0	0	0	0	1	1	0	3	0	5	23
8:45 AM	0	0	0	2	0	0	0	1	2	0	0	0	5	18
Count Total	0	0	0	12	0	3	0	26	27	3	14	0	85	0
Peak Hour	0	0	0	4	0	0	0	5	2	1	11	0	23	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

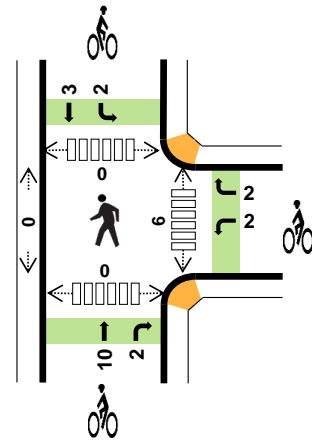
# Alpine Rd Arastradero



Date: 11-21-2019  
 Count Period: 4:00 PM to 6:00 PM  
 Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	-	-
WB	0.0%	0.76
NB	0.7%	0.90
SB	0.2%	0.93
TOTAL	0.4%	0.92



## Two-Hour Count Summaries

Interval Start	0				Arastradero				Alpine Rd Northbound				Alpine Rd Southbound				15-min Total	Rolling One Hour	
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	0	0	0	0	28	0	21	0	0	84	46	0	13	79	0	271	0	
4:15 PM	0	0	0	0	0	25	0	10	0	0	77	34	0	15	72	0	233	0	
4:30 PM	0	0	0	0	0	35	0	15	0	0	81	36	0	17	84	0	268	0	
4:45 PM	0	0	0	0	0	33	0	21	0	0	49	37	0	15	94	0	249	1,021	
5:00 PM	0	0	0	0	0	47	0	20	0	0	78	37	0	15	74	0	271	1,021	
5:15 PM	0	0	0	0	0	58	0	26	0	0	71	34	0	11	94	0	294	1,082	
5:30 PM	0	0	0	0	0	38	0	24	0	0	61	24	0	14	80	0	241	1,055	
5:45 PM	0	0	0	0	0	58	0	9	0	0	33	21	0	8	92	0	221	1,027	
Count Total	0	0	0	0	0	322	0	146	0	0	534	269	0	108	669	0	2,048	0	
Peak Hour	All	0	0	0	0	0	173	0	82	0	0	279	144	0	58	346	0	1,082	0
	HV	0	0	0	0	0	0	0	0	0	0	2	1	0	0	1	0	4	0
	HV%	-	-	-	-	-	0%	-	0%	-	-	1%	1%	-	0%	0%	-	0%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	2	2	4	0	1	3	2	6	2	0	0	0	2
4:15 PM	0	0	2	1	3	0	2	3	3	8	1	0	0	0	1
4:30 PM	0	0	0	1	1	0	3	4	1	8	2	0	0	0	2
4:45 PM	0	0	1	0	1	0	0	5	4	9	1	0	0	0	1
5:00 PM	0	0	2	0	2	0	1	1	0	2	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	2	0	2	3	0	0	0	3
5:30 PM	0	1	3	0	4	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	1	1	0	2	0	0	0	0	0	4	0	0	0	4
Count Total	0	2	11	4	17	0	7	18	10	35	13	0	0	0	13
Peak Hr	0	0	3	1	4	0	4	12	5	21	6	0	0	0	6

<b>Two-Hour Count Summaries - Heavy Vehicles</b>																		
Interval Start	0				Arastradero				Alpine Rd				Alpine Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	4	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	3	0
<b>4:30 PM</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	9
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	7
<b>5:15 PM</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>
5:30 PM	0	0	0	0	0	0	0	1	0	0	2	1	0	0	0	0	4	7
5:45 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	2	8
Count Total	0	0	0	0	0	1	0	1	0	0	9	2	0	1	3	0	17	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	2	1	0	0	1	0	4	0
<b>Two-Hour Count Summaries - Bikes</b>																		
Interval Start	0			Arastradero			Alpine Rd			Alpine Rd			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	1	0	0	0	2	1	0	2	0	6	0				
4:15 PM	0	0	0	0	0	2	0	2	1	3	0	0	8	0				
<b>4:30 PM</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>8</b>	<b>0</b>				
4:45 PM	0	0	0	0	0	0	0	5	0	2	2	0	9	31				
5:00 PM	0	0	0	1	0	0	0	0	1	0	0	0	2	27				
<b>5:15 PM</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>21</b>				
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	13				
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4				
Count Total	0	0	0	3	0	4	0	14	4	5	5	0	35	0				
Peak Hour	0	0	0	2	0	2	0	10	2	2	3	0	21	0				

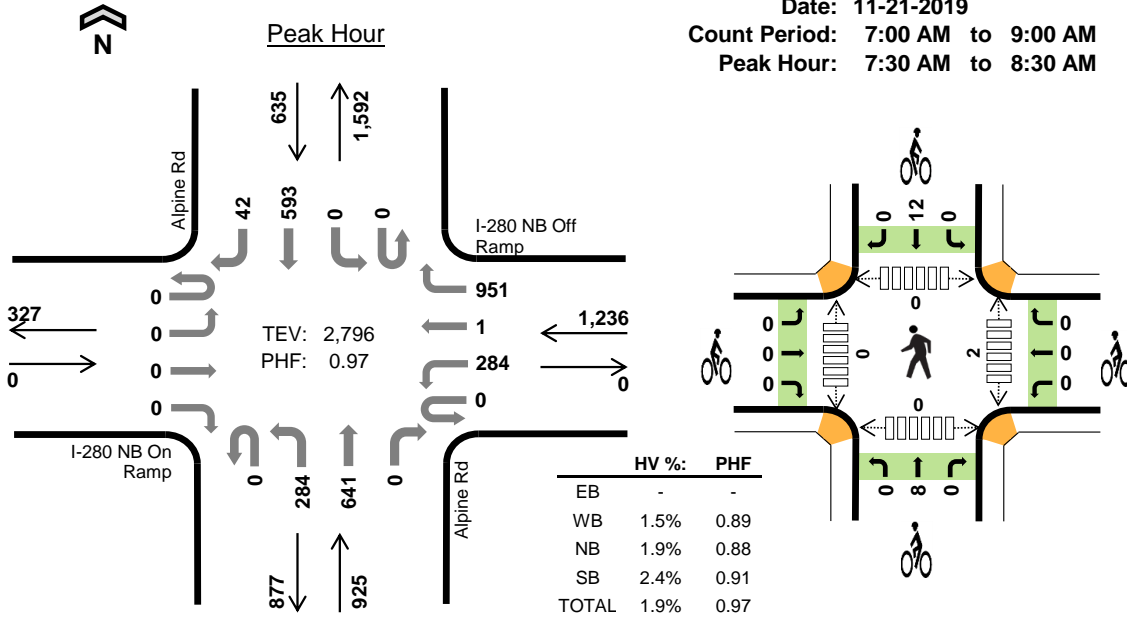
Note: U-Turn volumes for bikes are included in Left-Turn, if any.



# Alpine Rd I-280 NB On Ramp



Date: 11-21-2019  
 Count Period: 7:00 AM to 9:00 AM  
 Peak Hour: 7:30 AM to 8:30 AM



### Two-Hour Count Summaries

Interval Start	I-280 NB On Ramp				I-280 NB Off Ramp			Alpine Rd Northbound			Alpine Rd Southbound			15-min Total	Rolling One Hour				
	Eastbound				Westbound			UT	LT	TH	RT	UT	LT			TH	RT		
7:00 AM	0	0	0	0	0	51	0	290	0	29	73	0	0	0	79	10	532	0	
7:15 AM	0	0	0	0	0	67	0	311	0	54	103	0	0	0	110	10	655	0	
7:30 AM	0	0	0	0	0	64	0	263	0	63	139	0	0	0	125	7	661	0	
7:45 AM	0	0	0	0	0	80	0	268	0	64	136	0	0	0	166	8	722	2,570	
8:00 AM	0	0	0	0	0	77	0	203	0	77	186	0	0	0	156	13	712	2,750	
8:15 AM	0	0	0	0	0	63	1	217	0	80	180	0	0	0	146	14	701	2,796	
8:30 AM	0	0	0	0	0	46	0	201	0	60	181	0	0	0	135	12	635	2,770	
8:45 AM	0	0	0	0	0	40	1	211	0	70	157	0	1	0	102	15	597	2,645	
Count Total	0	0	0	0	0	488	2	1,964	0	497	1,155	0	1	0	1,019	89	5,215	0	
Peak Hour	All	0	0	0	0	0	284	1	951	0	284	641	0	0	0	593	42	2,796	0
	HV	0	0	0	0	0	8	0	11	0	5	13	0	0	0	15	0	52	0
	HV%	-	-	-	-	-	3%	0%	1%	-	2%	2%	-	-	-	3%	0%	2%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	7	3	1	11	0	0	5	1	6	0	0	0	0	0
7:15 AM	0	6	4	0	10	0	0	14	1	15	2	0	0	0	2
7:30 AM	0	5	2	5	12	0	0	4	0	4	2	0	0	0	2
7:45 AM	0	8	7	3	18	0	0	0	8	8	0	0	0	0	0
8:00 AM	0	3	6	4	13	0	0	2	1	3	0	0	0	0	0
8:15 AM	0	3	3	3	9	0	0	2	3	5	0	0	0	0	0
8:30 AM	0	2	4	2	8	0	0	2	2	4	0	0	0	0	0
8:45 AM	0	4	2	6	12	0	0	0	1	1	0	0	0	0	0
Count Total	0	38	31	24	93	0	0	29	17	46	4	0	0	0	4
Peak Hour	0	19	18	15	52	0	0	8	12	20	2	0	0	0	2

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	I-280 NB On Ramp				I-280 NB Off Ramp				Alpine Rd				15-min Total	Rolling One Hour				
	Eastbound				Westbound				Northbound						Southbound			
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			UT	LT	TH	RT
7:00 AM	0	0	0	0	0	1	0	6	0	0	3	0	0	0	1	0	11	0
7:15 AM	0	0	0	0	0	4	0	2	0	3	1	0	0	0	0	0	10	0
7:30 AM	0	0	0	0	0	4	0	1	0	0	2	0	0	0	5	0	12	0
7:45 AM	0	0	0	0	0	2	0	6	0	2	5	0	0	0	3	0	18	51
8:00 AM	0	0	0	0	0	1	0	2	0	3	3	0	0	0	4	0	13	53
8:15 AM	0	0	0	0	0	1	0	2	0	0	3	0	0	0	3	0	9	52
8:30 AM	0	0	0	0	0	1	0	1	0	1	3	0	0	0	1	1	8	48
8:45 AM	0	0	0	0	0	2	0	2	0	1	1	0	0	0	5	1	12	42
Count Total	0	0	0	0	0	16	0	22	0	10	21	0	0	0	22	2	93	0
Peak Hour	0	0	0	0	0	8	0	11	0	5	13	0	0	0	15	0	52	0

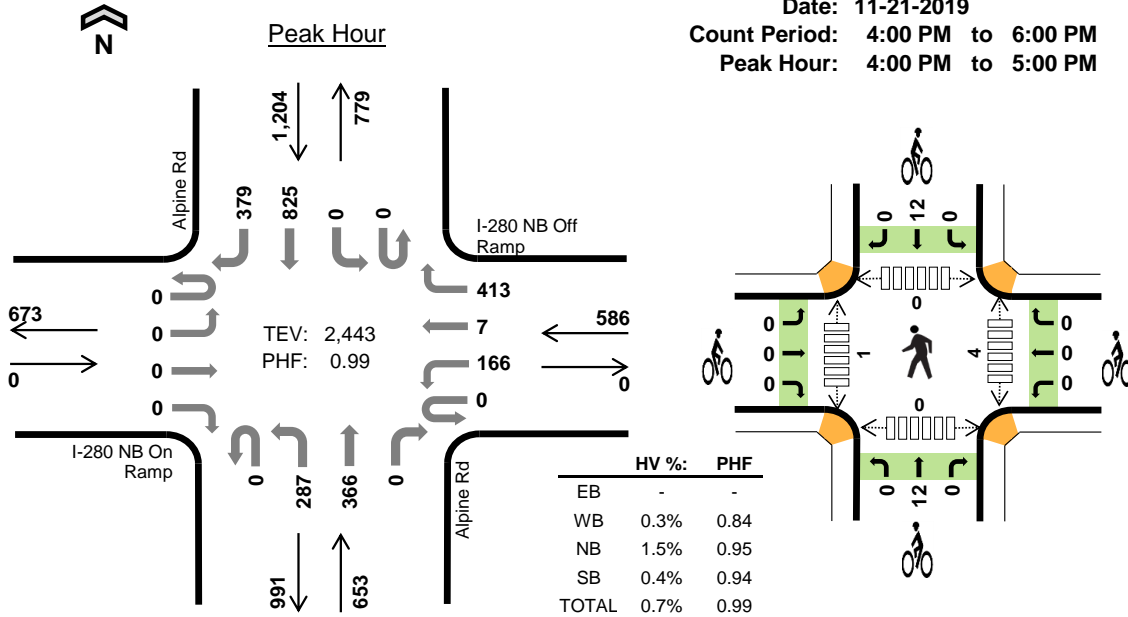
Two-Hour Count Summaries - Bikes																		
Interval Start	I-280 NB On Ramp				I-280 NB Off Ramp				Alpine Rd				15-min Total	Rolling One Hour				
	Eastbound				Westbound				Northbound						Southbound			
	LT	TH	RT		LT	TH	RT		LT	TH	RT				LT	TH	RT	
7:00 AM	0	0	0		0	0	0		0	5	0		0	1	0		6	0
7:15 AM	0	0	0		0	0	0		0	14	0		0	1	0		15	0
7:30 AM	0	0	0		0	0	0		0	4	0		0	0	0		4	0
7:45 AM	0	0	0		0	0	0		0	0	0		0	8	0		8	33
8:00 AM	0	0	0		0	0	0		0	2	0		0	1	0		3	30
8:15 AM	0	0	0		0	0	0		0	2	0		0	3	0		5	20
8:30 AM	0	0	0		0	0	0		0	2	0		0	2	0		4	20
8:45 AM	0	0	0		0	0	0		0	0	0		0	1	0		1	13
Count Total	0	0	0		0	0	0		0	29	0		0	17	0		46	0
Peak Hour	0	0	0		0	0	0		0	8	0		0	12	0		20	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

# Alpine Rd I-280 NB On Ramp



Date: 11-21-2019  
Count Period: 4:00 PM to 6:00 PM  
Peak Hour: 4:00 PM to 5:00 PM



## Two-Hour Count Summaries

Interval Start	I-280 NB On Ramp				I-280 NB Off Ramp				Alpine Rd Northbound				Alpine Rd Southbound				15-min Total	Rolling One Hour	
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	0	0	0	0	42	1	87	0	90	77	0	0	0	227	92	616	0	
4:15 PM	0	0	0	0	0	52	1	121	0	67	82	0	0	0	182	99	604	0	
4:30 PM	0	0	0	0	0	39	1	98	0	69	102	0	0	0	212	86	607	0	
4:45 PM	0	0	0	0	0	33	4	107	0	61	105	0	0	0	204	102	616	2,443	
5:00 PM	0	0	0	0	0	41	3	107	0	62	103	0	0	0	193	58	567	2,394	
5:15 PM	0	0	0	0	0	50	3	132	0	57	103	0	0	0	215	89	649	2,439	
5:30 PM	0	0	0	0	0	39	5	121	0	56	90	0	0	0	207	87	605	2,437	
5:45 PM	0	0	0	0	0	53	2	172	0	42	68	0	1	0	184	59	581	2,402	
Count Total	0	0	0	0	0	349	20	945	0	504	730	0	1	0	1,624	672	4,845	0	
Peak Hour	All	0	0	0	0	0	166	7	413	0	287	366	0	0	0	825	379	2,443	0
	HV	0	0	0	0	0	2	0	0	0	7	3	0	0	0	2	3	17	0
	HV%	-	-	-	-	-	1%	0%	0%	-	2%	1%	-	-	-	0%	1%	1%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	1	3	2	6	0	0	1	5	6	2	0	0	0	2
4:15 PM	0	1	3	0	4	0	0	3	2	5	1	0	0	0	1
4:30 PM	0	0	3	1	4	0	0	4	2	6	0	1	0	0	1
4:45 PM	0	0	1	2	3	0	0	4	3	7	1	0	0	0	1
5:00 PM	0	0	1	0	1	0	0	1	0	1	2	0	0	0	2
5:15 PM	0	1	1	0	2	0	0	0	0	0	5	0	0	0	5
5:30 PM	0	0	2	1	3	0	0	2	0	2	1	0	0	0	1
5:45 PM	0	1	0	4	5	0	0	0	1	1	0	0	0	0	0
Count Total	0	4	14	10	28	0	0	15	13	28	12	1	0	0	13
Peak Hour	0	2	10	5	17	0	0	12	12	24	4	1	0	0	5

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	I-280 NB On Ramp				I-280 NB Off Ramp				Alpine Rd				Alpine Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	1	0	0	0	1	2	0	0	0	1	1	6	0
4:15 PM	0	0	0	0	0	1	0	0	0	2	1	0	0	0	0	0	4	0
4:30 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	1	4	0
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	3	17
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	12
5:15 PM	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	10
5:30 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	3	9
5:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	3	5	11
Count Total	0	0	0	0	0	3	0	1	0	8	6	0	0	0	3	7	28	0
Peak Hour	0	0	0	0	0	2	0	0	0	7	3	0	0	0	2	3	17	0

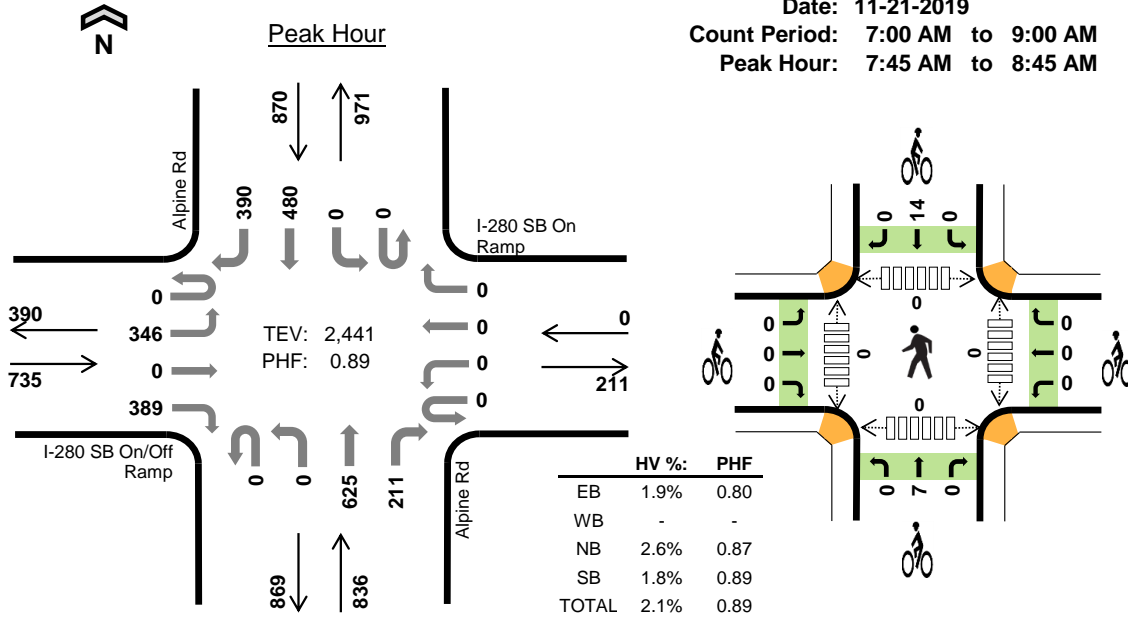
Two-Hour Count Summaries - Bikes														
Interval Start	I-280 NB On Ramp			I-280 NB Off Ramp			Alpine Rd			Alpine Rd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	1	0	0	5	0	6	0
4:15 PM	0	0	0	0	0	0	0	3	0	0	2	0	5	0
4:30 PM	0	0	0	0	0	0	0	4	0	0	2	0	6	0
4:45 PM	0	0	0	0	0	0	0	4	0	0	3	0	7	24
5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	19
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	14
5:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	2	10
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	4
Count Total	0	0	0	0	0	0	0	15	0	0	13	0	28	0
Peak Hour	0	0	0	0	0	0	0	12	0	0	12	0	24	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

# Alpine Rd I-280 SB On/Off Ramp



Date: 11-21-2019  
 Count Period: 7:00 AM to 9:00 AM  
 Peak Hour: 7:45 AM to 8:45 AM



## Two-Hour Count Summaries

Interval Start	I-280 SB On/Off Ramp				I-280 SB On Ramp				Alpine Rd				Alpine Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	42	0	48	0	0	0	0	0	0	64	28	0	0	75	55	312	0
7:15 AM	0	63	0	69	0	0	0	0	0	0	97	26	0	0	102	75	432	0
7:30 AM	0	80	0	82	0	0	0	0	0	0	122	43	0	0	97	95	519	0
7:45 AM	0	67	0	97	0	0	0	0	0	0	138	45	0	0	138	106	591	1,854
8:00 AM	0	97	0	133	0	0	0	0	0	0	173	49	0	0	122	110	684	2,226
8:15 AM	0	89	0	87	0	0	0	0	0	0	167	73	0	0	117	94	627	2,421
8:30 AM	0	93	0	72	0	0	0	0	0	0	147	44	0	0	103	80	539	2,441
8:45 AM	0	86	0	74	0	0	0	0	0	0	140	41	0	0	76	63	480	2,330
Count Total	0	617	0	662	0	0	0	0	0	0	1,048	349	0	0	830	678	4,184	0
Peak Hour	All	0	346	0	389	0	0	0	0	0	625	211	0	0	480	390	2,441	0
	HV	0	3	0	11	0	0	0	0	0	17	5	0	0	12	4	52	0
	HV%	-	1%	-	3%	-	-	-	-	-	3%	2%	-	-	3%	1%	2%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	2	0	4	2	8	0	0	4	1	5	0	0	0	0	0
7:15 AM	1	0	4	4	9	0	0	14	1	15	0	0	0	0	0
7:30 AM	2	0	2	9	13	0	0	4	0	4	0	0	0	0	0
7:45 AM	1	0	7	4	12	0	0	0	8	8	0	0	0	0	0
8:00 AM	5	0	5	6	16	0	0	2	1	3	0	0	0	0	0
8:15 AM	5	0	5	4	14	0	0	3	3	6	0	0	0	0	0
8:30 AM	3	0	5	2	10	0	0	2	2	4	0	0	0	0	0
8:45 AM	2	0	2	7	11	0	0	0	1	1	0	0	0	0	0
Count Total	21	0	34	38	93	0	0	29	17	46	0	0	0	0	0
Peak Hour	14	0	22	16	52	0	0	7	14	21	0	0	0	0	0

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	I-280 SB On/Off Ramp				I-280 SB On Ramp				Alpine Rd				Alpine Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	1	0	1	0	0	0	0	0	0	2	2	0	0	2	0	8	0
7:15 AM	0	0	0	1	0	0	0	0	0	0	4	0	0	0	4	0	9	0
7:30 AM	0	0	0	2	0	0	0	0	0	0	2	0	0	0	8	1	13	0
7:45 AM	0	1	0	0	0	0	0	0	0	0	6	1	0	0	4	0	12	42
8:00 AM	0	2	0	3	0	0	0	0	0	0	4	1	0	0	5	1	16	50
8:15 AM	0	0	0	5	0	0	0	0	0	0	3	2	0	0	2	2	14	55
8:30 AM	0	0	0	3	0	0	0	0	0	0	4	1	0	0	1	1	10	52
8:45 AM	0	0	0	2	0	0	0	0	0	0	2	0	0	0	4	3	11	51
Count Total	0	4	0	17	0	0	0	0	0	0	27	7	0	0	30	8	93	0
Peak Hour	0	3	0	11	0	0	0	0	0	0	17	5	0	0	12	4	52	0

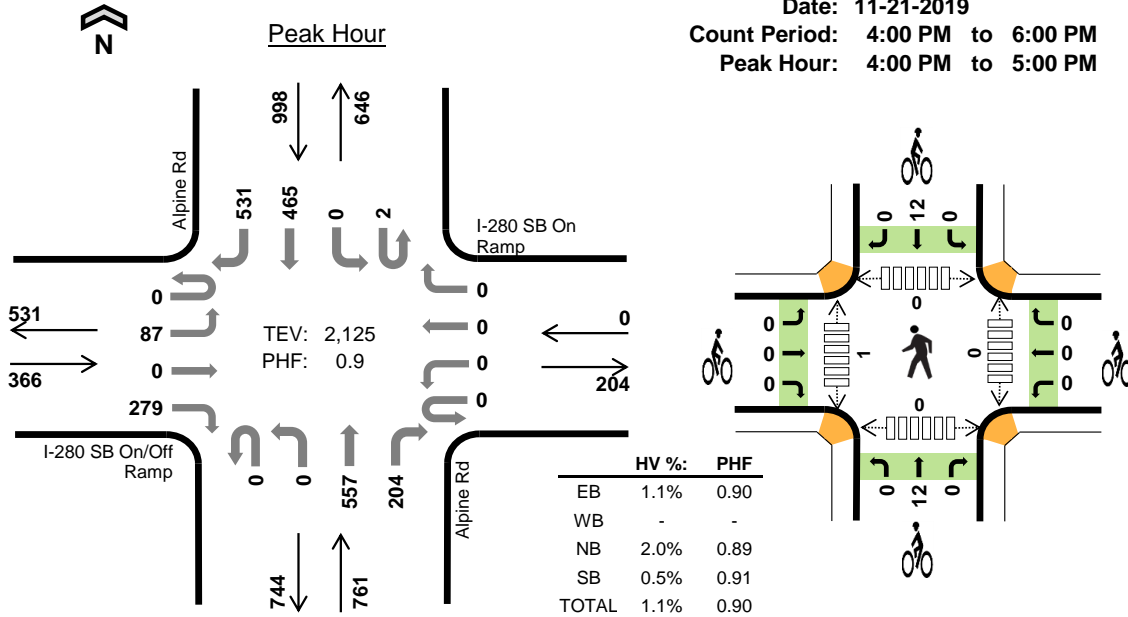
Two-Hour Count Summaries - Bikes																		
Interval Start	I-280 SB On/Off Ramp				I-280 SB On Ramp				Alpine Rd				Alpine Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	LT	TH	RT		LT	TH	RT		LT	TH	RT		LT	TH	RT			
7:00 AM	0	0	0		0	0	0		0	4	0		0	1	0		5	0
7:15 AM	0	0	0		0	0	0		0	14	0		0	1	0		15	0
7:30 AM	0	0	0		0	0	0		0	4	0		0	0	0		4	0
7:45 AM	0	0	0		0	0	0		0	0	0		0	8	0		8	32
8:00 AM	0	0	0		0	0	0		0	2	0		0	1	0		3	30
8:15 AM	0	0	0		0	0	0		0	3	0		0	3	0		6	21
8:30 AM	0	0	0		0	0	0		0	2	0		0	2	0		4	21
8:45 AM	0	0	0		0	0	0		0	0	0		0	1	0		1	14
Count Total	0	0	0		0	0	0		0	29	0		0	17	0		46	0
Peak Hour	0	0	0		0	0	0		0	7	0		0	14	0		21	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

# Alpine Rd I-280 SB On/Off Ramp



Date: 11-21-2019  
Count Period: 4:00 PM to 6:00 PM  
Peak Hour: 4:00 PM to 5:00 PM



### Two-Hour Count Summaries

Interval Start	I-280 SB On/Off Ramp				I-280 SB On Ramp				Alpine Rd				Alpine Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	11	0	91	0	0	0	0	0	0	147	67	2	0	118	153	589	0
4:15 PM	0	17	0	56	0	0	0	0	0	0	130	47	0	0	113	123	486	0
4:30 PM	0	31	0	70	0	0	0	0	0	0	141	54	0	0	121	131	548	0
4:45 PM	0	28	0	62	0	0	0	0	0	0	139	36	0	0	113	124	502	2,125
5:00 PM	0	26	0	69	0	0	0	0	0	0	140	42	0	0	116	119	512	2,048
5:15 PM	0	32	0	42	0	0	0	0	0	0	125	29	0	0	148	120	496	2,058
5:30 PM	0	24	0	49	0	0	0	0	0	0	127	24	0	0	124	122	470	1,980
5:45 PM	0	23	0	47	0	0	0	0	0	0	83	24	1	0	135	104	417	1,895
Count Total	0	192	0	486	0	0	0	0	0	0	1,032	323	3	0	988	996	4,020	0
Peak Hour	All	0	87	0	279	0	0	0	0	0	557	204	2	0	465	531	2,125	0
	HV	0	0	0	4	0	0	0	0	0	10	5	0	0	3	2	24	0
	HV%	-	0%	-	1%	-	-	-	-	-	2%	2%	0%	-	1%	0%	1%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	0	3	3	9	0	0	1	5	6	0	0	0	0	0
4:15 PM	1	0	5	1	7	0	0	3	2	5	0	1	0	0	1
4:30 PM	0	0	4	0	4	0	0	4	2	6	0	0	0	0	0
4:45 PM	0	0	3	1	4	0	0	4	3	7	0	0	0	0	0
5:00 PM	1	0	1	0	2	0	0	1	0	1	0	0	0	0	0
5:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
5:30 PM	1	0	2	0	3	0	0	2	0	2	0	0	0	0	0
5:45 PM	0	0	1	1	2	0	0	0	1	1	0	0	0	0	0
Count Total	6	0	20	6	32	0	0	15	13	28	0	1	0	0	1
Peak Hour	4	0	15	5	24	0	0	12	12	24	0	1	0	0	1

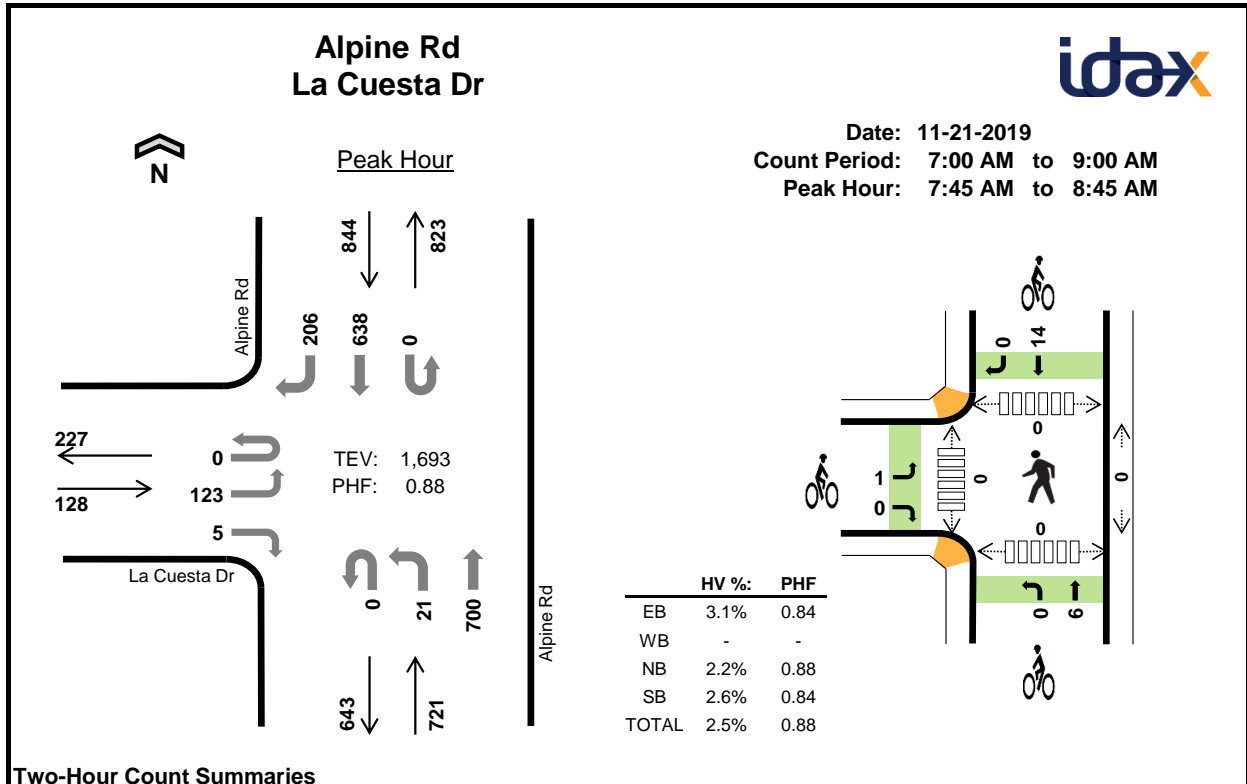
Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	I-280 SB On/Off Ramp				I-280 SB On Ramp				Alpine Rd				15-min Total	Rolling One Hour				
	Eastbound				Westbound				Northbound						Southbound			
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			UT	LT	TH	RT
4:00 PM	0	0	0	3	0	0	0	0	0	0	3	0	0	0	1	2	9	0
4:15 PM	0	0	0	1	0	0	0	0	0	0	3	2	0	0	1	0	7	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	4	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	2	0	0	1	0	4	24
5:00 PM	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	2	17
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	11
5:30 PM	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	3	10
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	8
Count Total	0	0	0	6	0	0	0	0	0	0	14	6	0	0	4	2	32	0
Peak Hour	0	0	0	4	0	0	0	0	0	0	10	5	0	0	3	2	24	0

Two-Hour Count Summaries - Bikes																		
Interval Start	I-280 SB On/Off Ramp				I-280 SB On Ramp				Alpine Rd				15-min Total	Rolling One Hour				
	Eastbound				Westbound				Northbound						Southbound			
	LT	TH	RT		LT	TH	RT		LT	TH	RT				LT	TH	RT	
4:00 PM	0	0	0		0	0	0		0	1	0		0	5	0	6	0	
4:15 PM	0	0	0		0	0	0		0	3	0		0	2	0	5	0	
4:30 PM	0	0	0		0	0	0		0	4	0		0	2	0	6	0	
4:45 PM	0	0	0		0	0	0		0	4	0		0	3	0	7	24	
5:00 PM	0	0	0		0	0	0		0	1	0		0	0	0	1	19	
5:15 PM	0	0	0		0	0	0		0	0	0		0	0	0	0	14	
5:30 PM	0	0	0		0	0	0		0	2	0		0	0	0	2	10	
5:45 PM	0	0	0		0	0	0		0	0	0		0	1	0	1	4	
Count Total	0	0	0		0	0	0		0	15	0		0	13	0	28	0	
Peak Hour	0	0	0		0	0	0		0	12	0		0	12	0	24	0	

Note: U-Turn volumes for bikes are included in Left-Turn, if any.





**Two-Hour Count Summaries**

Interval Start	La Cuesta Dr				0				Alpine Rd				Alpine Rd				15-min Total	Rolling One Hour	
	Eastbound		Westbound		Northbound		Southbound		UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	10	0	2	0	0	0	0	0	1	80	0	0	0	105	13	211	0	
7:15 AM	0	24	0	1	0	0	0	0	0	2	99	0	0	0	139	28	293	0	
7:30 AM	0	21	0	5	0	0	0	0	0	3	148	0	0	0	147	30	354	0	
7:45 AM	0	25	0	1	0	0	0	0	0	3	154	0	0	0	182	45	410	1,268	
8:00 AM	0	36	0	2	0	0	0	0	0	6	185	0	0	0	163	88	480	1,537	
8:15 AM	0	35	0	1	0	0	0	0	0	4	201	0	0	0	156	48	445	1,689	
8:30 AM	0	27	0	1	0	0	0	0	0	8	160	0	0	0	137	25	358	1,693	
8:45 AM	1	35	0	1	0	0	0	0	0	2	141	0	0	0	122	19	321	1,604	
Count Total	1	213	0	14	0	0	0	0	0	29	1,168	0	0	0	1,151	296	2,872	0	
Peak Hour	All	0	123	0	5	0	0	0	0	0	21	700	0	0	0	638	206	1,693	0
	HV	0	4	0	0	0	0	0	0	0	0	16	0	0	0	20	2	42	0
	HV%	-	3%	-	0%	-	-	-	-	-	0%	2%	-	-	-	3%	1%	2%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	1	0	1	3	5	0	0	3	1	4	0	0	0	0	0
7:15 AM	1	0	3	5	9	0	0	13	2	15	1	0	0	0	1
7:30 AM	1	0	1	8	10	2	0	3	0	5	1	0	0	0	1
7:45 AM	1	0	5	4	10	0	0	0	8	8	0	0	0	0	0
8:00 AM	1	0	3	6	10	0	0	2	1	3	0	0	0	0	0
8:15 AM	1	0	4	8	13	0	0	3	3	6	0	0	0	0	0
8:30 AM	1	0	4	4	9	1	0	1	2	4	0	0	0	0	0
8:45 AM	0	0	2	5	7	0	0	1	1	2	0	0	0	0	0
Count Total	7	0	23	43	73	3	0	26	18	47	2	0	0	0	2
Peak Hr	4	0	16	22	42	1	0	6	14	21	0	0	0	0	0

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	La Cuesta Dr				0				Alpine Rd				Alpine Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	3	0	5	0
7:15 AM	0	1	0	0	0	0	0	0	0	0	3	0	0	0	5	0	9	0
7:30 AM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	7	1	10	0
7:45 AM	0	1	0	0	0	0	0	0	0	0	5	0	0	0	3	1	10	34
8:00 AM	0	1	0	0	0	0	0	0	0	0	3	0	0	0	6	0	10	39
8:15 AM	0	1	0	0	0	0	0	0	0	0	4	0	0	0	8	0	13	43
8:30 AM	0	1	0	0	0	0	0	0	0	0	4	0	0	0	3	1	9	42
8:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	5	0	7	39
Count Total	0	7	0	0	0	0	0	0	0	0	23	0	0	0	40	3	73	0
Peak Hour	0	4	0	0	0	0	0	0	0	0	16	0	0	0	20	2	42	0

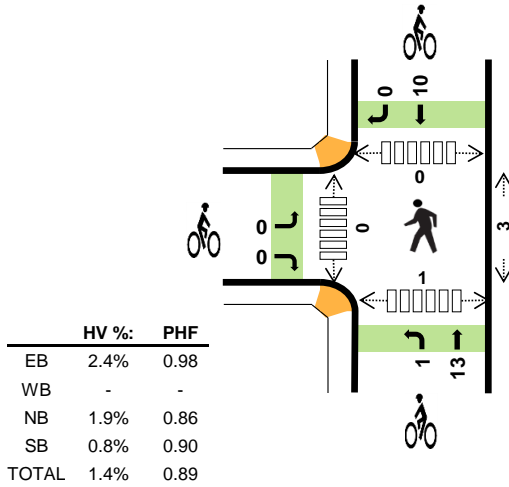
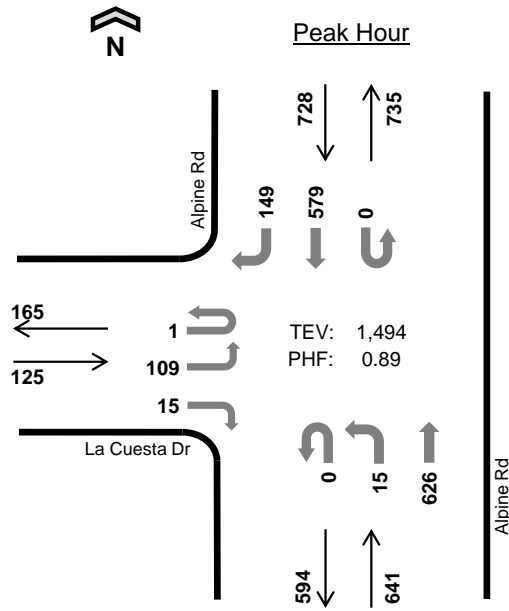
Two-Hour Count Summaries - Bikes														
Interval Start	La Cuesta Dr			0			Alpine Rd			Alpine Rd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	3	0	0	1	0	4	0
7:15 AM	0	0	0	0	0	0	0	13	0	0	1	1	15	0
7:30 AM	2	0	0	0	0	0	0	3	0	0	0	0	5	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	8	0	8	32
8:00 AM	0	0	0	0	0	0	0	2	0	0	1	0	3	31
8:15 AM	0	0	0	0	0	0	0	3	0	0	3	0	6	22
8:30 AM	1	0	0	0	0	0	0	1	0	0	2	0	4	21
8:45 AM	0	0	0	0	0	0	0	1	0	0	1	0	2	15
Count Total	3	0	0	0	0	0	0	26	0	0	17	1	47	0
Peak Hour	1	0	0	0	0	0	0	6	0	0	14	0	21	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

### Alpine Rd La Cuesta Dr



Date: 11-21-2019  
 Count Period: 4:00 PM to 6:00 PM  
 Peak Hour: 4:00 PM to 5:00 PM



	HV %:	PHF
EB	2.4%	0.98
WB	-	-
NB	1.9%	0.86
SB	0.8%	0.90
TOTAL	1.4%	0.89

#### Two-Hour Count Summaries

Interval Start	La Cuesta Dr				0				Alpine Rd				Alpine Rd				15-min Total	Rolling One Hour	
	Eastbound		Westbound		Northbound		Southbound		UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	27	0	4	0	0	0	0	0	11	175	0	0	0	155	47	419	0	
4:15 PM	0	27	0	4	0	0	0	0	0	2	151	0	0	0	125	37	346	0	
4:30 PM	0	29	0	2	0	0	0	0	0	1	159	0	0	0	151	35	377	0	
4:45 PM	1	26	0	5	0	0	0	0	0	1	141	0	0	0	148	30	352	1,494	
5:00 PM	0	30	0	6	0	0	0	0	0	5	143	0	0	0	151	30	365	1,440	
5:15 PM	0	28	0	4	0	0	0	0	0	1	120	0	0	0	147	40	340	1,434	
5:30 PM	0	32	0	3	0	0	0	0	0	5	113	0	0	0	139	34	326	1,383	
5:45 PM	0	12	0	1	0	0	0	0	0	3	85	0	0	0	148	26	275	1,306	
Count Total	1	211	0	29	0	0	0	0	0	29	1,087	0	0	0	1,164	279	2,800	0	
Peak Hour	All	1	109	0	15	0	0	0	0	0	15	626	0	0	0	579	149	1,494	0
	HV	0	3	0	0	0	0	0	0	0	0	12	0	0	0	5	1	21	0
	HV%	0%	3%	-	0%	-	-	-	-	-	0%	2%	-	-	-	1%	1%	1%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

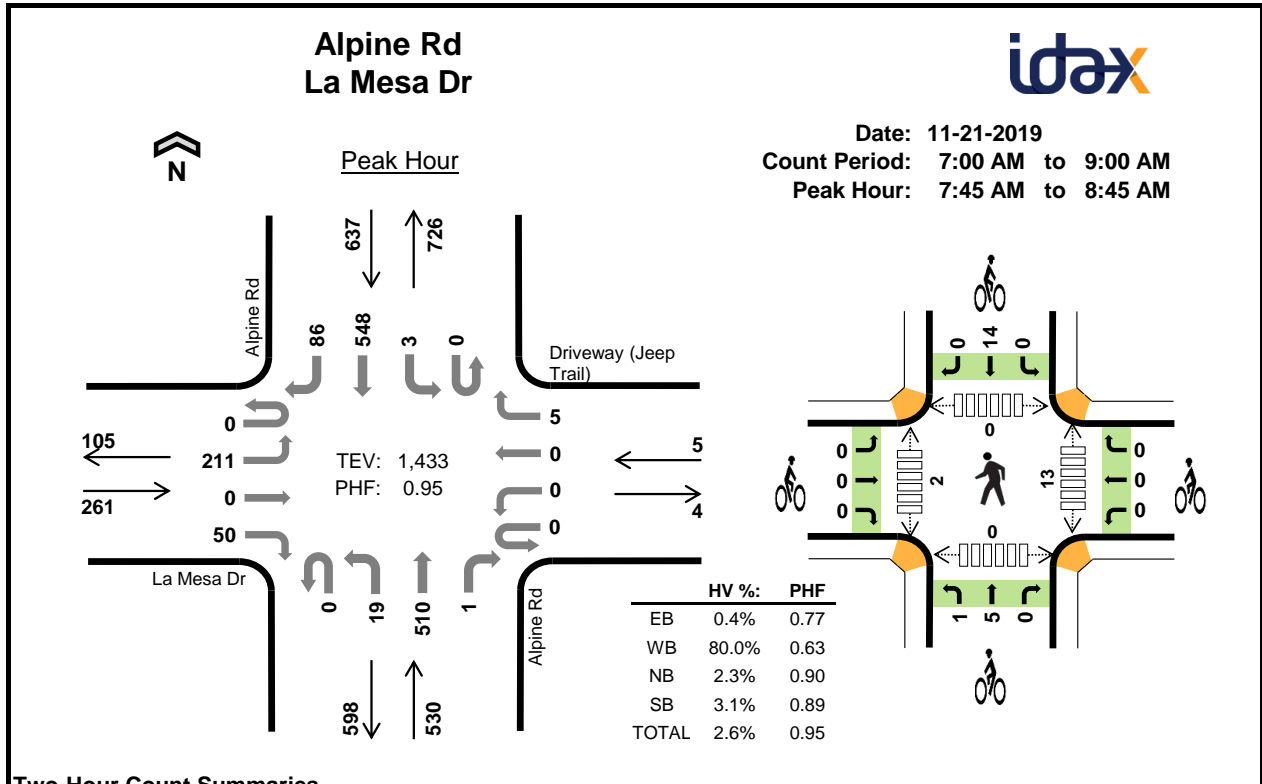
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	0	2	4	7	0	0	1	4	5	1	0	0	0	1
4:15 PM	2	0	4	0	6	0	0	4	2	6	1	0	0	0	1
4:30 PM	0	0	3	1	4	0	0	5	2	7	0	0	0	1	1
4:45 PM	0	0	3	1	4	0	0	4	2	6	1	0	0	0	1
5:00 PM	1	0	0	1	2	0	0	1	1	2	1	0	0	1	2
5:15 PM	0	0	1	0	1	0	0	0	0	0	1	0	0	1	2
5:30 PM	0	0	2	1	3	0	0	1	0	1	1	0	0	1	2
5:45 PM	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0
Count Total	4	0	17	9	30	0	0	16	11	27	6	0	0	4	10
Peak Hr	3	0	12	6	21	0	0	14	10	24	3	0	0	1	4

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	La Cuesta Dr				0				Alpine Rd				Alpine Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	0	0	0	0	0	0	0	0	2	0	0	0	3	1	7	0
4:15 PM	0	2	0	0	0	0	0	0	0	0	4	0	0	0	0	0	6	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	4	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	4	21
5:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	16
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	11
5:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3	10
5:45 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	3	9
Count Total	0	4	0	0	0	0	0	0	0	1	16	0	0	0	8	1	30	0
Peak Hour	0	3	0	0	0	0	0	0	0	0	12	0	0	0	5	1	21	0

Two-Hour Count Summaries - Bikes																		
Interval Start	La Cuesta Dr				0				Alpine Rd				Alpine Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT			
4:00 PM	0	0	0	0	0	0	0	1	0	0	4	0	0	0	0	5	0	
4:15 PM	0	0	0	0	0	0	0	1	3	0	2	0	0	2	0	6	0	
4:30 PM	0	0	0	0	0	0	0	0	5	0	2	0	0	2	0	7	0	
4:45 PM	0	0	0	0	0	0	0	0	4	0	2	0	0	2	0	6	24	
5:00 PM	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	2	21	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	
5:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	9	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
Count Total	0	0	0	0	0	0	0	1	15	0	0	11	0	0	0	27	0	
Peak Hour	0	0	0	0	0	0	0	1	13	0	0	10	0	0	0	24	0	

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



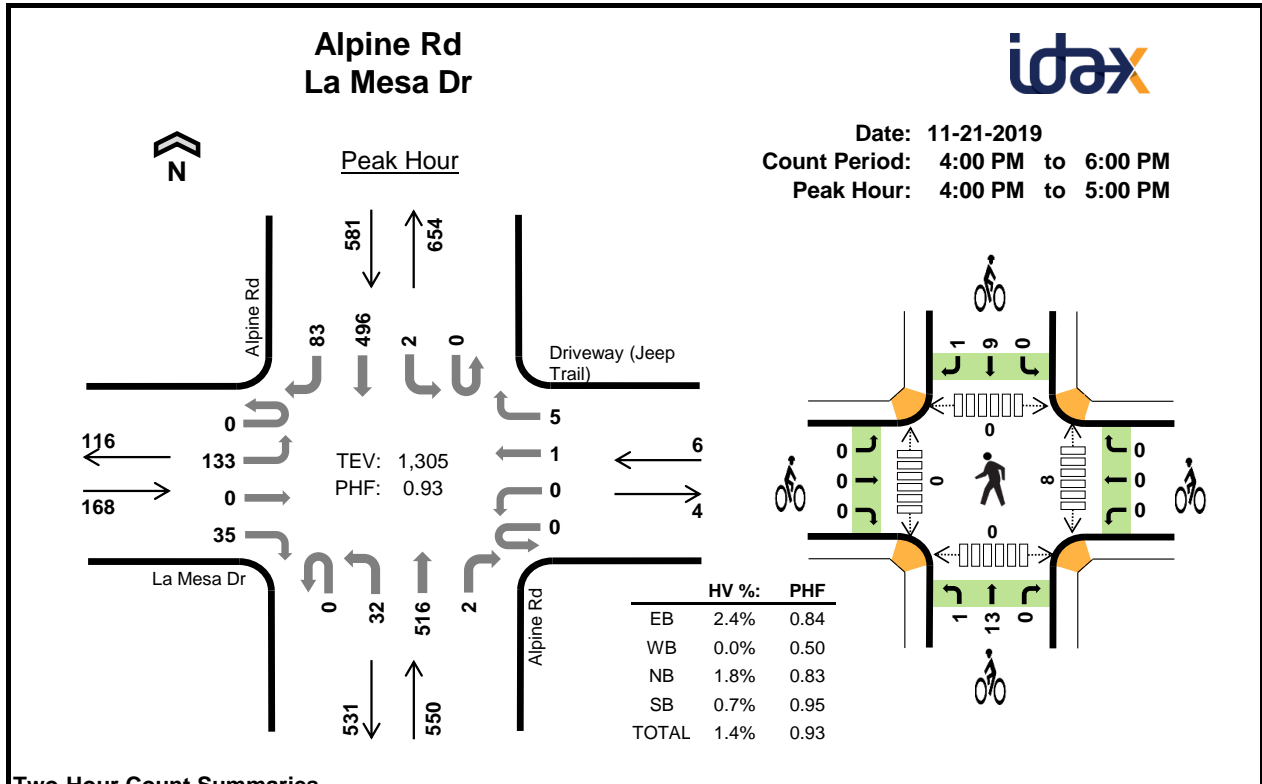
**Two-Hour Count Summaries**

Interval Start	La Mesa Dr				Driveway (Jeep Trail)				Alpine Rd				Alpine Rd				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	21	0	4	0	0	0	0	0	7	63	0	0	0	89	12	196	0	
7:15 AM	0	23	0	7	0	0	0	1	0	2	82	0	0	1	121	13	250	0	
7:30 AM	0	32	0	2	0	0	0	1	0	5	118	0	0	1	137	10	306	0	
7:45 AM	0	42	0	10	0	0	0	1	0	3	120	0	0	1	155	23	355	1,107	
8:00 AM	0	51	0	12	0	0	0	1	0	6	142	0	0	1	133	27	373	1,284	
8:15 AM	0	68	0	17	0	0	0	1	0	3	128	0	0	1	139	20	377	1,411	
8:30 AM	0	50	0	11	0	0	0	2	0	7	120	1	0	0	121	16	328	1,433	
8:45 AM	0	40	0	10	0	0	0	1	0	6	105	1	0	1	97	17	278	1,356	
Count Total	0	327	0	73	0	0	0	8	0	39	878	2	0	6	992	138	2,463	0	
Peak Hour	All	0	211	0	50	0	0	0	5	0	19	510	1	0	3	548	86	1,433	0
	HV	0	1	0	0	0	0	0	4	0	2	10	0	0	3	15	2	37	0
	HV%	-	0%	-	0%	-	-	-	80%	-	11%	2%	0%	-	100%	3%	2%	3%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	2	1	3	0	0	3	1	4	1	0	0	0	1
7:15 AM	0	0	4	7	11	0	0	16	1	17	3	2	0	0	5
7:30 AM	0	0	2	6	8	0	0	1	0	1	3	0	0	0	3
7:45 AM	0	1	4	3	8	0	0	0	8	8	5	0	0	0	5
8:00 AM	0	0	3	7	10	0	0	3	1	4	4	0	0	0	4
8:15 AM	1	1	2	5	9	0	0	3	3	6	3	2	0	0	5
8:30 AM	0	2	3	5	10	0	0	0	2	2	1	0	0	0	1
8:45 AM	0	0	2	6	8	0	0	1	1	2	0	0	0	0	0
Count Total	1	4	22	40	67	0	0	27	17	44	20	4	0	0	24
Peak Hour	1	4	12	20	37	0	0	6	14	20	13	2	0	0	15

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	La Mesa Dr				Driveway (Jeep Trail)				Alpine Rd				Alpine Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	3	0
7:15 AM	0	0	0	0	0	0	0	0	0	1	3	0	0	0	6	1	11	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	6	0	8	0
7:45 AM	0	0	0	0	0	0	0	1	0	1	3	0	0	1	2	0	8	30
8:00 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	1	4	2	10	37
8:15 AM	0	1	0	0	0	0	0	1	0	0	2	0	0	1	4	0	9	35
8:30 AM	0	0	0	0	0	0	0	2	0	1	2	0	0	0	5	0	10	37
8:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	6	0	8	37
Count Total	0	1	0	0	0	0	0	4	0	4	18	0	0	3	33	4	67	0
Peak Hour	0	1	0	0	0	0	0	4	0	2	10	0	0	3	15	2	37	0
Two-Hour Count Summaries - Bikes																		
Interval Start	La Mesa Dr			Driveway (Jeep Trail)			Alpine Rd			Alpine Rd			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	0	0	0	3	0	0	1	0	4	0				
7:15 AM	0	0	0	0	0	0	0	16	0	0	1	0	17	0				
7:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	0				
7:45 AM	0	0	0	0	0	0	0	0	0	0	8	0	8	30				
8:00 AM	0	0	0	0	0	0	1	2	0	0	1	0	4	30				
8:15 AM	0	0	0	0	0	0	0	3	0	0	3	0	6	19				
8:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	2	20				
8:45 AM	0	0	0	0	0	0	0	1	0	0	1	0	2	14				
Count Total	0	0	0	0	0	0	1	26	0	0	17	0	44	0				
Peak Hour	0	0	0	0	0	0	1	5	0	0	14	0	20	0				
Note: U-Turn volumes for bikes are included in Left-Turn, if any.																		



**Two-Hour Count Summaries**

Interval Start	La Mesa Dr				Driveway (Jeep Trail)				Alpine Rd				Alpine Rd				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	27	0	12	0	0	0	1	0	8	158	0	0	1	122	22	351	0	
4:15 PM	0	40	0	10	0	0	0	3	0	7	116	1	0	0	111	22	310	0	
4:30 PM	0	34	0	6	0	0	1	1	0	10	130	1	0	1	130	22	336	0	
4:45 PM	0	32	0	7	0	0	0	0	0	7	112	0	0	0	133	17	308	1,305	
5:00 PM	0	40	1	14	0	0	0	1	0	8	117	0	0	1	115	24	321	1,275	
5:15 PM	0	20	0	9	0	0	0	0	0	19	106	0	0	0	118	17	289	1,254	
5:30 PM	0	34	0	10	0	0	0	0	0	16	94	0	0	0	125	23	302	1,220	
5:45 PM	0	25	0	7	0	0	1	1	0	10	66	0	0	1	118	33	262	1,174	
Count Total	0	252	1	75	0	0	2	7	0	85	899	2	0	4	972	180	2,479	0	
Peak Hour	All	0	133	0	35	0	0	1	5	0	32	516	2	0	2	496	83	1,305	0
	HV	0	2	0	2	0	0	0	0	0	0	10	0	0	0	4	0	18	0
	HV%	-	2%	-	6%	-	-	0%	0%	-	0%	2%	0%	-	0%	1%	0%	1%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	0	2	2	5	0	0	1	4	5	1	0	0	0	1
4:15 PM	1	0	3	0	4	0	0	5	1	6	2	0	0	0	2
4:30 PM	1	0	3	1	5	0	0	4	2	6	1	0	0	0	1
4:45 PM	1	0	2	1	4	0	0	4	3	7	4	0	0	0	4
5:00 PM	0	0	1	1	2	0	1	1	1	3	2	0	0	0	2
5:15 PM	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1
5:30 PM	0	0	3	0	3	0	0	2	0	2	6	0	0	0	6
5:45 PM	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0
Count Total	4	0	16	6	26	0	1	17	11	29	17	0	0	0	17
Peak Hour	4	0	10	4	18	0	0	14	10	24	8	0	0	0	8

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	La Mesa Dr				Driveway (Jeep Trail)				Alpine Rd				Alpine Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	1	0	0	0	0	0	0	2	0	0	0	2	0	5	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	4	0
4:30 PM	0	0	0	1	0	0	0	0	0	0	3	0	0	0	1	0	5	0
4:45 PM	0	1	0	0	0	0	0	0	0	0	2	0	0	0	1	0	4	18
5:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2	15
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	12
5:30 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	10
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	8
Count Total	0	2	0	2	0	0	0	0	0	1	15	0	0	0	5	1	26	0
Peak Hour	0	2	0	2	0	0	0	0	0	0	10	0	0	0	4	0	18	0

Two-Hour Count Summaries - Bikes														
Interval Start	La Mesa Dr			Driveway (Jeep Trail)			Alpine Rd			Alpine Rd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	1	0	0	3	1	5	0
4:15 PM	0	0	0	0	0	0	1	4	0	0	1	0	6	0
4:30 PM	0	0	0	0	0	0	0	4	0	0	2	0	6	0
4:45 PM	0	0	0	0	0	0	0	4	0	0	3	0	7	24
5:00 PM	0	0	0	0	0	1	0	0	1	0	0	1	3	22
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	16
5:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	2	12
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Count Total	0	0	0	0	0	1	1	15	1	0	9	2	29	0
Peak Hour	0	0	0	0	0	0	1	13	0	0	9	1	24	0

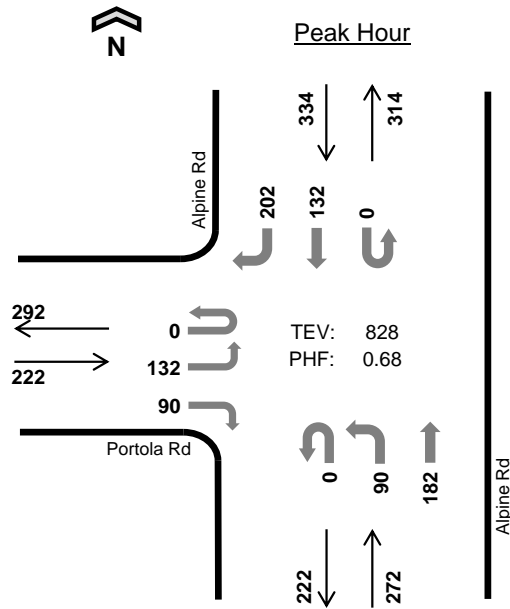
Note: U-Turn volumes for bikes are included in Left-Turn, if any.



### Alpine Rd Portola Rd

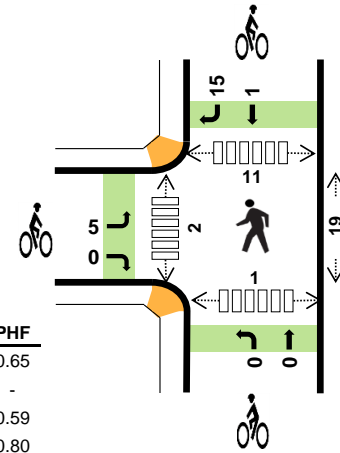


Date: 11-21-2019  
 Count Period: 7:00 AM to 9:00 AM  
 Peak Hour: 7:30 AM to 8:30 AM



TEV: 828  
 PHF: 0.68

	HV %:	PHF
EB	2.3%	0.65
WB	-	-
NB	1.8%	0.59
SB	1.8%	0.80
TOTAL	1.9%	0.68



#### Two-Hour Count Summaries

Interval Start	Portola Rd				0				Alpine Rd				Alpine Rd				15-min Total	Rolling One Hour	
	Eastbound		Westbound		Northbound		Southbound		UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	22	0	0	0	0	0	0	0	0	16	0	0	0	10	31	79	0	
7:15 AM	0	34	0	1	0	0	0	0	0	6	23	0	0	0	22	56	142	0	
7:30 AM	0	23	0	20	0	0	0	0	0	9	45	0	0	0	42	31	170	0	
7:45 AM	0	29	0	57	0	0	0	0	0	54	62	0	0	0	61	43	306	697	
8:00 AM	0	36	0	9	0	0	0	0	0	26	50	0	0	0	16	41	178	796	
8:15 AM	0	44	0	4	0	0	0	0	0	1	25	0	0	0	13	87	174	828	
8:30 AM	0	61	0	5	0	0	0	0	0	2	15	0	0	0	16	34	133	791	
8:45 AM	0	29	0	3	0	0	0	0	0	5	20	0	0	0	22	47	126	611	
Count Total	0	278	0	99	0	0	0	0	0	103	256	0	0	0	202	370	1,308	0	
Peak Hour	All	0	132	0	90	0	0	0	0	0	90	182	0	0	0	132	202	828	0
	HV	0	2	0	3	0	0	0	0	0	2	3	0	0	0	4	2	16	0
	HV%	-	2%	-	3%	-	-	-	-	-	2%	2%	-	-	-	3%	1%	2%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	2	0	1	2	5	8	0	1	1	10	1	0	1	0	2
7:15 AM	0	0	0	1	1	28	0	0	4	32	0	1	1	0	2
7:30 AM	1	0	1	3	5	1	0	0	4	5	10	2	9	0	21
7:45 AM	1	0	2	2	5	1	0	0	3	4	3	0	2	1	6
8:00 AM	2	0	1	0	3	1	0	0	7	8	4	0	0	0	4
8:15 AM	1	0	1	1	3	2	0	0	2	4	2	0	0	0	2
8:30 AM	1	0	0	2	3	2	0	0	4	6	0	0	0	1	1
8:45 AM	0	0	1	3	4	2	0	0	3	5	3	1	2	1	7
Count Total	8	0	7	14	29	45	0	1	28	74	23	4	15	3	45
Peak Hr	5	0	5	6	16	5	0	0	16	21	19	2	11	1	33

<b>Two-Hour Count Summaries - Heavy Vehicles</b>																		
Interval Start	Portola Rd				0				Alpine Rd				Alpine Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	2	5	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
7:30 AM	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2	1	5	0
7:45 AM	0	1	0	0	0	0	0	0	0	2	0	0	0	0	1	1	5	16
8:00 AM	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	3	14
8:15 AM	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	3	16
8:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	14
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	1	4	13
Count Total	0	5	0	3	0	0	0	0	0	3	4	0	0	0	7	7	29	0
Peak Hour	0	2	0	3	0	0	0	0	0	2	3	0	0	0	4	2	16	0

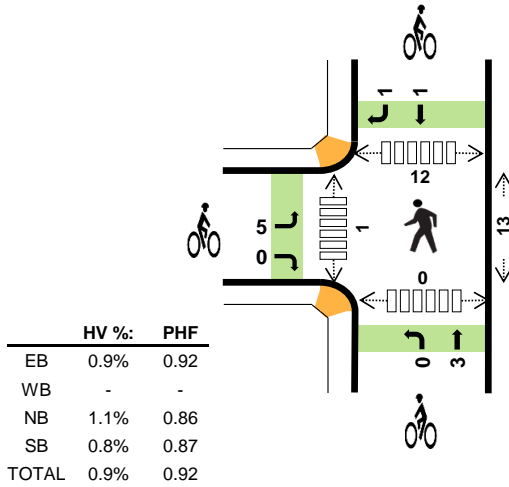
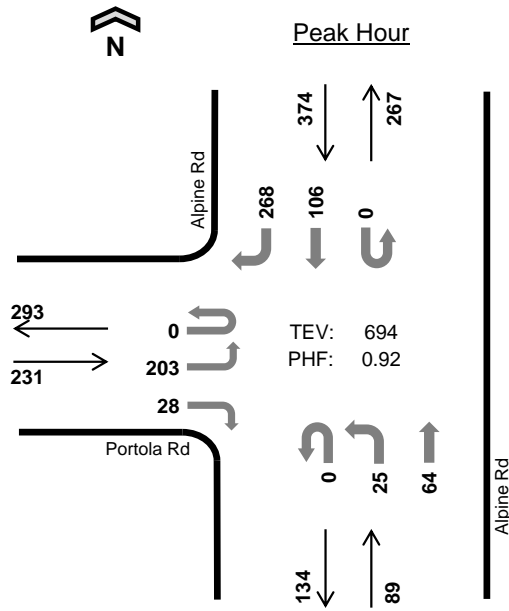
<b>Two-Hour Count Summaries - Bikes</b>																		
Interval Start	Portola Rd				0				Alpine Rd				Alpine Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT			
7:00 AM	8	0	0	0	0	0	0	0	0	1	0	0	0	0	1	10	0	
7:15 AM	27	0	1	0	0	0	0	0	0	0	0	0	0	0	4	32	0	
7:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	3	5	0	
7:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4	51	
8:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7	8	49	
8:15 AM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	21	
8:30 AM	2	0	0	0	0	0	0	0	0	0	0	0	0	1	3	6	22	
8:45 AM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5	23	
Count Total	44	0	1	0	0	0	0	0	1	0	0	0	0	2	26	74	0	
Peak Hour	5	0	0	0	0	0	0	0	0	0	0	0	0	1	15	21	0	

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

### Alpine Rd Portola Rd



Date: 11-21-2019  
 Count Period: 4:00 PM to 6:00 PM  
 Peak Hour: 4:30 PM to 5:30 PM



#### Two-Hour Count Summaries

Interval Start	Portola Rd				0				Alpine Rd				Alpine Rd				15-min Total	Rolling One Hour	
	Eastbound		Westbound		Northbound		Southbound		UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	45	0	3	0	0	0	0	0	6	22	0	0	0	22	47	145	0	
4:15 PM	0	47	0	8	0	0	0	0	0	4	24	0	0	0	27	39	149	0	
4:30 PM	0	46	0	12	0	0	0	0	0	10	10	0	0	0	32	64	174	0	
4:45 PM	0	46	0	4	0	0	0	0	0	4	22	0	0	0	22	63	161	629	
5:00 PM	0	55	0	5	0	0	0	0	0	6	19	0	0	0	15	70	170	654	
5:15 PM	0	56	0	7	0	0	0	0	0	5	13	0	0	0	37	71	189	694	
5:30 PM	0	48	0	4	0	0	0	0	0	2	15	0	0	0	27	57	153	673	
5:45 PM	0	25	0	2	0	0	0	0	0	4	18	0	0	0	27	56	132	644	
Count Total	0	368	0	45	0	0	0	0	0	41	143	0	0	0	209	467	1,273	0	
Peak Hour	All	0	203	0	28	0	0	0	0	0	25	64	0	0	0	106	268	694	0
	HV	0	0	0	2	0	0	0	0	0	0	1	0	0	0	1	2	6	0
	HV%	-	0%	-	7%	-	-	-	-	-	0%	2%	-	-	-	1%	1%	1%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	3	2	5	3	0	3	3	9	3	1	3	0	7
4:15 PM	1	0	0	0	1	0	0	1	0	1	2	0	0	0	2
4:30 PM	2	0	0	3	5	1	0	1	0	2	5	0	3	0	8
4:45 PM	0	0	0	0	0	2	0	2	0	4	5	0	3	0	8
5:00 PM	0	0	1	0	1	1	0	0	1	2	2	1	5	0	8
5:15 PM	0	0	0	0	0	1	0	0	1	2	1	0	1	0	2
5:30 PM	0	0	0	1	1	0	0	0	0	0	1	0	2	0	3
5:45 PM	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0
Count Total	3	0	6	6	15	8	0	7	5	20	19	2	17	0	38
Peak Hr	2	0	1	3	6	5	0	3	2	10	13	1	12	0	26

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Portola Rd				0				Alpine Rd				15-min Total	Rolling One Hour				
	Eastbound				Westbound				Northbound						Southbound			
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	1	5	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
4:30 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	2	5	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	7
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	4
Count Total	0	1	0	2	0	0	0	0	0	0	6	0	0	0	3	3	15	0
Peak Hour	0	0	0	2	0	0	0	0	0	0	1	0	0	0	1	2	6	0

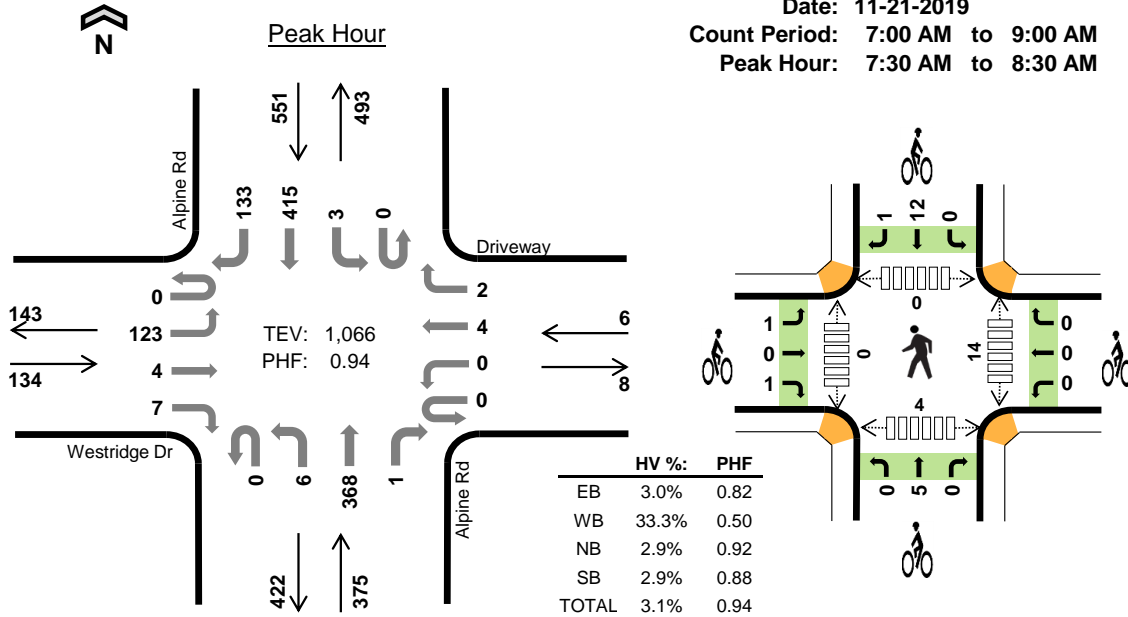
Two-Hour Count Summaries - Bikes															
Interval Start	Portola Rd				0				Alpine Rd				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound						Southbound
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
4:00 PM	2	0	1	0	0	0	0	3	0	0	1	2	9	0	
4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0	
4:30 PM	1	0	0	0	0	0	0	1	0	0	0	0	2	0	
4:45 PM	2	0	0	0	0	0	0	2	0	0	0	0	4	16	
5:00 PM	1	0	0	0	0	0	0	0	0	0	0	1	2	9	
5:15 PM	1	0	0	0	0	0	0	0	0	0	1	0	2	10	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	8	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Count Total	7	0	1	0	0	0	0	7	0	0	2	3	20	0	
Peak Hour	5	0	0	0	0	0	0	3	0	0	1	1	10	0	

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

### Alpine Rd Westridge Dr



Date: 11-21-2019  
 Count Period: 7:00 AM to 9:00 AM  
 Peak Hour: 7:30 AM to 8:30 AM



#### Two-Hour Count Summaries

Interval Start	Westridge Dr				Driveway				Alpine Rd				Alpine Rd				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	15	0	0	0	0	1	0	0	1	48	0	0	1	68	29	163	0	
7:15 AM	0	24	0	2	0	0	0	0	0	1	64	0	0	2	80	40	213	0	
7:30 AM	0	19	0	3	0	0	1	0	0	2	100	0	0	2	88	41	256	0	
7:45 AM	0	27	0	4	0	0	2	1	0	2	92	1	0	1	118	37	285	917	
8:00 AM	0	39	2	0	0	0	0	1	0	2	99	0	0	0	95	30	268	1,022	
8:15 AM	0	38	2	0	0	0	1	0	0	0	77	0	0	0	114	25	257	1,066	
8:30 AM	0	29	0	2	0	0	0	1	0	1	91	0	0	1	96	33	254	1,064	
8:45 AM	0	34	0	1	0	0	0	1	0	3	73	0	0	0	78	24	214	993	
Count Total	0	225	4	12	0	0	5	4	0	12	644	1	0	7	737	259	1,910	0	
Peak Hour	All	0	123	4	7	0	0	4	2	0	6	368	1	0	3	415	133	1,066	0
	HV	0	1	2	1	0	0	2	0	0	2	9	0	0	1	11	4	33	0
	HV%	-	1%	50%	14%	-	-	50%	0%	-	33%	2%	0%	-	33%	3%	3%	3%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	1	0	1	0	0	2	1	3	4	0	0	0	4
7:15 AM	0	0	3	4	7	0	0	18	1	19	6	0	0	3	9
7:30 AM	1	0	2	5	8	1	0	0	1	2	2	0	0	1	3
7:45 AM	0	1	6	4	11	0	0	1	8	9	3	0	0	0	3
8:00 AM	1	0	3	3	7	1	0	1	1	3	7	0	0	3	10
8:15 AM	2	1	0	4	7	0	0	3	3	6	2	0	0	0	2
8:30 AM	0	1	2	5	8	0	0	1	2	3	0	0	0	1	1
8:45 AM	1	0	3	6	10	0	0	1	1	2	1	0	0	0	1
Count Total	5	3	20	31	59	2	0	27	18	47	25	0	0	8	33
Peak Hour	4	2	11	16	33	2	0	5	13	20	14	0	0	4	18

<b>Two-Hour Count Summaries - Heavy Vehicles</b>																		
Interval Start	Westridge Dr				Driveway				Alpine Rd				Alpine Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	1	7	0
7:30 AM	0	0	0	1	0	0	0	0	0	0	2	0	0	1	3	1	8	0
7:45 AM	0	0	0	0	0	0	1	0	0	2	4	0	0	0	3	1	11	27
8:00 AM	0	0	1	0	0	0	0	0	0	0	3	0	0	0	2	1	7	33
8:15 AM	0	1	1	0	0	0	1	0	0	0	0	0	0	0	3	1	7	33
8:30 AM	0	0	0	0	0	0	0	1	0	0	2	0	0	0	5	0	8	33
8:45 AM	0	1	0	0	0	0	0	0	0	1	2	0	0	0	4	2	10	32
Count Total	0	2	2	1	0	0	2	1	0	3	17	0	0	1	23	7	59	0
Peak Hour	0	1	2	1	0	0	2	0	0	2	9	0	0	1	11	4	33	0

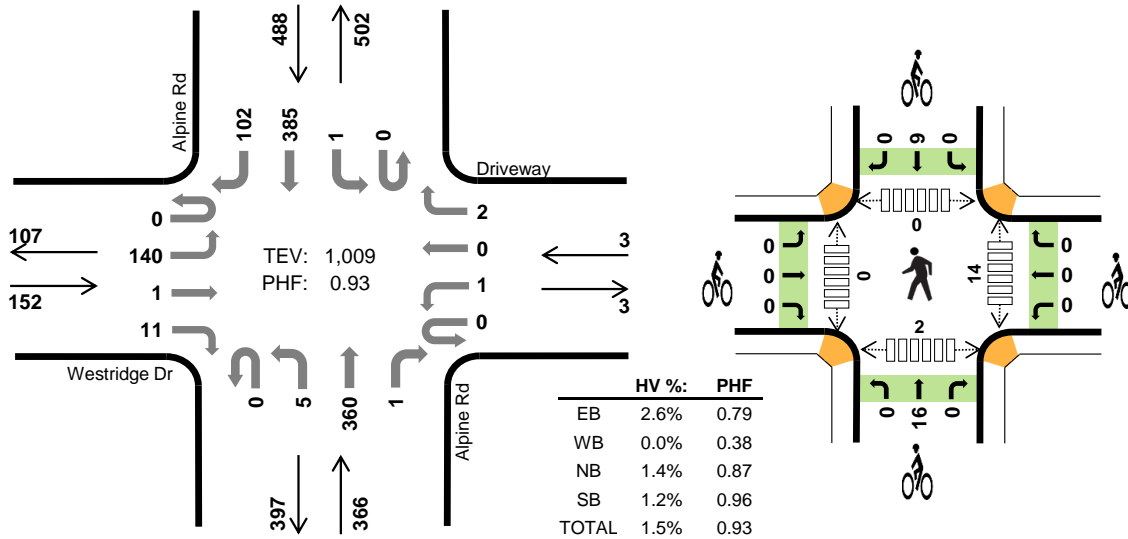
<b>Two-Hour Count Summaries - Bikes</b>														
Interval Start	Westridge Dr			Driveway			Alpine Rd			Alpine Rd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	2	0	0	1	0	3	0
7:15 AM	0	0	0	0	0	0	0	18	0	0	1	0	19	0
7:30 AM	0	0	1	0	0	0	0	0	0	0	0	1	2	0
7:45 AM	0	0	0	0	0	0	0	1	0	0	8	0	9	33
8:00 AM	1	0	0	0	0	0	0	1	0	0	1	0	3	33
8:15 AM	0	0	0	0	0	0	0	3	0	0	3	0	6	20
8:30 AM	0	0	0	0	0	0	0	1	0	0	2	0	3	21
8:45 AM	0	0	0	0	0	0	0	1	0	0	1	0	2	14
Count Total	1	0	1	0	0	0	0	27	0	0	17	1	47	0
Peak Hour	1	0	1	0	0	0	0	5	0	0	12	1	20	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

### Alpine Rd Westridge Dr



Date: 11-21-2019  
 Count Period: 4:00 PM to 6:00 PM  
 Peak Hour: 4:00 PM to 5:00 PM



#### Two-Hour Count Summaries

Interval Start	Westridge Dr				Driveway				Alpine Rd				Alpine Rd				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	45	0	3	0	0	0	0	0	2	103	0	0	1	93	24	271	0	
4:15 PM	0	36	0	2	0	0	0	1	0	0	90	0	0	0	93	27	249	0	
4:30 PM	0	34	0	3	0	0	0	0	0	1	94	0	0	0	98	25	255	0	
4:45 PM	0	25	1	3	0	1	0	1	0	2	73	1	0	0	101	26	234	1,009	
5:00 PM	0	19	0	1	0	0	0	0	0	2	95	0	0	0	88	26	231	969	
5:15 PM	0	17	0	3	0	1	0	0	0	4	94	1	0	0	100	21	241	961	
5:30 PM	0	16	0	2	0	1	0	0	0	4	77	0	0	0	93	35	228	934	
5:45 PM	0	14	0	1	0	0	0	0	0	1	45	0	0	0	98	22	181	881	
Count Total	0	206	1	18	0	3	0	2	0	16	671	2	0	1	764	206	1,890	0	
Peak Hour	All	0	140	1	11	0	1	0	2	0	5	360	1	0	1	385	102	1,009	0
	HV	0	4	0	0	0	0	0	0	0	0	5	0	0	0	4	2	15	0
	HV%	-	3%	0%	0%	-	0%	-	0%	-	0%	1%	0%	-	0%	1%	2%	1%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	1	3	4	0	0	2	0	2	0	0	0	0	0
4:15 PM	0	0	3	0	3	0	0	4	4	8	4	0	0	1	5
4:30 PM	3	0	0	2	5	0	0	5	1	6	7	0	0	1	8
4:45 PM	1	0	1	1	3	0	0	5	4	9	3	0	0	0	3
5:00 PM	1	0	0	0	1	0	0	1	1	2	0	0	0	0	0
5:15 PM	0	0	1	1	2	0	0	1	0	1	0	0	0	0	0
5:30 PM	0	0	3	0	3	0	0	1	0	1	1	0	0	0	1
5:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
Count Total	5	0	10	7	22	0	0	19	10	29	15	0	0	2	17
Peak Hour	4	0	5	6	15	0	0	16	9	25	14	0	0	2	16

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Westridge Dr				Driveway				Alpine Rd				15-min Total	Rolling One Hour				
	Eastbound				Westbound				Northbound						Southbound			
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			UT	LT	TH	RT
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	4	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	0
4:30 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	1	5	0
4:45 PM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	3	15
5:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	12
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	11
5:30 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	9
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	7
Count Total	0	5	0	0	0	0	0	0	0	0	10	0	0	0	4	3	22	0
Peak Hour	0	4	0	0	0	0	0	0	0	0	5	0	0	0	4	2	15	0

Two-Hour Count Summaries - Bikes														
Interval Start	Westridge Dr			Driveway			Alpine Rd			Alpine Rd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	2	0	0	0	0	2	0
4:15 PM	0	0	0	0	0	0	0	4	0	0	4	0	8	0
4:30 PM	0	0	0	0	0	0	0	5	0	0	1	0	6	0
4:45 PM	0	0	0	0	0	0	0	5	0	0	4	0	9	25
5:00 PM	0	0	0	0	0	0	0	1	0	0	1	0	2	25
5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	18
5:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	13
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Count Total	0	0	0	0	0	0	0	19	0	0	10	0	29	0
Peak Hour	0	0	0	0	0	0	0	16	0	0	9	0	25	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



**Apendix B**  
**Level of Service Calculations**

Intersection	
Intersection Delay, s/veh	19.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↔		↔	↑↑			↑↑	
Traffic Vol, veh/h	0	0	0	284	1	0	284	641	0	0	593	0
Future Vol, veh/h	0	0	0	284	1	0	284	641	0	0	593	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	284	1	0	284	641	0	0	593	0
Number of Lanes	0	0	0	0	1	0	1	2	0	0	2	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	3
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	3	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	1	0
HCM Control Delay	26.3	17	19.7
HCM LOS	D	C	C

Lane	NBLn1	NBLn2	NBLn3	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	100%	0%	100%	100%
Vol Right, %	0%	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	284	321	321	285	297	297
LT Vol	284	0	0	284	0	0
Through Vol	0	321	321	1	297	297
RT Vol	0	0	0	0	0	0
Lane Flow Rate	284	320	320	285	296	296
Geometry Grp	7	7	7	7	8	8
Degree of Util (X)	0.58	0.609	0.451	0.664	0.651	0.504
Departure Headway (Hd)	7.356	6.844	5.067	8.386	7.905	6.118
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	491	529	708	430	457	587
Service Time	5.097	4.584	2.807	6.129	5.653	3.866
HCM Lane V/C Ratio	0.578	0.605	0.452	0.663	0.648	0.504
HCM Control Delay	19.8	19.7	11.9	26.3	24.3	15
HCM Lane LOS	C	C	B	D	C	B
HCM 95th-tile Q	3.6	4	2.4	4.7	4.5	2.8

Intersection						
Int Delay, s/veh	11.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗		↕	↕	
Traffic Vol, veh/h	346	389	0	625	480	0
Future Vol, veh/h	346	389	0	625	480	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	Free
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	346	389	0	625	480	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	793	480	-	0	-	0
Stage 1	480	-	-	-	-	-
Stage 2	313	-	-	-	-	-
Critical Hdwy	6.63	6.23	-	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	-	-
Pot Cap-1 Maneuver	~341	585	0	-	-	0
Stage 1	621	-	0	-	-	0
Stage 2	715	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	~341	585	-	-	-	-
Mov Cap-2 Maneuver	457	-	-	-	-	-
Stage 1	621	-	-	-	-	-
Stage 2	715	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	27.7	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	457	585	-
HCM Lane V/C Ratio	-	0.757	0.665	-
HCM Control Delay (s)	-	33.5	22.5	-
HCM Lane LOS	-	D	C	-
HCM 95th %tile Q(veh)	-	6.4	5	-

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

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↗	↖
Traffic Vol, veh/h	123	5	21	700	638	206
Future Vol, veh/h	123	5	21	700	638	206
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	0	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	123	5	21	700	638	206

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1380	638	844	0	-	0
Stage 1	638	-	-	-	-	-
Stage 2	742	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	159	477	792	-	-	-
Stage 1	526	-	-	-	-	-
Stage 2	471	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	155	477	792	-	-	-
Mov Cap-2 Maneuver	294	-	-	-	-	-
Stage 1	512	-	-	-	-	-
Stage 2	471	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25.3	0.3	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	792	-	294	477	-	-
HCM Lane V/C Ratio	0.027	-	0.418	0.01	-	-
HCM Control Delay (s)	9.7	-	25.8	12.6	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	2	0	-	-

Intersection						
Int Delay, s/veh	4.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	211	50	19	516	551	86
Future Vol, veh/h	211	50	19	516	551	86
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	150	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	211	50	19	516	551	86

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1105	551	637	0	-	0
Stage 1	551	-	-	-	-	-
Stage 2	554	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	233	534	947	-	-	-
Stage 1	577	-	-	-	-	-
Stage 2	575	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	228	534	947	-	-	-
Mov Cap-2 Maneuver	364	-	-	-	-	-
Stage 1	565	-	-	-	-	-
Stage 2	575	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.8	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	947	-	364	534	-	-
HCM Lane V/C Ratio	0.02	-	0.58	0.094	-	-
HCM Control Delay (s)	8.9	-	27.7	12.4	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	3.5	0.3	-	-

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔		↖	↗			↖	↗
Traffic Vol, veh/h	123	4	7	0	4	2	6	368	1	3	415	133
Future Vol, veh/h	123	4	7	0	4	2	6	368	1	3	415	133
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	100	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	123	4	7	0	4	2	6	368	1	3	415	133

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	805	802	415	874	935	369	548	0	0	369	0	0
Stage 1	421	421	-	381	381	-	-	-	-	-	-	-
Stage 2	384	381	-	493	554	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	301	317	637	270	265	677	1021	-	-	1190	-	-
Stage 1	610	589	-	641	613	-	-	-	-	-	-	-
Stage 2	639	613	-	558	514	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	294	314	637	262	262	677	1021	-	-	1190	-	-
Mov Cap-2 Maneuver	294	314	-	262	262	-	-	-	-	-	-	-
Stage 1	606	587	-	637	609	-	-	-	-	-	-	-
Stage 2	629	609	-	546	512	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.3	16.1	0.1	0
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1021	-	-	295	637	329	1190	-	-
HCM Lane V/C Ratio	0.006	-	-	0.431	0.011	0.018	0.003	-	-
HCM Control Delay (s)	8.5	-	-	26.1	10.7	16.1	8	0	-
HCM Lane LOS	A	-	-	D	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2.1	0	0.1	0	-	-

Intersection						
Int Delay, s/veh	3.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T		T	T
Traffic Vol, veh/h	109	27	349	163	62	354
Future Vol, veh/h	109	27	349	163	62	354
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	109	27	349	163	62	354

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	909	431	0	0	512
Stage 1	431	-	-	-	-
Stage 2	478	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	305	624	-	-	1053
Stage 1	655	-	-	-	-
Stage 2	624	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	287	624	-	-	1053
Mov Cap-2 Maneuver	287	-	-	-	-
Stage 1	655	-	-	-	-
Stage 2	587	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.2	0	1.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	321	1053
HCM Lane V/C Ratio	-	-	0.424	0.059
HCM Control Delay (s)	-	-	24.2	8.6
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	2	0.2

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗
Traffic Vol, veh/h	132	90	90	182	132	202
Future Vol, veh/h	132	90	90	182	132	202
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	132	90	90	182	132	202
Number of Lanes	1	1	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	10.3	12.2	9.4
HCM LOS	B	B	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	33%	100%	0%	0%	0%
Vol Thru, %	67%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	272	132	90	132	202
LT Vol	90	132	0	0	0
Through Vol	182	0	0	132	0
RT Vol	0	0	90	0	202
Lane Flow Rate	272	132	90	132	202
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.407	0.237	0.131	0.2	0.267
Departure Headway (Hd)	5.392	6.452	5.24	5.457	4.75
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	664	552	676	652	749
Service Time	3.469	4.251	3.038	3.234	2.527
HCM Lane V/C Ratio	0.41	0.239	0.133	0.202	0.27
HCM Control Delay	12.2	11.3	8.8	9.6	9.3
HCM Lane LOS	B	B	A	A	A
HCM 95th-tile Q	2	0.9	0.4	0.7	1.1



Intersection	
Intersection Delay, s/veh	17.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↙		↘	↑↑			↑↑	
Traffic Vol, veh/h	0	0	0	166	7	0	287	366	0	0	825	0
Future Vol, veh/h	0	0	0	166	7	0	287	366	0	0	825	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	166	7	0	287	366	0	0	825	0
Number of Lanes	0	0	0	0	1	0	1	2	0	0	2	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	3
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	3	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	1	0
HCM Control Delay	15.9	13.6	21.5
HCM LOS	C	B	C

Lane	NBLn1	NBLn2	NBLn3	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	96%	0%	0%
Vol Thru, %	0%	100%	100%	4%	100%	100%
Vol Right, %	0%	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	287	183	183	173	413	413
LT Vol	287	0	0	166	0	0
Through Vol	0	183	183	7	413	413
RT Vol	0	0	0	0	0	0
Lane Flow Rate	287	183	183	173	412	412
Geometry Grp	7	7	7	7	8	8
Degree of Util (X)	0.545	0.322	0.232	0.387	0.771	0.569
Departure Headway (Hd)	6.834	6.326	4.563	8.063	6.732	4.97
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	525	565	780	445	536	718
Service Time	4.607	4.099	2.335	5.846	4.51	2.747
HCM Lane V/C Ratio	0.547	0.324	0.235	0.389	0.769	0.574
HCM Control Delay	17.6	12.1	8.7	15.9	28.8	14.2
HCM Lane LOS	C	B	A	C	D	B
HCM 95th-tile Q	3.2	1.4	0.9	1.8	6.9	3.6

Intersection						
Int Delay, s/veh	4.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗		↑↑	↑	
Traffic Vol, veh/h	87	279	0	557	467	0
Future Vol, veh/h	87	279	0	557	467	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	Free
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	87	279	0	557	467	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	746	467	-	0	-	0
Stage 1	467	-	-	-	-	-
Stage 2	279	-	-	-	-	-
Critical Hdwy	6.63	6.23	-	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	-	-
Pot Cap-1 Maneuver	365	595	0	-	-	0
Stage 1	630	-	0	-	-	0
Stage 2	744	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	365	595	-	-	-	-
Mov Cap-2 Maneuver	476	-	-	-	-	-
Stage 1	630	-	-	-	-	-
Stage 2	744	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	476	595	-
HCM Lane V/C Ratio	-	0.183	0.469	-
HCM Control Delay (s)	-	14.2	16.3	-
HCM Lane LOS	-	B	C	-
HCM 95th %tile Q(veh)	-	0.7	2.5	-

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	110	15	15	626	579	149
Future Vol, veh/h	110	15	15	626	579	149
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	0	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	110	15	15	626	579	149

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1235	579	728	0	-	0
Stage 1	579	-	-	-	-	-
Stage 2	656	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	195	515	876	-	-	-
Stage 1	560	-	-	-	-	-
Stage 2	516	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	192	515	876	-	-	-
Mov Cap-2 Maneuver	330	-	-	-	-	-
Stage 1	550	-	-	-	-	-
Stage 2	516	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.2	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	876	-	330	515	-	-
HCM Lane V/C Ratio	0.017	-	0.333	0.029	-	-
HCM Control Delay (s)	9.2	-	21.3	12.2	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.4	0.1	-	-

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	133	35	33	523	498	83
Future Vol, veh/h	133	35	33	523	498	83
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	150	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	133	35	33	523	498	83

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1087	498	581	0	-	0
Stage 1	498	-	-	-	-	-
Stage 2	589	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	239	572	993	-	-	-
Stage 1	611	-	-	-	-	-
Stage 2	554	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	231	572	993	-	-	-
Mov Cap-2 Maneuver	366	-	-	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	554	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.5	0.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	993	-	366	572	-	-
HCM Lane V/C Ratio	0.033	-	0.363	0.061	-	-
HCM Control Delay (s)	8.8	-	20.3	11.7	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.6	0.2	-	-

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔		↖	↗			↖	↗
Traffic Vol, veh/h	140	1	11	1	0	2	5	360	1	1	385	102
Future Vol, veh/h	140	1	11	1	0	2	5	360	1	1	385	102
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	100	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	140	1	11	1	0	2	5	360	1	1	385	102

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	759	758	385	815	860	361	487	0	0	361	0	0
Stage 1	387	387	-	371	371	-	-	-	-	-	-	-
Stage 2	372	371	-	444	489	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	323	336	663	296	294	684	1076	-	-	1198	-	-
Stage 1	637	610	-	649	620	-	-	-	-	-	-	-
Stage 2	648	620	-	593	549	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	321	334	663	289	292	684	1076	-	-	1198	-	-
Mov Cap-2 Maneuver	321	334	-	289	292	-	-	-	-	-	-	-
Stage 1	634	609	-	646	617	-	-	-	-	-	-	-
Stage 2	643	617	-	582	548	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.7	12.7	0.1	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1076	-	-	321	663	470	1198	-	-
HCM Lane V/C Ratio	0.005	-	-	0.439	0.017	0.006	0.001	-	-
HCM Control Delay (s)	8.4	-	-	24.7	10.5	12.7	8	0	-
HCM Lane LOS	A	-	-	C	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2.1	0.1	0	0	-	-

Intersection						
Int Delay, s/veh	7.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	173	82	279	144	58	346
Future Vol, veh/h	173	82	279	144	58	346
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	173	82	279	144	58	346

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	813	351	0	0	423
Stage 1	351	-	-	-	-
Stage 2	462	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	348	692	-	-	1136
Stage 1	713	-	-	-	-
Stage 2	634	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	330	692	-	-	1136
Mov Cap-2 Maneuver	330	-	-	-	-
Stage 1	713	-	-	-	-
Stage 2	602	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	29	0	1.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	397	1136
HCM Lane V/C Ratio	-	-	0.642	0.051
HCM Control Delay (s)	-	-	29	8.3
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	4.3	0.2

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗		↖	↗	↘
Traffic Vol, veh/h	203	28	25	64	106	268
Future Vol, veh/h	203	28	25	64	106	268
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	203	28	25	64	106	268
Number of Lanes	1	1	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	11.6	9.4	9.6
HCM LOS	B	A	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	28%	100%	0%	0%	0%
Vol Thru, %	72%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	89	203	28	106	268
LT Vol	25	203	0	0	0
Through Vol	64	0	0	106	0
RT Vol	0	0	28	0	268
Lane Flow Rate	89	203	28	106	268
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.136	0.343	0.038	0.157	0.344
Departure Headway (Hd)	5.494	6.091	4.883	5.328	4.623
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	649	587	727	671	775
Service Time	3.56	3.866	2.657	3.074	2.369
HCM Lane V/C Ratio	0.137	0.346	0.039	0.158	0.346
HCM Control Delay	9.4	12.1	7.9	9.1	9.8
HCM Lane LOS	A	B	A	A	A
HCM 95th-tile Q	0.5	1.5	0.1	0.6	1.5

Intersection	
Intersection Delay, s/veh	19.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↔		↔	↑↑			↑↑	
Traffic Vol, veh/h	0	0	0	285	1	0	288	649	0	0	595	0
Future Vol, veh/h	0	0	0	285	1	0	288	649	0	0	595	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	285	1	0	288	649	0	0	595	0
Number of Lanes	0	0	0	0	1	0	1	2	0	0	2	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	3
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	3	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	1	0
HCM Control Delay	26.6	17.4	19.9
HCM LOS	D	C	C

Lane	NBLn1	NBLn2	NBLn3	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	100%	0%	100%	100%
Vol Right, %	0%	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	288	325	325	286	298	298
LT Vol	288	0	0	285	0	0
Through Vol	0	325	325	1	298	298
RT Vol	0	0	0	0	0	0
Lane Flow Rate	288	324	324	286	298	298
Geometry Grp	7	7	7	7	8	8
Degree of Util (X)	0.59	0.619	0.458	0.668	0.656	0.508
Departure Headway (Hd)	7.374	6.862	5.085	8.411	7.937	6.15
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	490	526	707	429	455	586
Service Time	5.113	4.6	2.823	6.158	5.686	3.899
HCM Lane V/C Ratio	0.588	0.616	0.458	0.667	0.655	0.509
HCM Control Delay	20.2	20.2	12.1	26.6	24.7	15.1
HCM Lane LOS	C	C	B	D	C	C
HCM 95th-tile Q	3.8	4.2	2.4	4.8	4.6	2.9



Intersection						
Int Delay, s/veh	11.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗		↑↑	↑	
Traffic Vol, veh/h	346	390	0	637	484	0
Future Vol, veh/h	346	390	0	637	484	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	Free
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	346	390	0	637	484	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	803	484	-	0	-	0
Stage 1	484	-	-	-	-	-
Stage 2	319	-	-	-	-	-
Critical Hdwy	6.63	6.23	-	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	-	-
Pot Cap-1 Maneuver	~ 336	582	0	-	-	0
Stage 1	619	-	0	-	-	0
Stage 2	710	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	~ 336	582	-	-	-	-
Mov Cap-2 Maneuver	454	-	-	-	-	-
Stage 1	619	-	-	-	-	-
Stage 2	710	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28.1	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	454	582	-
HCM Lane V/C Ratio	-	0.762	0.67	-
HCM Control Delay (s)	-	34.1	22.8	-
HCM Lane LOS	-	D	C	-
HCM 95th %tile Q(veh)	-	6.5	5	-

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

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↗	↖
Traffic Vol, veh/h	123	5	21	716	643	206
Future Vol, veh/h	123	5	21	716	643	206
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	0	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	123	5	21	716	643	206

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1401	643	849	0	-	0
Stage 1	643	-	-	-	-	-
Stage 2	758	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	154	473	789	-	-	-
Stage 1	523	-	-	-	-	-
Stage 2	463	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	150	473	789	-	-	-
Mov Cap-2 Maneuver	290	-	-	-	-	-
Stage 1	509	-	-	-	-	-
Stage 2	463	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25.8	0.3	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	789	-	290	473	-	-
HCM Lane V/C Ratio	0.027	-	0.424	0.011	-	-
HCM Control Delay (s)	9.7	-	26.3	12.7	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	2	0	-	-

Intersection						
Int Delay, s/veh	4.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	211	50	19	532	556	86
Future Vol, veh/h	211	50	19	532	556	86
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	150	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	211	50	19	532	556	86

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1126	556	642	0	-	0
Stage 1	556	-	-	-	-	-
Stage 2	570	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	227	531	943	-	-	-
Stage 1	574	-	-	-	-	-
Stage 2	566	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	222	531	943	-	-	-
Mov Cap-2 Maneuver	359	-	-	-	-	-
Stage 1	563	-	-	-	-	-
Stage 2	566	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25.4	0.3	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	943	-	359	531	-	-
HCM Lane V/C Ratio	0.02	-	0.588	0.094	-	-
HCM Control Delay (s)	8.9	-	28.4	12.5	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	3.6	0.3	-	-

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗	↖	↗			↖	↗
Traffic Vol, veh/h	123	4	7	0	4	2	6	384	1	3	420	133
Future Vol, veh/h	123	4	7	0	4	2	6	384	1	3	420	133
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	100	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	123	4	7	0	4	2	6	384	1	3	420	133

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	826	823	420	895	956	385	553	0	0	385	0	0
Stage 1	426	426	-	397	397	-	-	-	-	-	-	-
Stage 2	400	397	-	498	559	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	291	309	633	261	258	663	1017	-	-	1173	-	-
Stage 1	606	586	-	629	603	-	-	-	-	-	-	-
Stage 2	626	603	-	554	511	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	285	306	633	254	255	663	1017	-	-	1173	-	-
Mov Cap-2 Maneuver	285	306	-	254	255	-	-	-	-	-	-	-
Stage 1	602	584	-	625	599	-	-	-	-	-	-	-
Stage 2	616	599	-	542	509	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	26.4		16.4		0.1		0	
HCM LOS	D		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1017	-	-	286	633	321	1173	-	-
HCM Lane V/C Ratio	0.006	-	-	0.444	0.011	0.019	0.003	-	-
HCM Control Delay (s)	8.6	-	-	27.3	10.8	16.4	8.1	0	-
HCM Lane LOS	A	-	-	D	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2.2	0	0.1	0	-	-

Intersection						
Int Delay, s/veh	3.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	109	28	350	163	64	356
Future Vol, veh/h	109	28	350	163	64	356
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	109	28	350	163	64	356

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	916	432	0	0	513
Stage 1	432	-	-	-	-
Stage 2	484	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	302	624	-	-	1052
Stage 1	655	-	-	-	-
Stage 2	620	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	284	624	-	-	1052
Mov Cap-2 Maneuver	284	-	-	-	-
Stage 1	655	-	-	-	-
Stage 2	582	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.4	0	1.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	320	1052
HCM Lane V/C Ratio	-	-	0.428	0.061
HCM Control Delay (s)	-	-	24.4	8.6
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	2.1	0.2

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗
Traffic Vol, veh/h	133	90	90	182	132	204
Future Vol, veh/h	133	90	90	182	132	204
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	133	90	90	182	132	204
Number of Lanes	1	1	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	10.3	12.2	9.4
HCM LOS	B	B	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	33%	100%	0%	0%	0%
Vol Thru, %	67%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	272	133	90	132	204
LT Vol	90	133	0	0	0
Through Vol	182	0	0	132	0
RT Vol	0	0	90	0	204
Lane Flow Rate	272	133	90	132	204
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.408	0.239	0.131	0.2	0.269
Departure Headway (Hd)	5.398	6.459	5.247	5.462	4.755
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	661	551	675	652	749
Service Time	3.475	4.256	3.043	3.238	2.531
HCM Lane V/C Ratio	0.411	0.241	0.133	0.202	0.272
HCM Control Delay	12.2	11.3	8.8	9.6	9.3
HCM Lane LOS	B	B	A	A	A
HCM 95th-tile Q	2	0.9	0.4	0.7	1.1

Intersection	
Intersection Delay, s/veh	18.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶		↷	↶↷			↶↷	
Traffic Vol, veh/h	0	0	0	170	7	0	290	371	0	0	833	0
Future Vol, veh/h	0	0	0	170	7	0	290	371	0	0	833	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	170	7	0	290	371	0	0	833	0
Number of Lanes	0	0	0	0	1	0	1	2	0	0	2	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	3
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	3	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	1	0
HCM Control Delay	16.2	13.8	22.4
HCM LOS	C	B	C

Lane	NBLn1	NBLn2	NBLn3	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	96%	0%	0%
Vol Thru, %	0%	100%	100%	4%	100%	100%
Vol Right, %	0%	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	290	186	186	177	417	417
LT Vol	290	0	0	170	0	0
Through Vol	0	186	186	7	417	417
RT Vol	0	0	0	0	0	0
Lane Flow Rate	290	186	186	177	416	416
Geometry Grp	7	7	7	7	8	8
Degree of Util (X)	0.554	0.328	0.237	0.398	0.784	0.58
Departure Headway (Hd)	6.874	6.365	4.602	8.099	6.775	5.012
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	522	562	772	442	533	712
Service Time	4.652	4.143	2.378	5.884	4.557	2.793
HCM Lane V/C Ratio	0.556	0.331	0.241	0.4	0.78	0.584
HCM Control Delay	17.9	12.3	8.8	16.2	30.1	14.6
HCM Lane LOS	C	B	A	C	D	B
HCM 95th-tile Q	3.3	1.4	0.9	1.9	7.2	3.8

Intersection						
Int Delay, s/veh	4.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗		↑↑	↑	
Traffic Vol, veh/h	87	283	0	565	480	0
Future Vol, veh/h	87	283	0	565	480	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	Free
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	87	283	0	565	480	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	763	480	-	0	-	0
Stage 1	480	-	-	-	-	-
Stage 2	283	-	-	-	-	-
Critical Hdwy	6.63	6.23	-	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	-	-
Pot Cap-1 Maneuver	356	585	0	-	-	0
Stage 1	621	-	0	-	-	0
Stage 2	741	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	356	585	-	-	-	-
Mov Cap-2 Maneuver	468	-	-	-	-	-
Stage 1	621	-	-	-	-	-
Stage 2	741	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	468	585	-
HCM Lane V/C Ratio	-	0.186	0.484	-
HCM Control Delay (s)	-	14.4	16.8	-
HCM Lane LOS	-	B	C	-
HCM 95th %tile Q(veh)	-	0.7	2.6	-



Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↗	↖
Traffic Vol, veh/h	110	15	15	636	596	149
Future Vol, veh/h	110	15	15	636	596	149
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	0	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	110	15	15	636	596	149

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1262	596	745	0	-	0
Stage 1	596	-	-	-	-	-
Stage 2	666	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	188	504	863	-	-	-
Stage 1	550	-	-	-	-	-
Stage 2	511	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	185	504	863	-	-	-
Mov Cap-2 Maneuver	324	-	-	-	-	-
Stage 1	541	-	-	-	-	-
Stage 2	511	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.6	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	863	-	324	504	-	-
HCM Lane V/C Ratio	0.017	-	0.34	0.03	-	-
HCM Control Delay (s)	9.2	-	21.7	12.4	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.5	0.1	-	-

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↗	↖
Traffic Vol, veh/h	133	35	33	533	515	83
Future Vol, veh/h	133	35	33	533	515	83
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	150	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	133	35	33	533	515	83

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1114	515	598	0	-	0
Stage 1	515	-	-	-	-	-
Stage 2	599	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	230	560	979	-	-	-
Stage 1	600	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	222	560	979	-	-	-
Mov Cap-2 Maneuver	359	-	-	-	-	-
Stage 1	580	-	-	-	-	-
Stage 2	549	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.9	0.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	979	-	359	560	-	-
HCM Lane V/C Ratio	0.034	-	0.37	0.063	-	-
HCM Control Delay (s)	8.8	-	20.8	11.9	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.7	0.2	-	-

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔		↖	↗			↖	↗
Traffic Vol, veh/h	140	1	11	1	0	2	5	370	1	1	402	102
Future Vol, veh/h	140	1	11	1	0	2	5	370	1	1	402	102
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	100	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	140	1	11	1	0	2	5	370	1	1	402	102

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	786	785	402	842	887	371	504	0	0	371	0	0
Stage 1	404	404	-	381	381	-	-	-	-	-	-	-
Stage 2	382	381	-	461	506	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	310	325	648	284	283	675	1061	-	-	1188	-	-
Stage 1	623	599	-	641	613	-	-	-	-	-	-	-
Stage 2	640	613	-	581	540	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	308	323	648	277	281	675	1061	-	-	1188	-	-
Mov Cap-2 Maneuver	308	323	-	277	281	-	-	-	-	-	-	-
Stage 1	620	598	-	638	610	-	-	-	-	-	-	-
Stage 2	635	610	-	570	539	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	25.1		12.9		0.1		0	
HCM LOS	D		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1061	-	-	308	648	456	1188	-	-
HCM Lane V/C Ratio	0.005	-	-	0.458	0.017	0.007	0.001	-	-
HCM Control Delay (s)	8.4	-	-	26.2	10.7	12.9	8	0	-
HCM Lane LOS	A	-	-	D	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2.3	0.1	0	0	-	-

Intersection						
Int Delay, s/veh	7.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	173	84	281	144	59	347
Future Vol, veh/h	173	84	281	144	59	347
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	173	84	281	144	59	347

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	818	353	0	0	425
Stage 1	353	-	-	-	-
Stage 2	465	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	346	691	-	-	1134
Stage 1	711	-	-	-	-
Stage 2	632	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	328	691	-	-	1134
Mov Cap-2 Maneuver	328	-	-	-	-
Stage 1	711	-	-	-	-
Stage 2	599	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	29.4	0	1.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	396	1134
HCM Lane V/C Ratio	-	-	0.649	0.052
HCM Control Delay (s)	-	-	29.4	8.3
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	4.4	0.2

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗		↖	↗	↘
Traffic Vol, veh/h	205	28	25	64	106	269
Future Vol, veh/h	205	28	25	64	106	269
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	205	28	25	64	106	269
Number of Lanes	1	1	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	11.6	9.4	9.6
HCM LOS	B	A	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	28%	100%	0%	0%	0%
Vol Thru, %	72%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	89	205	28	106	269
LT Vol	25	205	0	0	0
Through Vol	64	0	0	106	0
RT Vol	0	0	28	0	269
Lane Flow Rate	89	205	28	106	269
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.136	0.347	0.038	0.157	0.346
Departure Headway (Hd)	5.503	6.093	4.885	5.336	4.631
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	648	586	726	671	775
Service Time	3.57	3.869	2.661	3.082	2.377
HCM Lane V/C Ratio	0.137	0.35	0.039	0.158	0.347
HCM Control Delay	9.4	12.1	7.9	9.1	9.8
HCM Lane LOS	A	B	A	A	A
HCM 95th-tile Q	0.5	1.5	0.1	0.6	1.5