

CHAPTER 7 TRANSPORTATION AND CIRCULATION

This chapter describes the results of the transportation impact analysis conducted to evaluate potential transportation-related impacts of Alternative A and Alternative B of the proposed Alpine Sierra Subdivision project on roadways, intersections, transit, and bicycle and pedestrian movements in the project vicinity. The analysis is based on the Traffic Impact Analysis prepared for Alternative A (LSC Transportation Consultants 2015), and the supplemental memo evaluating Alternative B (LSC Transportation Consultants 2014), which are included in Appendix E. Unless otherwise noted, the information presented in this chapter is taken from the Traffic Impact Analysis in Appendix E.

No comments regarding transportation were received in response to the Notice of Preparation (NOP) from any public agencies, including the California Department of Transportation (Caltrans). At the time that the NOP was published, the intersection of State Route (SR) 89/Alpine Meadows Road was not signalized. Comments on the NOP identified a desire for signalization, which has now been completed. Comments on the NOP also suggested that consideration should be given to the potential for accessing the site from Chalet Road.

Several comments were received that were specific to the Bear Creek Association Access Alternative that was considered in the NOP and Initial Study. As discussed in Chapter 1, Introduction, that alternative was determined to be infeasible and is no longer under consideration. Therefore, this Draft Environmental Impact Report (EIR) does not evaluate NOP comments related to that alternative, such as concerns related to site access and the safety of using John Scott Trail during the winter months with cars not able to navigate the hill during snow/ice conditions, increased traffic on John Scott Trail, and operations of various intersections along John Scott Trail and other roads within the Bear Creek Association and Alpine Meadows Estates subdivisions.

All of the concerns raised in the NOP comments that are not specific to the Bear Creek Association Access Alternative are addressed in this chapter. The Initial Study, NOP, and comments received are included in Appendix A.

7.1 EXISTING SETTING

7.1.1 Existing Roadways

SR-89

Regional access to the project site and the Alpine Meadows area is provided by SR-89, a two-lane undivided state route with shoulders and a posted speed limit of 45 miles per hour (mph) at its intersection with Alpine Meadows Road. SR-89 connects Truckee and the Interstate 80

corridor to the north with Squaw Valley, Alpine Meadows, and Tahoe City to the south. Traffic on SR-89 varies by season, with congestion primarily occurring during winter peak-demand periods due to adverse weather and ski area activity and secondarily occurring during summer PM peak periods. According to Caltrans, peak month average daily traffic on SR-89 in the project vicinity is 14,800 vehicles per day (Appendix E).

Alpine Meadows Road

Alpine Meadows Road, a small, two-lane undivided roadway with a posted speed limit of 35 mph, provides the only local access from SR-89 to the Alpine Meadows residential and recreational areas and the project site. Near the project site and throughout the area, narrow, privately owned and maintained roadways extend from Alpine Meadows Road to provide access to residences. These include John Scott Trail to the north of the project site and Chalet Road to the south.

7.1.2 Existing Public Transit Facilities

Tahoe Area Regional Transit (TART), operated by Placer County Department of Public Works, serves stops along SR-89 at Alpine Meadows Road as part of the Highway 89 Route between Tahoe City and Truckee. This service is operated in both directions every hour from 6:00 a.m. to 7:22 p.m. in the summer and from 6:00 a.m. to 6:30 p.m. in the winter and off seasons. In addition, the Night Rider service operated under contract of the Truckee–North Tahoe Transportation Management Association (TNT/TMA) provides hourly evening service from these stops to Squaw Valley and Tahoe City (and beyond) as late as 2:00 a.m. during the peak summer and winter months.

7.1.3 Private Shuttle Services

Squaw Valley Resort operates the Squaw Valley–Alpine Express every 20 minutes during periods of ski lift operations between the Alpine Meadows base area and the Squaw Valley Village area. This shuttle serves skiers at the two resorts.

The North Lake Tahoe Express is a shuttle service connecting the North Tahoe area (including Alpine Meadows) with the Reno Tahoe International Airport. This service, which offers three trips per day in each direction, provides an opportunity for visitors to access the Alpine Meadows area without the need to rent a car. Service is provided year-round, although fewer runs are offered in the off season.

7.1.4 Existing Bicycle and Pedestrian Facilities

There are no designated bicycle or pedestrian facilities along Alpine Meadows Road. The Tahoe City Public Utility District’s Truckee River Trail parallels SR-89 between Tahoe City and Squaw

Valley Road, crossing Alpine Meadows Road at grade just west of the intersection with SR-89. This trail is a paved Class I facility that accommodates cyclists and pedestrians. Along other roadways in the area, bicyclists and pedestrians share the right-of-way with vehicles.

7.1.5 Existing Traffic Conditions

Intersection traffic counts were conducted at two locations: SR-89 at Alpine Meadows Road and Alpine Meadows Road at the proposed intersection of Road A and Alpine Meadows Road.

The intersection of SR-89 at Alpine Meadows Road is a signalized intersection.

7.1.5.1 Existing Winter Traffic Conditions

AM and PM peak-hour winter turning-movement counts were conducted by LSC Transportation Consultants at the SR-89/Alpine Meadows Road intersection on Sunday, March 11, 2012, as a part of the Squaw Valley Traffic and Parking Analysis Project (LSC Transportation Consultants 2012, as cited in Appendix E). The AM peak hour occurred from 10:45 to 11:45 a.m. and the PM peak hour occurred from 3:15 to 4:15 p.m.

Based on a review of hourly traffic data for the entire winter of 2011/2012, winter traffic counts were adjusted to reflect the 30th-highest winter PM peak hour, and the volume of traffic turning to/from Alpine Meadows Road was estimated based on the 14th-highest skier day at the Alpine Meadows Ski Area as determined by a review of actual skier counts for the 2011/2012 ski season. This resulted in applying an adjustment factor of 1.6 to the winter peak-hour volumes on SR-89, and applying an adjustment factor of 1.7 to the turning movement volumes to/from Alpine Meadows Road.

7.1.5.2 Existing Summer Traffic Conditions

PM peak-hour summer turning-movement counts were conducted by LSC Transportation Consultants at the SR-89/Alpine Meadows Road intersection on Friday, August 12, 2011, as a part of the Squaw Valley Traffic and Parking Analysis Project. The PM peak hour occurred from 3:30 to 4:30 p.m.

An adjustment factor of approximately 1.02 was applied to the summer traffic volumes on SR-89 to reflect 30th-highest peak-hour conditions. This factor was estimated based on a review by Caltrans of 2006 hourly traffic volumes at a point on SR-89 immediately north of Squaw Valley Road (2006 was the most recent and complete set of data available, as the count station was not in full operation in more recent years). The summer traffic volumes on Alpine Meadows Road at the proposed site's access point were estimated based on the assumption that approximately 15%

of the traffic on Alpine Meadows Road near SR-89 has an origin or destination at a point on Alpine Meadows Road, south of the site's access point.

The adjusted count data was used to estimate 2014 traffic conditions by applying a growth factor to the 2011 and 2012 adjusted count data. The Traffic Impact Analysis indicates that Caltrans historical traffic data on SR-89 shows an increase in peak-month daily traffic volumes over the last 5 years of approximately 2% per year (Appendix E). Although this growth rate is based on winter peak-month daily traffic, the growth rate was applied to both the 2011 (summer) and 2012 (winter) traffic volumes to estimate 2014 conditions. The resulting existing summer and winter AM and PM peak-hour traffic volumes at the study intersections are shown on Figure 7-1, Existing Traffic Volumes.

7.2 REGULATORY SETTING

7.2.1 Federal Regulations

No federal regulations or laws pertaining to traffic and circulation are applicable to the proposed project.

7.2.2 State Regulations

Caltrans

According to the *SR-89 Transportation Corridor Concept Report* (Caltrans 2012), the minimum acceptable level of service (LOS) along the entire length of SR-89 over the next 20 years is "E."

7.2.3 Local Regulations

Placer County General Plan

According to the Placer County General Plan, Placer County's LOS standards for the state highway system "shall be no worse than those adopted in the Placer County Congestion Management Program" (Placer County 2013). The LOS standard in the Placer County Congestion Management Program for roadways and signalized intersections located along state highways is "E."

The Placer County General Plan includes the following basic goals related to transportation and circulation (Placer County 2013), and Appendix C of this Draft EIR provides an evaluation of the project's consistency with applicable general plan policies.

Streets and Highways

Goal 3.A: To provide for the long-range planning and development of the County’s roadway system to ensure the safe and efficient movement of people and goods.

This goal is supported by several policies that establish performance standards and acceptable levels of service. Policy 3.A.7 identifies the minimum levels of service for the County roadway system, as follows:

- a. LOS “C” on rural roadways, except within one-half mile of state highways where the standard shall be LOS “D.”
- b. LOS “C” on urban/suburban roadways except within one-half mile of state highways where the standard shall be LOS “D.”
- c. An LOS no worse than specified in the Placer County Congestion Management Program (CMP) for the state highway system.

Policy 3.A.6: The County shall require all new development to provide off-street parking for the required number of parking spaces, either on site or in consolidated lots or structures.

Policy 3.A.9: The County shall strive to meet the level of service standards through a balanced transportation system that provides alternatives to the automobile.

Policy 3.A.13: The County shall assess fees on new development sufficient to cover the fair-share portion of that development’s impacts on the local and regional transportation system. Exceptions may be made when new development generates significant public benefits (e.g., low-income housing, needed health facilities) and when alternative sources of funding can be identified to offset foregone revenues.

Transit/Alternative Modes of Transportation

Goal 3.B: To promote a safe and efficient mass transit system, including both rail and bus, to reduce congestion, improve the environment, and provide viable non-automotive means of transportation in and through Placer County.

Policy 3.B.9: The County shall require development of transit services by ski resorts and other recreational providers in the Sierra to meet existing and future recreational demand.

Non-Motorized Transportation

Goal 3.D: To provide a safe, comprehensive, and integrated system of facilities for non-motorized transportation.

Policy 3.D.3: The County shall pursue all available sources of funding for the development and improvement of trails for non-motorized transportation (bikeways, pedestrian, and equestrian).

Policy 3.D.5: The County shall continue to require developers to finance and install pedestrian walkways, equestrian trails, and multi-purpose paths in new development, as appropriate.

Policy 3.D.12: Provide safe and comfortable routes for walking, cycling, and where feasible, public transportation, to encourage use of these modes of transportation, enable convenient and active travel as part of daily activities, reduce pollution, and meet the needs of all users of the roadway system.

Alpine Meadows General Plan

The Alpine Meadows General Plan (Placer County 1968) includes a list of purposes for the Circulation Element, as follows:

The purpose of the element is to provide:

1. A safe, economic, and convenient movement throughout the area;
2. The least disruption or disturbance to land use;
3. An integrated element of the General Plan serving to unify all aspects of the area by providing access and communication.

Placer County Land Development Manual

Placer County's Land Development Manual (Placer County 2006) addresses design speed, grades and cross slopes, vertical and horizontal curves, and intersection spacing for existing and proposed streets. In relation to potential environmental effects, the Land Development Manual requirement for the maximum length of dead-end roads is of most importance. Specifically, Section 4.08 provides the following:

- (1) Unless an alternative circulation or mitigation plan has been reviewed and approved by the Engineer and the California Department of Forestry, the maximum length of a dead-end road, including all dead-end roads accessed

from that dead-end road, shall not exceed the following cumulative lengths, regardless of the number of parcels served:

- Parcels zoned for less than one acre: 800 feet
 - Parcels zoned for 1 acre to 4.99 acres: 1320 feet
 - Parcels zoned for 5 acres to 19.99 acres: 2640 feet
 - Parcels zoned for 20 acres or larger: 5280 feet
 - All lengths shall be measured from the edge of the roadway surface at the intersection that begins the road to the end of the road surface at its farthest point. Where a dead-end road crosses areas of differing zoned parcel sizes, requiring different length limits, the shortest allowable lengths shall apply.
- (2) Where parcels are zoned 5 acres or larger, turnarounds shall be provided at a maximum of 1320 feet.
- (3) Each dead-end road shall have a turnaround constructed at its terminus.

Placer County Zoning Ordinance

Article 17.54, General Development Regulations, Section 17.54.100, of the Placer County Zoning Ordinance (Placer County 2015) states the following:

- C. Circulation and Parking.
- 1 Roads. Street design shall satisfy the following criteria:
 - a) Dwelling areas shall only have limited access to major traffic arteries, but adjacent properties/communities shall be linked by an interior street or streets without creating an unintended and convenient detour for through-traffic, whenever possible.
 - b) Collector streets of appropriate width and flowing alignment shall feed traffic between the arterial streets and to a network of minor streets on which most of the homesites are located.
 - c) Where terrain permits, short loop streets and short cul-de-sacs should be used for minor streets.
 - d) At least two vehicle entry/exit points shall be provided or planned for adequate circulation and emergency purposes unless otherwise determined by the planning commission. If two vehicle entry/exit points are required by the commission, these

entrances shall be constructed and available for use with the first and all stages of a phased project, unless otherwise determined by the planning commission.

Article 17.54, General Development Regulations, Section 17.54.060, of the Placer County Zoning Ordinance (Placer County 2015) states the following:

Parking Space Requirements by Land Use

- B.5. Residential Uses shall provide off-street parking spaces at a ratio of two spaces per dwelling unit, except where the ... table [within Section 17.54.060 of the Placer County Zoning Ordinance] requires a different number or type of spaces for a specific use, and except as provided below.
- a) Any single-family dwelling or duplex dwelling that fronts on a road which is signed for “No Parking,” or which has an improved width of less than thirty-two (32) feet, shall provide four off-street parking spaces, exclusive of carports or garages.
 - b) Apartments shall be provided with one off-street parking space for studio and one-bedroom units, and with one additional off-street parking space for units with two bedrooms or more. In addition, one off-street guest parking space shall be provided for every four units in an apartment complex, rounded upward to the nearest whole number.

7.3 IMPACTS

7.3.1 Significance Criteria

The analysis conducted for the Initial Study (Appendix A) determined that the proposed project would have no impact with respect to the following significance criteria:

- Would the project cause a change in air traffic patterns, including either an increase in traffic levels or a change in location resulting in substantial safety risks?

Therefore, this topic is not discussed further in this Draft EIR.

The analysis below evaluates the potential for the project to result in significant transportation and circulation impacts related to the following criteria:

- Would the project result in an increase in traffic that is substantial in relation to the existing and/or planned future year traffic load and capacity of the roadway system?

- Would the project exceed a level of service standard established by the County General Plan and/or Community Plan for roads affected by project traffic?
- Would the project increase impacts to vehicle safety due to roadway design features or incompatible uses?
- Would the project result in inadequate emergency access or access to nearby uses?
- Would the project result in insufficient parking capacity on-site or off-site?
- Would the project create hazards or barriers for pedestrians or bicyclists?
- Would the project conflict with adopted policies, plans, or programs supporting alternative transportation or otherwise decrease the performance or safety of such facilities?

The 2011 Placer County “Methodology of Assessment – Minimum LOS” establishes the methodology of assessment of minimum LOS for roadways and intersections in the County. The guidelines consist of the following:

For roadway segments, a project may be considered to exceed the minimum LOS policies if:

- A roadway segment operating at or above the established Placer County policy without the project will decrease to an unacceptable LOS with the project; or
- A roadway segment currently operating below the applicable established policy will experience an increase in V/C (volume to capacity) ratio of 0.05 or greater; or
- A roadway segment experiences an increase in ADT of 100 or more project generated trips, per lane, and the LOS policy is exceeded.

For signalized intersections, a project may be considered to exceed the minimum LOS policies if:

- An intersection operating at or above the established Placer County policy without the project will decrease to an unacceptable LOS with the project; or
- An intersection currently operating below the acceptable LOS established policy will experience an increase in V/C ratio of 0.05 or greater; or
- An intersection currently operating below the acceptable LOS policy will experience an increase in delay of 4 seconds or greater.

For unsignalized intersections, a project may be considered to exceed the minimum LOS policies if:

- An unsignalized intersection which currently operates at or above the established Placer County policies without the project will deteriorate to an unacceptable LOS with the project; or

- An unsignalized intersection which currently operates below the acceptable LOS established policy will experience an increase of 2.5 seconds or more with the project.

7.3.2 Methodology

This impact analysis addresses traffic impacts associated with Alternative A and Alternative B. Alternative A would include a total of 53 residential units, including 33 single-family detached residences, 14 halfplexes, 5 secondary units, and 1 homeowners’ association (HOA) staff unit. Alternative B would include a total of 44 residential units, including 38 single-family residences, 5 secondary units, and 1 HOA staff unit. The difference of 9 residences does not significantly change the outcome of the impact analysis, as discussed below.

To assess future traffic impacts, LSC Transportation Consultants prepared an estimate of the number of trips to be generated by Alternative A and Alternative B. Trip generation is the evaluation of the number of vehicle trips that would have either an origin or a destination at the project site. Daily one-way vehicle trips and peak-hour one-way vehicle trips were determined to analyze the potential impacts from Alternative A. Standard trip generation rates from the Institute of Transportation Engineers’ Trip Generation 8th Edition Manual (2008) were used (as cited in Appendix E).

The trips generated by Alternative A were then added to the existing traffic volumes and turning movements to determine the project’s effect on intersection LOS. As is the standard for traffic engineering analyses, intersection LOS is analyzed based on the procedures presented in the Highway Capacity Manual (Federal Highways Administration 2010, as cited in Appendix E) using the Synchro software package (Version 8, TrafficWare 2013, as cited in Appendix E).

7.3.3 Project Impacts

Impact 7.1

Would the project result in an increase in traffic that is substantial in relation to the existing and/or planned future year traffic load and capacity of the roadway system?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None	None
Significance after mitigation:	Less than significant	Less than significant

Alternative A Impacts

Trip Generation

Alternative A proposes to construct 33 single-family detached residences, 14 duplex units, up to 5 guest/secondary units, and 1 small HOA staff unit. A portion of the proposed dwelling units would be expected to be vacation homes, which tend to have lower trip generation rates than primary residences. Based on LSC Transportation Consultants’ review of the 2006–2010 American Community Survey data from the United States Census, approximately 75.8% of dwelling units in the census tract containing the Alpine Meadows area are used as recreation homes. Therefore, LSC Transportation Consultants assumed that approximately 75% of the proposed detached units on the project site would be vacation homes (recreation homes). The “Residential Condominium/Townhouse” land use was applied to all of the attached duplex units. A summary of AM peak hour, PM peak hour, and daily trip generation for Alternative A is presented in Table 7-1, Trip Generation Analysis.

Alternative B proposes to construct 38 single-family detached residences, 5 guest/secondary units, and 1 small HOA staff unit. Consistent with Alternative A, approximately 75% of the single-family residences would be considered vacation homes (recreation homes). Compared to Alternative A, this alternative would result in fewer trips during all analysis periods, as shown in Table 7-1. As indicated in Table 7-1, approximately 277 one-way vehicle trip ends are estimated to be generated for Alternative A at the site access driveway with Alpine Meadows Road over the course of a busy day, with approximately 224 trips generated under Alternative B.

**Table 7-1
Trip Generation Analysis**

Land Use Type	Number of Dwelling Units	Trip Generation Rates ^a					One-Way Vehicle Trips at Site Driveway			
		Total Daily	Peak Hour				Total Daily	In	Out	Total
			Hour	In	Out	Total				
<i>Alternative A</i>										
Single Family	8	9.57	AM	0.19	0.56	0.75	77	2	4	6
			PM	0.64	0.37	1.01		5	3	8
Vacation	25	3.16	AM	0.15	0.15	0.30	79	4	4	8
			PM	0.14	0.17	0.31		3	5	8
Duplex	14	5.81	AM	0.07	0.37	0.44	81	1	5	6
			PM	0.35	0.17	0.52		5	2	7
Guest/Secondary Unit	5	6.65	AM	0.10	0.41	0.51	33	1	2	3
			PM	0.40	0.22	0.62		2	1	3
HOA Staff Unit	1	6.65	AM	0.10	0.41	0.51	7	0	1	1
			PM	0.40	0.22	0.62		1	0	1
Total AM Peak Hour							277	8	16	24
Total PM Peak Hour								16	11	27

**Table 7-1
Trip Generation Analysis**

Land Use Type	Number of Dwelling Units	Trip Generation Rates ^a					One-Way Vehicle Trips at Site Driveway			
		Total Daily	Peak Hour				Total Daily	In	Out	Total
			Hour	In	Out	Total				
<i>Alternative B</i>										
Single Family	10	9.57	AM	0.19	0.56	0.75	96	2	6	8
			PM	0.64	0.37	1.01		4	4	10
Vacation	28	3.16	AM	0.15	0.15	0.30	88	4	4	8
			PM	0.14	0.17	0.31		4	5	9
Guest/Secondary Units	5	6.65	AM	0.10	0.41	0.51	33	1	2	3
			PM	0.40	0.22	0.62		2	1	3
HOA Staff Unit	1	6.65	AM	0.10	0.41	0.51	7	0	1	1
			PM	0.40	0.22	0.62		1	0	1
Total AM Peak Hour							224	7	13	20
Total PM Peak Hour								13	10	23

Source: Appendix E.

Notes: HOA = homeowners' association.

^a Trip generation rates are based on the Institute of Transportation Engineers Trip Generation, 8th Edition (2008) manual.

Traffic Distribution and Assignment

The Traffic Impact Analysis prepared by LSC Transportation Consultants identifies the proportion of trips generated by the site to and from each direction along Alpine Meadows Road, and the proportion of trips made to and from each direction along SR-89 to assign the trips through the study intersections. The distribution of traffic arriving and leaving the project site via SR-89 was identified based on the existing summer and winter traffic patterns, and the portion of project trips that are assumed to be made by skiers going to and from the Alpine Meadows Ski Resort in the winter. The estimated winter distribution pattern for project-generated trips is shown in Table 7-2, Winter Trip Distribution. As shown, approximately 60% of project trips are expected to be made to/from the Alpine Meadows Ski Resort in the peak direction during the peak hour (outbound in the AM and inbound in the PM). Similarly, 30% of project trips are expected to be made to/from the ski area in the off-peak direction. The estimated distribution pattern for project-generated trips during the summer is shown in Table 7-3, Summer Trip Distribution. More than one-half (approximately 52%) of project trips are assumed to be made to/from the south on SR-89. It is assumed that trip distribution would be similar under Alternative B.

Project traffic turning movements were calculated by applying the distribution patterns presented in Tables 7-2 and 7-3 to the project-generated trips shown in Table 7-1. The resulting project-generated winter AM, winter PM, and summer PM turning movements through the site access

intersection and the SR-89/Alpine Meadows Road intersection are presented on Figure 7-2, Project-Generated Traffic Volumes. Adding the project-generated volumes to the existing volumes yields the total traffic volumes with the project, which are shown on Figure 7-3, Traffic Volumes with Project.

**Table 7-2
Winter Trip Distribution**

Origin/Destination	Distribution of Project Traffic			
	AM		PM	
	Inbound	Outbound	Inbound	Outbound
Alpine Meadows Ski Area	30%	60%	60%	30%
SR-89 to/from the North	35%	27%	22%	45%
SR-89 to/from the South	35%	13%	18%	25%
Total	100%	100%	100%	100%

Source: Appendix E.
Note: SR = State Route.

**Table 7-3
Summer Trip Distribution**

Origin/Destination	PM Distribution of Project Traffic
SR-89 to/from the North	43%
SR-89 to/from the South	52%
Points along Alpine Meadows Road	5%
Total	100%

Source: Appendix E.
Note: SR = State Route.

Intersection Level of Service

LOS was calculated for the SR-89/Alpine Meadows Road intersection using the Highway Capacity Manual signalized intersection methodology and the Alpine Meadows Road/site access intersection based on the side-street stop-controlled methodology, as shown in Table 7-4, Alternative A Level of Service.

SR-89/Alpine Meadows Road

The signalized SR-89/Alpine Meadows Road intersection is shown to operate at LOS B during winter AM and PM peak hours, with or without Alternative A. During the summer PM peak hour the signalized intersection is estimated to operate at LOS A, with or without the project. Alternative A would generate an increase in delay of less than 1.0 seconds under all scenarios. Placer County defines the LOS standard as D for locations within one-half mile of a state highway

and C for all other locations in the study area. According to County policy, the County's LOS standard for a state highway system shall be no worse than those adopted in the Placer County Congestion Management Program. The Congestion Management Program establishes a standard of LOS E for roadways and signalized intersections along state highways. Placer County defines a significant impact to a signalized intersection located along a state highway as occurring when an intersection operating at or above the established LOS without the project decreases to an unacceptable LOS with the project. Because Alternative A would not degrade LOS below D, the project would have a **less than significant** impact at this intersection.

Alpine Meadows/Site Access

At the Alpine Meadows/site access intersection, the worst movement (the site driveway) is expected to operate at LOS B in the winter peak hours with implementation of Alternative A. During the summer, all movements at this intersection are estimated to operate at LOS A. Appendix C to the Traffic Impact Analysis (Appendix E) presents detailed LOS calculations.

Table 7-4
Alternative A Level of Service

Intersection	Control	LOS Standard	Year 2014			
			No Project		Alternative A	
			Delay ^a	LOS	Delay ^a	LOS
<i>Winter AM</i>						
SR-89/Alpine Meadows Road	Signalized	D	11.9	B	12.1	B
Alpine Meadows Road/Site Access	SS ^b	C	—	—	11.7	B
<i>Winter PM</i>						
SR-89/Alpine Meadows Road	Signalized	D	12.4	B	12.6	B
Alpine Meadows Road/Site Access	SS ^b	C	—	—	12.0	B
<i>Summer PM</i>						
SR-89/Alpine Meadows Road	Signalized	D	7.2	A	7.5	A
Alpine Meadows Road/Site Access	SS ^b	C	—	—	8.5	A

Source: Appendix E

Notes: LOS = level of service; SR = State Route; SS = stop sign controlled.

^a Delay in seconds.

^b Worst movement is reported.

Alternative B Impacts

Due to the decrease in the total number of units proposed under Alternative B, traffic generation would be less than Alternative A during all analysis periods. Alternative B would generate 224 daily trips, and impacts to the two intersections evaluated would be similar to those under Alternative A, but slightly less due to a slight decrease in trips. The traffic memorandum prepared by LSC Transportation Consultants for Alternative B (see Appendix E) indicates that

implementation of this alternative would not affect the conclusions of the traffic analysis conducted for Alternative A regarding intersection LOS. Under Alternative B, the project would not result in a decrease of the LOS at the SR-89/Alpine Meadows Road intersection below the established criteria, and the impact would remain **less than significant**.

Mitigation Measures

No mitigation would be required.

Impact 7.2

Would the project exceed a level of service standard established by the County General Plan and/or Community Plan for roads affected by project traffic?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None	None
Significance after mitigation:	Less than significant	Less than significant

Alternative A and Alternative B Impacts

Under either Alternative A or Alternative B, effects relating to trip generation, traffic distribution and assignment, and intersection LOS would be the same as those evaluated under Impact 7.1: **less than significant**.

Mitigation Measures

No mitigation would be required.

Impact 7.3

Would the project increase impacts to vehicle safety due to roadway design features or incompatible uses?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Potentially significant	Potentially significant
Mitigation measures:	Mitigation measure 7.3a	Mitigation measure 7.3a
Significance after mitigation:	Less than significant	Less than significant

Alternative A and Alternative B Impacts

Under Alternative A there would be seven locations where the roadway design does not meet the County's typical 25 miles per hour (MPH) design speed. Under Alternative B, there would be six locations where the roadway design does not allow the typical 25 MPH speed; at these six locations, the roadway design would be the same as under Alternative A.

Three of the six design deviations that would occur under either alternative are normally allowable under section 4.03(1) of the Placer County Land Development Manual. At these three locations (the entrance to Court B, near the terminus of Court B, and just west of the knuckle of Court C) the design speed is 16 miles per hour (MPH) rather than the county standard 25 MPH. Section 4.03(1) of the Land Development Manual allows this design speed (down to 15 MPH) when the street's maximum dead end length is 1,000 or fewer feet and it serves a maximum of ten lots. The only minor deviation to this exception allowance is that Court B on Alternative A would serve twenty duplex lots rather than the ten single family lots of Alternative B.

The three other design speed deviations that are common to both Alternative A and Alternative B include:

- On Court C at its intersection with Road A, travelling southbound out of Court C, the standard 25 MPH design speed is reduced to 16 MPH as a result of a reduced radius curve. "Stop" and "Stop Ahead" signs and placement of a street light to illuminate the location at night are proposed.
- On Road A just beyond its intersection with Court C travelling east and westbound Road A will have a grade break resulting in a sag, and the proposed length of vertical curve in the roadway reduces nighttime stopping sight distance. Advisory signs recommending maximum speed of 15 MPH are proposed in both directions.
- At the first turn in Road A after its intersection with Alpine Meadows Road the design speed is reduced from 25 MPH to 20 MPH as a result of a reduced radius curve. A "Sharp Curve" advisory sign facing both directions is proposed.

For Alternative A, the seventh design speed issue would occur near the end of Court C just beyond its intersection with Court D; Court C will have a grade break resulting in a sag and the proposed length of vertical curve in the roadway would reduce the stopping sight distance. An "End of Street" sign is proposed in this location to alert drivers to the end of street condition ahead.

During the entitlement review for this project, Design Exception requests for these roadway design deviations would be considered. County staff's preliminary review and analysis of the alternative roadway design has determined that the alternative design standards will achieve an

acceptable level of roadway service and safety and would not result in the creation of significant roadway hazards or environmental impacts.

The proposed intersection spacing and the interaction between the turning movements at the Alpine Meadows Road/site access roadway relative to adjacent driveways and intersections along Alpine Meadows Road were evaluated. Access to the site is proposed from Road A, which would be located on the east side of Alpine Meadows Road about 450 feet north of Chalet Road. The design of this intersection is required to meet Placer County Roadway Standard Plate 116. However, the project applicant has requested a Design Exception (Option 4) to the Plate 116 standards due to the project site's narrow frontage onto Alpine Meadows Road. The project proposes to reduce the radius for inbound and outbound right turns to 25 feet and reduce the taper offsets to 4 feet to avoid encroachment into the neighboring property and minimize and/or eliminate potential retaining walls within the County right-of-way. The modified design would continue to allow vehicles to enter and exit Road A without encroaching on other lanes. The County has preliminarily approved the Design Exception request (Option 4). Thus, the potential safety impacts at this intersection would remain **less than significant**.

There is an existing driveway on the west side of Alpine Meadows Road approximately 160 feet north of the proposed site access roadway. Section 4.05(h) of the Placer County Land Development Manual (Placer County 2006) requires that streets "entering on opposite sides of any given street shall have their centerline directly opposite or shall be offset by at least 150 feet." The adjacent intersections on Alpine Meadows Road are offset by more than 150 feet; therefore, the proposed site access location meets this requirement.

Driver sight distance at the proposed Alpine Meadows Road/site access intersection was also evaluated to address safety. Two measures of sight distance were evaluated: stopping sight distance and corner sight distance. Stopping sight distance is the distance that the driver of a vehicle on Alpine Meadows Road should be able to see in front of him/her on the roadway to have time to react and stop before striking an object (or side-street vehicle) that comes into view at the site access intersection. Corner sight distance is the distance that a driver of a vehicle turning onto Alpine Meadows Road from the site access drive should be able to see in each direction along Alpine Meadows Road to determine whether he/she can safely enter the roadway.

The required stopping sight distance is 300 feet based on a travel speed of 40 mph along Alpine Meadows Road (which has a posted speed limit of 35 mph). The existing stopping sight distance exceeds 600 feet in both directions on Alpine Meadows Road; therefore, adequate stopping sight distance is provided.

The required corner sight distance is 440 feet. To the right looking north, more than 600 feet of corner sight distance is provided, which well exceeds the recommended distance. To the left

looking south, only approximately 180 feet of corner sight distance is provided due to the presence of small trees along the east side of Alpine Meadows Road and the horizontal curvature of the roadway. This is 260 feet short of the desired minimum distance. In addition, during the winter, snow along Alpine Meadows Road could block visibility from this new intersection, making it difficult for drivers exiting the project site to judge gaps in oncoming traffic along Alpine Meadows Road. Therefore, this is considered a **potentially significant impact**. Mitigation Measure (MM) 7.3a requires that routine tree trimming be undertaken by the HOA and that snow be removed from the corners of the Alpine Meadows Road/Road A intersection to provide adequate sight distance. Implementation of this measure would reduce the impact to **less than significant**.

Mitigation Measures

MM 7.3a: The Improvement Plans shall show that the trees along the east side of Alpine Meadows Road, south of the Alternative A and B access encroachment, shall either be removed or trimmed to provide a minimum of 440 feet of corner sight distance from the project’s access driveway. Final landscaping plans shall ensure that driver sight distance looking to the north and to the south along Alpine Meadows Road from the site access encroachment is not hindered. The homeowners’ association (HOA) shall include in its Covenants, Conditions, and Restrictions (CC&Rs) a requirement that the HOA is responsible for routinely trimming the trees along the east side of Alpine Meadows Road south of the project access encroachment and for removing snow from the corners of the Alpine Meadows Road/site access driveway intersection to provide adequate sight distance for drivers exiting the site and judging gaps in oncoming traffic along Alpine Meadows Road. Snow removed shall be deposited at a location that is not on adjacent private properties or within the public right-of-way.

Impact 7.4

Would the project result in inadequate emergency access or access to nearby uses?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Potentially significant	Potentially significant
Mitigation measures:	Mitigation Measures 7.4a through 7.4c	Mitigation Measures 7.4a through 7.4c
Significance after mitigation:	Less than significant	Less than significant

Alternative A Impacts

Placer County’s Zoning Ordinance, Section 17.54.100.C.1.d, the County’s Land Development Manual Section 4.08, the California Building Code, and the California Fire Code (Public

Resources Code section 4290) require that residential development projects have at least two vehicle entry/exit points to provide for circulation and emergency purposes unless otherwise determined by the Planning Commission. However, Alternative A would be located on a dead-end road. No practical alternative has been identified to allow for two points of access due to surrounding terrain and ownership. One alternative that was considered was to obtain an easement from the neighboring Bear Creek Estates to construct an emergency access connection to John Scott Trail. The project applicant sought approval for this from the Bear Creek Estates HOA but was denied. The project applicant has also consulted with the U.S. Forest Service to determine if a secondary access point for Bear Creek Valley could be made through the Forest Service lands. The Forest Service indicated that such an access may be possible in the future but was not considered an appropriate use of land at this time. Finally, consideration was given to trying to obtain access from Chalet Road to the south. No feasible route was found to make this connection given the topography, private land ownership, and physical resources and conditions along the southern boundary.

Without a secondary access road, the design of the on-site roads would not conform to the standards and policies of Chapter 5 and Appendix D of the California Fire Code and Placer County's Land Development Manual Section 4.08, which require that adequate road lengths and turning radii be provided to ensure emergency vehicle access and to facilitate evacuation of an area. Because a second access to the project site is not feasible, other components of the project would be enhanced to ensure that residents and guests would be safe if they remained within the project site during a fire, avalanche or other emergency. These provisions must be described in a project-specific Emergency Preparedness and Evacuation Plan (EPEP). The EPEP for Alternative A must document emergency preparedness for the Alpine Sierra Subdivision and plan for response to emergency events that would be implemented in conjunction with the Alpine Meadows Community Wildfire Protection Plan, the North Tahoe Fire Protection District Emergency Preparedness and Evacuation Guide, and the Placer County Operational Area East Side Emergency Evacuation Plan. An EPEP has not yet been prepared for Alternative A, but one is required under Mitigation Measure 13.1c. The EPEP must include the following measures:

- Provisions for maintenance of internal roads by the HOA,
- On-site storage of snow removal equipment,
- Use of fire-resistant building materials for home construction,
- Minimum standards to be met such that homes can be used as Shelter-in-Place facilities for project occupants,
- Fuel reduction treatment and management of the entire project site, and
- Recordation of easements for emergency vehicle access through the project site to United States Forest Service (USFS) property boundaries in two locations to allow for a

connection through USFS lands in the future should the USFS determine that looped access throughout Bear Creek Valley could be provided.

Alternative A also includes a Forest Management and Fuel Reduction Plan (Appendix J) to reduce fire risk on site. Additionally, the project design guidelines and the California Building Code require that interior sprinklers be provided in each structure constructed on site.

The project's inconsistency with Placer County's Zoning Code access requirements is considered a **potentially significant impact** with respect to emergency access. However, with preparation and implementation of the EPEP required under Mitigation Measure 13.1c to coordinate and plan for emergency response, and implementation of the Forest Management and Fuel Reduction Plan to minimize fire risk on site the project will provide for on-site hazard reduction. Additionally, Mitigation measures 7.4a and 7.4b identify the improvements to North Tahoe Fire Protection District and Alpine Springs County Water District facilities that Alternative A would undertake or would contribute to that would improve water pressure and fire-fighting capacity throughout the fire district to ensure that sufficient emergency response is available to provide protection to the project site. This would reduce the impact of the project on emergency access to **less than significant**.

Additionally, during project construction, truck traffic on Alpine Meadows Road could interfere with emergency responders' access to the site and surrounding areas. To ensure that construction traffic is managed such that it does not create congestion or interfere with circulation on Alpine Meadows Road, Mitigation Measure 7.4c requires that the project applicant prepare a Construction Traffic Management Plan that shall be subject to approval by the Placer County Department of Public Works and Facilities Transportation Division. The County will ensure that the Construction Traffic Management Plan includes appropriate measures to ensure that construction traffic impacts to public streets are minimized and a high level of safety for all roadway users is maintained. With implementation of Mitigation Measure 7.4c, construction of Alternative A would have a **less than significant** impact related to interfering with emergency access and response.

Alternative B Impacts

Because a second access to the project site is not feasible, this is considered a **potentially significant** impact, the same as Alternative A. However, other components of the project would be enhanced to ensure that residents and guests would be safe if they remained within the project site during a fire, avalanche or other emergency, as described in the EPEP proposed for Alternative B. The EPEP (Appendix J) is designed to coordinate emergency preparedness for the Alpine Sierra Subdivision and plan for response to emergency events. It is intended to be implemented in conjunction with the Alpine Meadows Community Wildfire Protection Plan, the North Tahoe Fire Protection District Emergency Preparedness and Evacuation Guide, and the

Placer County Operational Area East Side Emergency Evacuation Plan. The EPEP includes the following measures:

- Internal roads will be maintained by the HOA,
- snow removal equipment will be stored on site,
- homes will be constructed with fire-resistant building materials,
- the entire project site will be treated and managed as defensible space,
- HOA buildings will be designed, constructed, and operated to serve as Shelter-in-Place facilities for project occupants, and
- Easements will be recorded for emergency vehicle access through the project site to United States Forest Service (USFS) property boundaries in two locations to allow for a connection through USFS lands in the future should the USFS determine that looped access throughout Bear Creek Valley could be provided.

Alternative B's inconsistency with Placer County's Zoning Code access requirements is considered a **potentially significant impact** with respect to emergency access. However, Alternative B includes the EPEP to coordinate and plan for emergency response, and includes the Forest Management and Fuel Reduction Plan to minimize fire risk on site (both provided in Appendix J). The project design guidelines and the California Building Code also require that interior sprinklers be provided in each structure constructed on site. These components of Alternative A help to lessen the potential adverse effects associated with the single point of access to the site. Additionally, mitigation measures 7.4a and 7.4b identify the improvements to North Tahoe Fire Protection District and Alpine Springs County Water District facilities that Alternative B would undertake or would contribute to that would improve water pressure and fire-fighting capacity throughout the fire district to ensure that sufficient emergency response is available to provide protection to the project site. This would reduce the impact of the project related to emergency access to **less than significant**.

Additionally, during project construction, truck traffic on Alpine Meadows Road could interfere with emergency responders' access to the site and surrounding areas. To ensure that construction traffic is managed such that it does not create congestion or interfere with circulation on Alpine Meadows Road, Mitigation Measure 7.4c requires that the project applicant prepare a Construction Traffic Management Plan that shall be subject to approval by the Placer County Department of Public Works and Facilities Transportation Division. The County will ensure that the Construction Traffic Management Plan includes appropriate measures to ensure that construction traffic impacts to public streets are minimized and a high level of safety for all roadway users is maintained. With implementation of Mitigation Measure 7.4c, construction of Alternative B would have a **less than significant** impact related to interfering with emergency access and response.

Mitigation Measures

MM 7.4a: The project applicant shall implement Mitigation Measure 14.1a.

This Mitigation Measure requires the applicant to obtain a will-serve letter from the North Tahoe Fire Protection District and to purchase and donate to the North Tahoe Fire Protection District a standard four-wheel-drive Type 1 pumper truck with a 1,500-gallon-per-minute pump and a 750-gallon water tank.

MM 7.4b: The project applicant shall implement Mitigation Measure 14.7a.

This Mitigation Measure requires the applicant to obtain a will-serve letter from the Alpine Springs County Water District (ASCWD) and to provide a fair-share contribution to the cost of upgrading the ASCWD Booster Pumps B, C, and D.

MM 7.4c: Prior to approval of Improvement Plans, the project shall prepare a Construction Traffic Management Plan that shall be subject to approval by the Placer County Department of Public Works and Facilities. The goal of the Construction Traffic Management Plan will be to minimize traffic impacts to public streets and maintain a high level of safety for all roadway users. The plan will include the number and size of trucks per day, expected arrival/departure times, truck circulation patterns, location of truck staging areas, employee parking, and the proposed use of traffic control/partial street closures on public streets. The Construction Traffic Management Plan shall provide for attainment of the following performance standards to the satisfaction of the Department of Public Works and Facilities:

- Delivery trucks shall not idle/stage within the public right-of-way.
- Any proposed lane closures on Alpine Meadows Road shall be reviewed and approved by the Department of Public Works and Facilities at a minimum of one week prior to the proposed lane closure.
- All construction employees shall park on site.
- Roadways shall be maintained clear of debris (such as rocks) that could otherwise impede travel and impact public safety.

Impact 7.5

Would the project result in insufficient parking capacity on-site or off-site?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None	None
Significance after mitigation:	Less than significant	Less than significant

Alternative A Impacts

Placer County’s parking requirements for residential developments are set forth in in the General Plan and in Section 17.543.060 of the Zoning Ordinance. The project would be required to provide a minimum of four off-street parking spaces, in addition to two spaces within a garage, to ensure that adequate on-site parking for each residence is provided. The proposed road design within Alternative A would not include sufficient paved width to allow on-street parking and Alternative A does not include driveways that would be large enough to provide four off-street parking spaces for each dwelling unit, particularly for the halfplex units. It is anticipated that Alternative A could result in insufficient parking that could lead to parking in the street that could, to a minor degree, interfere with vehicle circulation and unimpeded emergency vehicle access resulting from partial obstruction of onsite subdivision roads if vehicles are illegally parked along roadway shoulders. These circulation impacts resulting from deficient onsite parking for individual residences would be relatively minor and would not be expected to result in circulation impacts that could result in substantial environmental effects. However, Alternative A would not be in compliance with the minimum onsite parking requirements established in the Zoning Ordinance. This parking deficiency would be considered by the Planning Commission when determining the degree to which the project would comply with the County Code when rendering a decision on whether to approve the project. This impact would be **less than significant**.

Alternative B Impacts

The project applicant has proposed a Parking Provision and Management Plan, provided in Appendix E, that defines how parking would be provided for Alternative B. This plan notes that the parking plan reflects “an effort to limit cuts, fills and redundant impervious surface on each lot and the overall project” and provides parking through a combination of: additional surface parking within most lots, common parking lots in the project, and additional garage space. The parking plan assumes that most (28 lots or 80%) of the units on the east side of the development would include three-car garages, but this would not be feasible on the west side of the development due to the smaller lot sizes, thus on-street parking would be accommodated on Court B by providing a minimum roadway width of 32 feet. The parking plan includes 12 parking spaces within common area parcels H and/or I on the east side and 10 parking spaces

of on-street parking within cul-de-sac B. The parking plan notes that “the HOA will be in charge of the parking in the common parking lots both from maintenance perspective and controlling use or availability as required to provide for off-street parking.”

By providing sufficient parking to meet Placer County’s requirements set forth in in the General Plan and in Section 17.543.060 of the Zoning Ordinance, Alternative B would result in a **less-than-significant** impact associated with parking and associated concerns related to emergency access and evacuation.

Mitigation Measures

No mitigation would be required.

Impact 7.6

Would the project create hazards or barriers for pedestrians or bicyclists?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None	None
Significance after mitigation:	Less than significant	Less than significant

Alternative A and Alternative B Impacts

Alternative A and Alternative B propose development of fewer than 55 residential units in a rural area of Placer County. The proposed subdivision is located near the Alpine Meadows Ski Resort, off Alpine Meadows Road. The proposed residential development does not include any design features that would create hazards or barriers to pedestrians or bicyclists. Due to the rural nature of the project site, no dedicated bike lanes are provided. However, both Alternative A and Alternative B would include a public pedestrian trail on site, connecting with the existing U.S. Department of Agriculture Forest Service trail that traverses the project site and portions of onsite roadways would include a sidewalk on one side of the road. The pedestrian trail would be separated from the roadways where feasible. Because Alternative A and Alternative B do not include any hazards or barriers to pedestrians and bicyclists, the impact would be **less than significant**.

Mitigation Measures

No mitigation would be required.

Impact 7.7

Would the project conflict with adopted policies, plans, or programs supporting alternative transportation or otherwise decrease the performance or safety of such facilities?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None	None
Significance after mitigation:	Less than significant	Less than significant

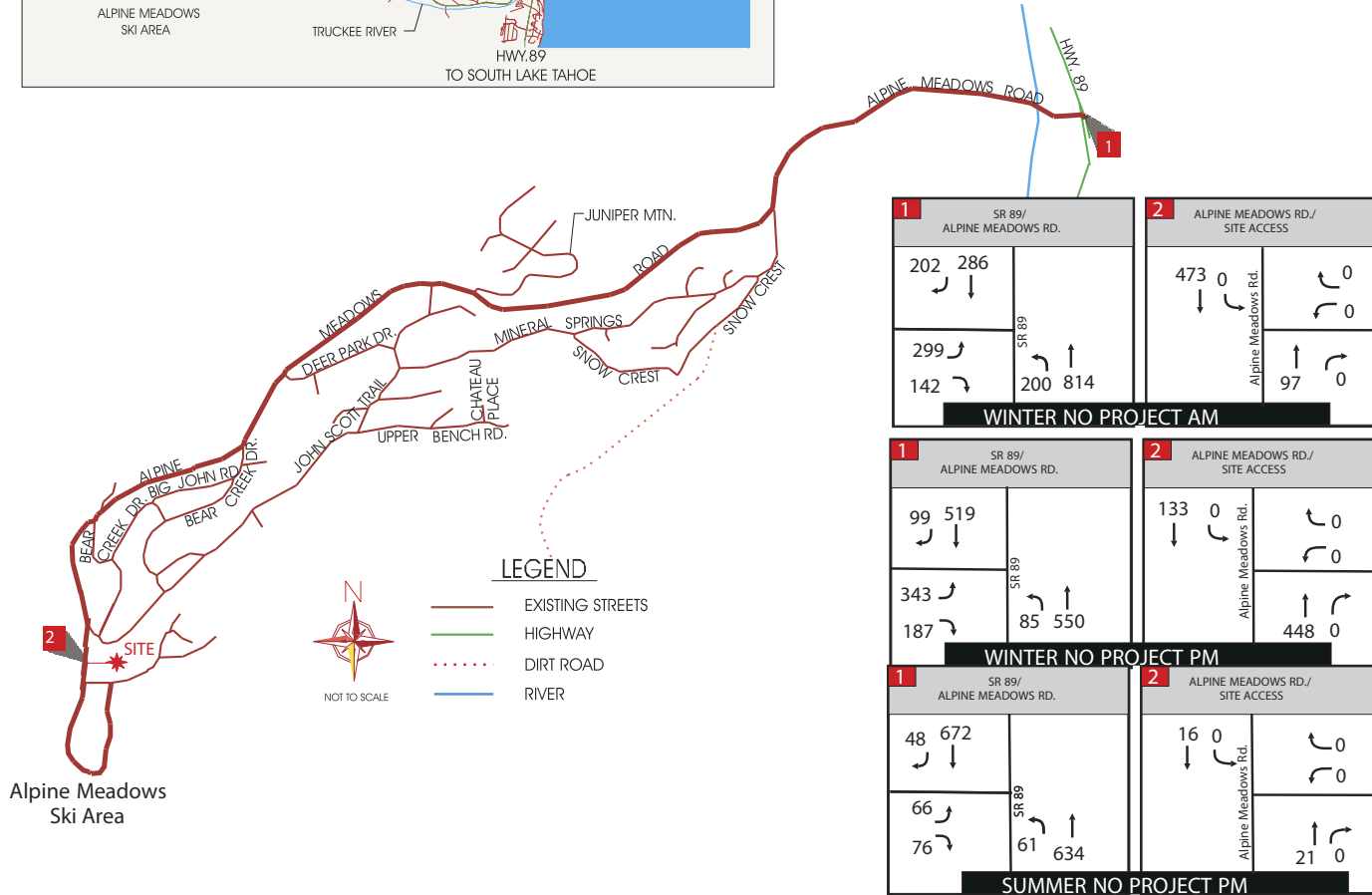
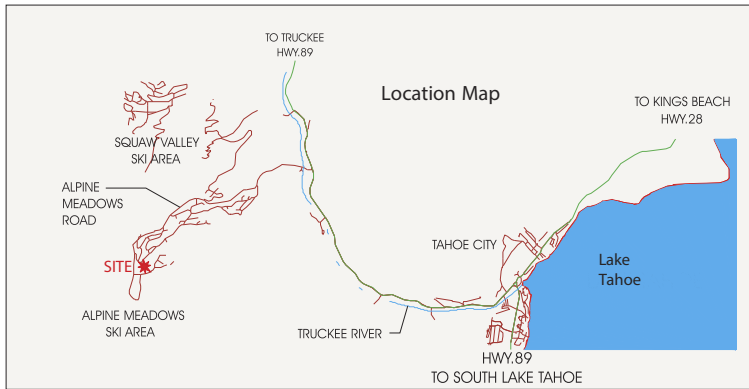
Alternative A and Alternative B Impacts

The project site is located in a rural area of Placer County near the Alpine Meadows Ski Resort. Alternative A and Alternative B do not include any uses that could potentially conflict with any plans by Placer County or the Tahoe Area Regional Transit system that support alternative transportation. There are no adopted plans, policies, or programs to provide alternative transportation to serve Alpine Meadows Road or the surrounding area. No transit stops are provided along Alpine Meadows Road. The closest transit stop is at the SR-89/Alpine Meadows Road intersection. The project does not include any uses that would decrease the performance or safety of any existing transit programs. Impacts under Alternative A and Alternative B would be **less than significant**.

Mitigation Measures

No mitigation would be required.

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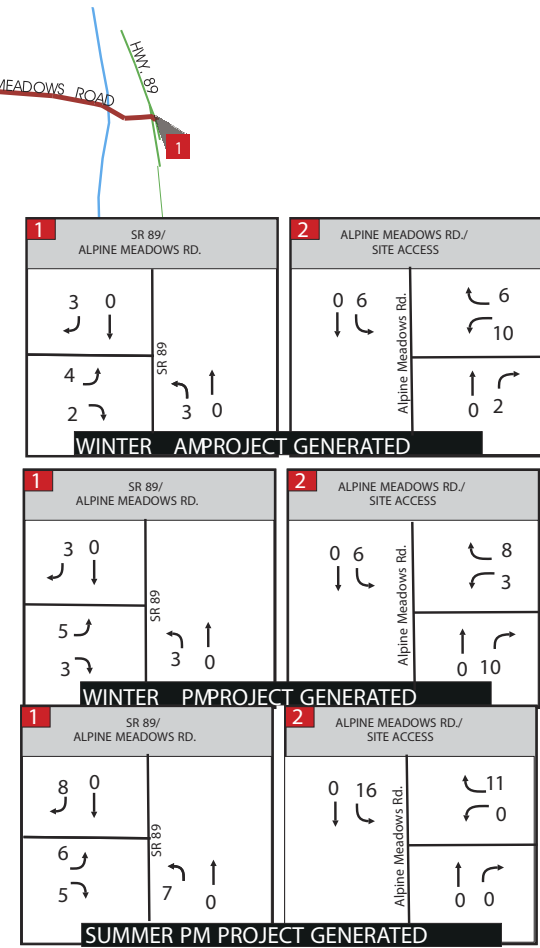
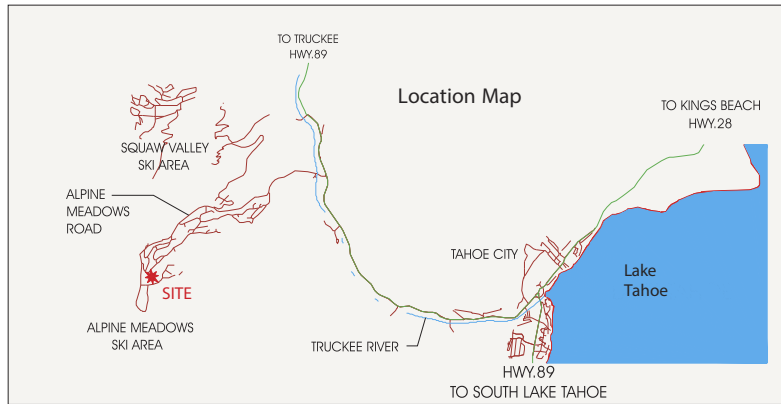
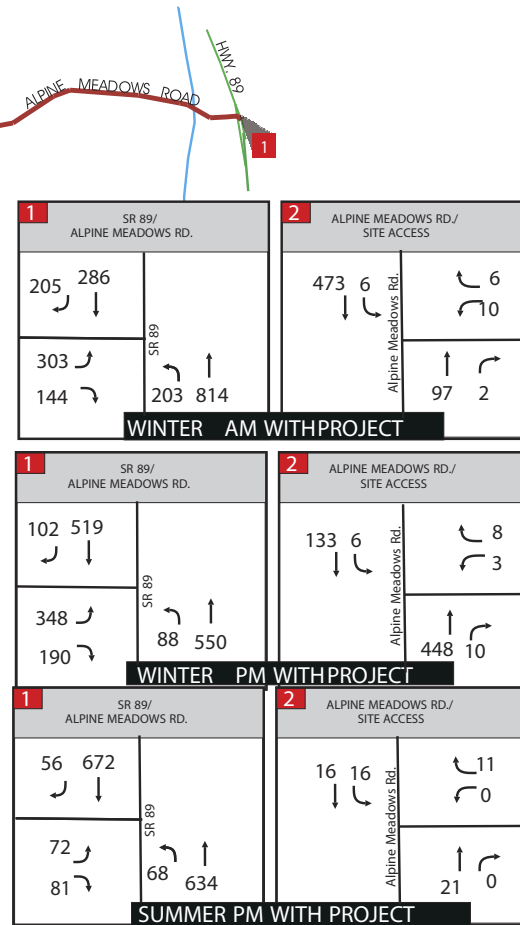
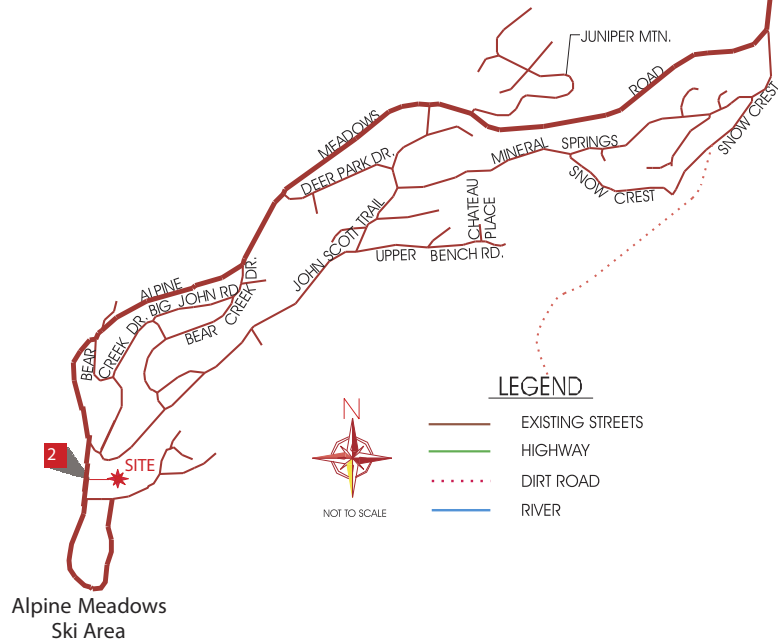
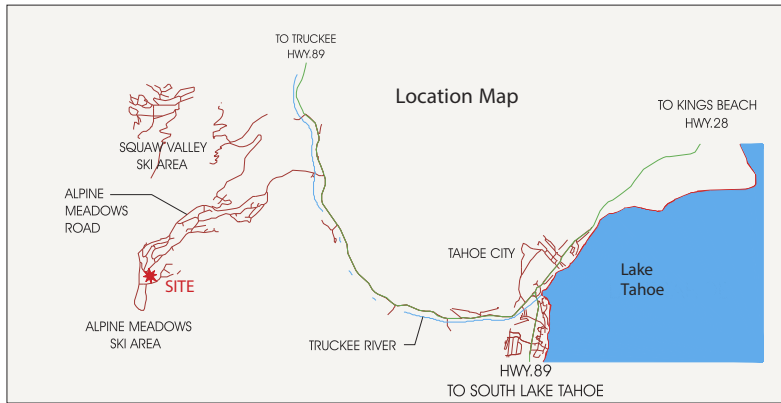


FIGURE 7-2
Project Generated Traffic Volumes

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