4.8 TRANSPORTATION, PARKING AND CIRCULATION

ENVIRONMENTAL SETTING

The Project is located in Crystal Bay, Nevada on the north shore of Lake Tahoe. The site is accessed by State Route 28 (SR 28) and intersecting local roadways. Stateline Road will provide direct access to the west side of the site. Lakeview Avenue which currently runs parallel with SR 28 will be realigned to converge with Stateline Road near the west center of the project site creating the west border of the project area. Reservoir Road will be eliminated and replaced with a new internal roadway (Wellness Way), which will provide access to the project area. Wassou Road located north of the project site will be realigned to intersect Lakeview Avenue at the northwest corner of the project area.

Roadway Setting

Figure 4.8-1 shows the applicable roadway segments and intersections along SR 28 that provide access to the project area. The major roadways included in the EIS analysis are described in detail below.

State Route 28 is the primary roadway that borders the north shore of Lake Tahoe. SR 28 intersects U.S. Highway 50 in Douglas County, Nevada on the east side of Lake Tahoe, and State Route 89 (SR 89) in Placer County, California on the west side of Lake Tahoe. Within the study area, SR 28 is a two-lane roadway from east of the Mt. Rose Highway to Chipmunk Street (Kings Beach), and a four-lane roadway from Chipmunk Street to west of State Route 267 (SR 267). The speed limits on SR 28 vary from 25 mph to 45 mph within the study area.

State Route 431 (Mount Rose Highway) is a two-lane highway that generally runs in the northeast-southwest direction from Incline Village, Nevada to Reno, Nevada. Mount Rose Highway terminates at its intersection with SR 28 in Incline Village, Nevada and US 395 in Reno, Nevada. East of US 395, Mount Rose Highway continues as Geiger Grade Road which extends through Virginia City, Nevada.

State Route 267 is a two-lane highway with occasional passing lanes for slower vehicles. SR 267 intersects SR 28 between Kings Beach and Tahoe Vista on the north shore of Lake Tahoe in California. To the north SR 267 intersects Interstate 80 (I-80) in Truckee, California where it becomes SR 89 north of I-80.

Stateline Road intersects SR 28 at the California-Nevada Stateline. Stateline Road runs in the north-south direction, terminating at the Cal Neva Resort to the south and the Tahoe Biltmore to the north. Stateline Road is an unstriped, two-lane roadway that mainly serves surrounding residential and commercial uses.

Reservoir Road is a short, two-lane, unstriped roadway that intersects SR 28 on the east side of the project area.

Wassou Road intersects Reservoir Road west of the SR 28/Reservoir Road intersection. Wassou Road is a two-lane, unstriped roadway that runs through the Tahoe Biltmore parking lot. Presently, it is difficult to distinguish between the roadway and the parking lot.

Lakeview Avenue intersects Reservoir Road west of its intersection with Wassou Road. Lakeview Avenue parallels Wassou Road and serves the residential neighborhood located to the north of the project area.

Cove Street is a narrow, two-lane, unstriped roadway that intersects Stateline Road north of SR 28. Cove Street mainly serves surrounding residential uses.

Study Intersections

Intersection turning movement counts were collected in August and early September 2008 during the Friday PM (3:00 PM – 6:00 PM) and the Saturday Midday (12:00 PM - 2:00 PM) peak traffic periods at the following intersections:

- SR 28/Mount Rose Highway: Friday 8-1-2008; Saturday 8-23-2008
- SR 28/Lakeshore Boulevard: Friday 8-1-2008; Saturday 8-23-2008
- SR 28/Reservoir Road: Friday 8-1-2008; Saturday 8-23-2008
- Reservoir Road/Wassou Road: Friday 8-15-2008; Saturday 8-30-2008
- SR 28/Tahoe Biltmore Driveway: Friday 8-15-2008; Saturday 8-23-2008
- SR 28/Stateline Road: Friday 8-1-2008; Saturday 8-30-2008
- Stateline Road/Cove Street: Friday 8-8-2008; Saturday 9-6-2008
- SR 28/Cal Neva Driveway: Friday 8-1-2008; Saturday 8-23-2008
- SR 28/Coon Street: Friday 8-15-2008; Saturday 9-6-2008
- SR 28/SR 267: Friday 8-15-2008; Saturday 8-30-2008

The existing intersection lane configurations, control types, and turning movement volumes are displayed on Figure 4.8-2. Table 4.8-1 shows the existing intersection turning movement counts at the study intersections for the Friday PM peak period.

Table 4.8-1

Existing Intersection Turning Movement Counts – Friday PM Peak Hour

Intersection	Turning Movement Volume [1]											
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
SR 28/Mount Rose Highway	--	--	--	160	--	166	206	550	--	--	525	143
SR 28/ Lakeshore Boulevard	111	14	29	6	3	4	8	718	166	16	665	5
SR 28/Reservoir Road	20	793	2	2	747	19	21	0	20	2	0	1
Reservoir Road/ Wassou Road	5	3	23	2	3	1	0	16	5	18	17	4
SR 28/Biltmore Driveway	--	--	--	1	--	3	2	814	--	--	767	2

Table 4.8-1

Existing Intersection Turning Movement Counts – Friday PM Peak Hour

Intersection	Turning Movement Volume [1]											
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
SR 28/Stateline Road	8	0	15	13	0	40	18	788	7	15	745	11
Stateline Road/Cove Street	3	26	--	--	49	4	7	--	6	--	--	--
SR 28/Cal Neva Driveway	25	--	16	--	--	--	--	797	34	4	789	--
SR 28/Coon Street	41	16	14	112	10	69	53	735	42	12	718	46
SR 28/SR 267	--	--	--	390	--	208	247	741	--	--	579	351

Source: Fehr & Peers, 2009

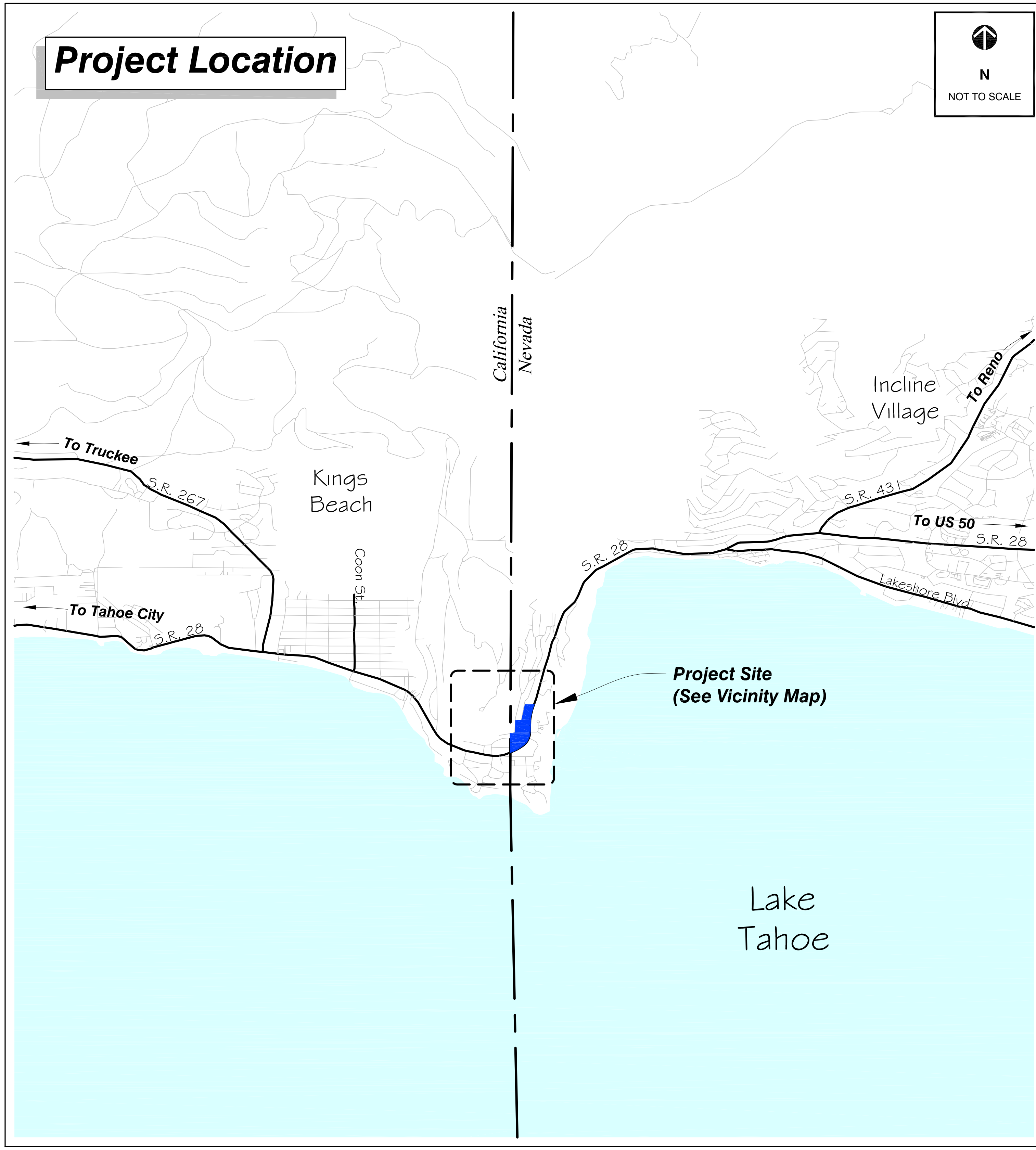
Notes: [1] Turning movement volumes were balanced between intersections.
Count data was collected in August 2008.

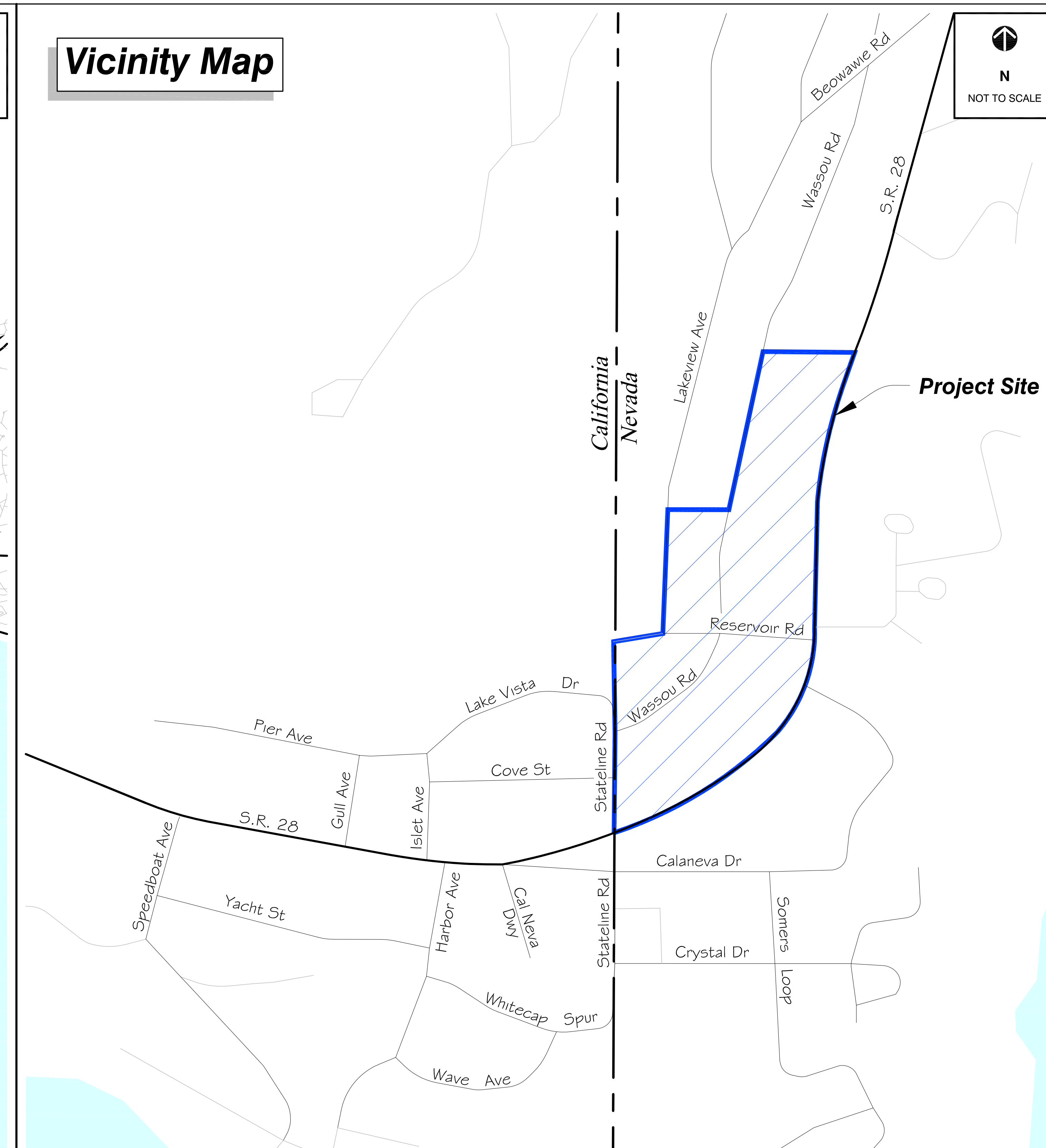
Intersection turning movement counts were collected at all of the driveways and access roads to the existing Tahoe Biltmore site providing an estimate of the actual trip generation at the time the counts were collected. The traffic volumes entering and exiting the driveways appear to be low when considering the operating uses at the existing site.

Existing Traffic Conditions

Analysis Periods

Historically the Lake Tahoe basin experiences higher traffic volumes during the summer months than the winter months. Exhibit 4.8-1 shows the monthly volume distribution at a vehicle count station located on SR 28, south of Lakeshore Boulevard, near the project area. The exhibit shows the highest traffic volumes during July and August.



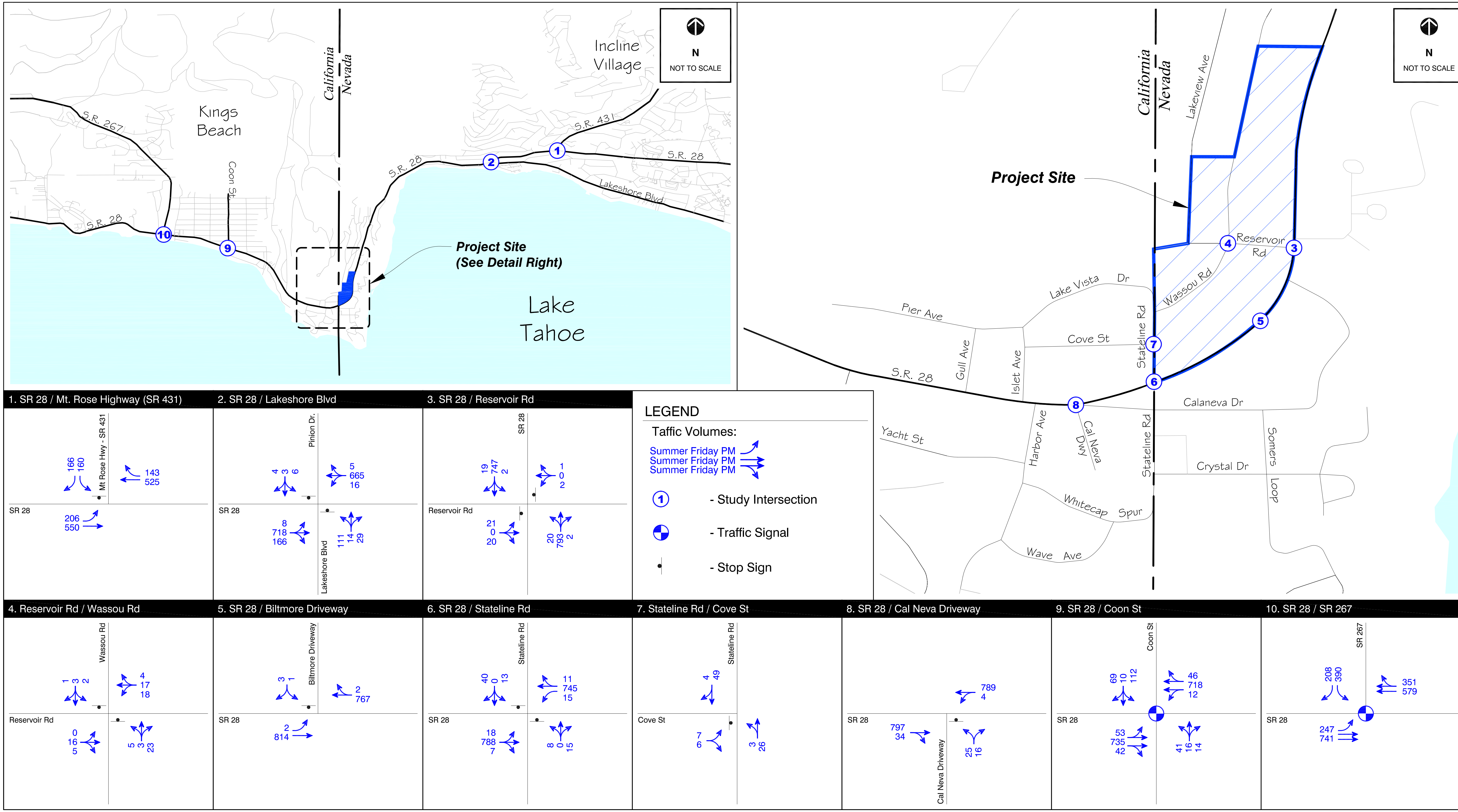


FEHR & PEERS
TRANSPORTATION CONSULTANTS

Aug 13, 2009 JM
N:\Reno Projects\2008\RN08-0396 (Boulder Bay EIS)\Graphics\396 Fig 1.dwg

Boulder Bay EIS
Project Location & Vicinity Map

Figure 4.8-1



FEHR & PEERS
TRANSPORTATION CONSULTANTS

May 15, 2009 JM
N:\Reno Projects\2008\RN08-0396 (Boulder Bay EIS)\Graphics\396 Fig 2.dwg

Boulder Bay EIS
Existing Lane Configurations, Control Types, and Traffic Volumes

Figure 4.8-2

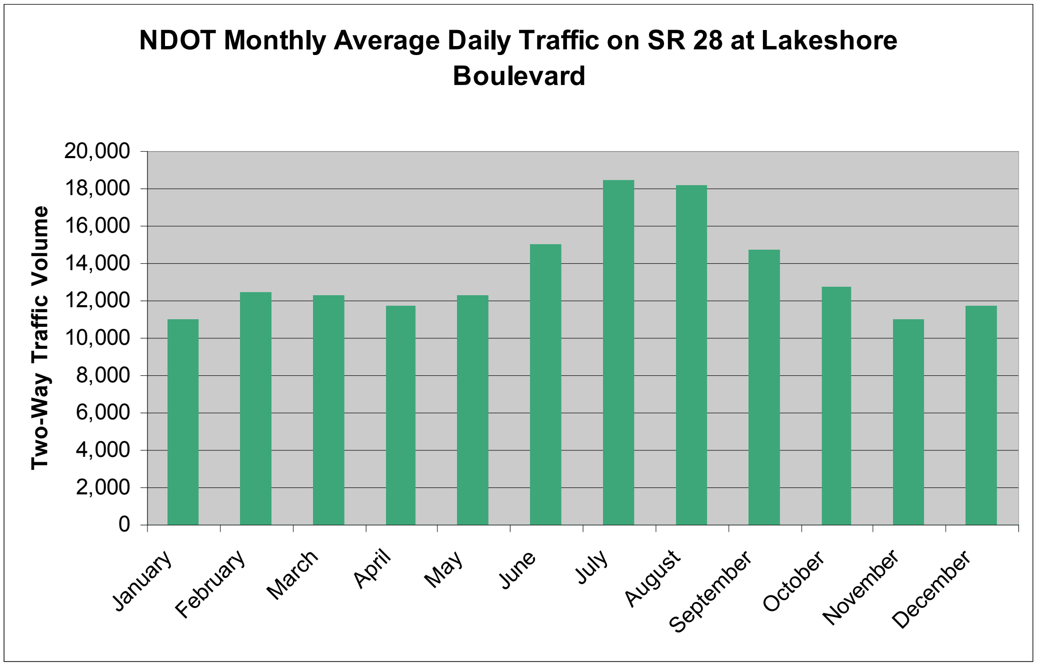


Exhibit 4.8-1: Existing Traffic Count Data

Source: Boulder Bay Resort Transportation Study, LSC Transportation Consultants, Inc.

Intersection turning movement counts were collected at the study intersections during the Friday PM and Saturday Midday peak periods, during the summer season. The data showed that of the two time periods, the Friday PM peak hour had higher traffic volumes at all of the study intersections (see Exhibit 4.8-2). Therefore, project analysis was performed for the Friday PM peak period during summer months (worst case scenario).

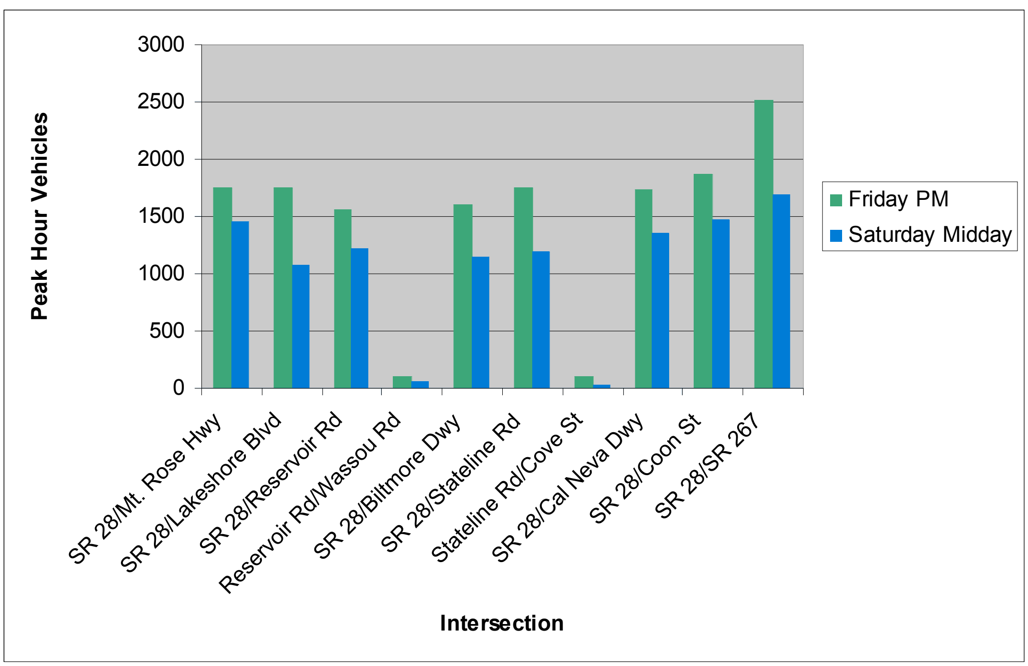


Exhibit 4.8-2: Existing Traffic Count Data

Historical Traffic Patterns

Table 4.8-2 illustrates the historical average daily traffic (ADT) volumes for SR 28, SR 267, Lakeshore Boulevard, and Mount Rose Highway from 1998 to 2007. As shown in the table, the ADT volumes have fluctuated from year to year over the past 10 years, with some segments showing growth while others have decreased in volume. Overall, volumes have remained relatively flat for the last 10 years.

Table 4.8-2

Historic Average Daily Traffic Volumes – SR 28

Segment	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average Annual Growth
SR 28 East of SR 267	19600	19100	19100	19100	19100	17500	18400	18000	17800	17800	**-1.01%**
SR 28 East of Coon St	24800	24200	15100	15100	15100	14800	15200	15200	14500	14500	**-4.88%**
SR 267 North of SR 28	9200	9200	9200	9200	9200	9200	9300	9300	9700	9900	**0.83%**
SR 28 East of Cal Neva Drive	13900	13600	17300	12100	14300	14900	14900	13100	13600	13100	**0.60%**
SR 28 West of California/ Nevada State Line	13900	13600	17300	12100	14300	14900	14900	13100	13600	13100	**0.60%**
SR 28 West of Lakeshore Blvd	13755	13655	14080	14040	14230	14310	14067	13500	11700	13000	**-0.44%**
Lakeshore Blvd East of SR 28	3100	3050	3050	2600	2450	2550	2350	2500	2950	2700	**-1.11%**
SR 28 West of Mt Rose Hwy	12100	12100	12100	12000	11800	14000	12300	11500	10500	13000	**1.40%**
Mt Rose Hwy East of SR 28	5800	5900	5850	5600	5300	5650	5450	5000	5050	5400	**-0.67%**
SR 28 East of Mt Rose Hwy	11500	12200	11800	11800	12100	13100	12000	10900	9700	12000	**0.97%**

Sources: [1] Traffic Volumes on State of California Highways, Caltrans (1998-2007)
[2] 2007 Annual Traffic Report, Nevada Department of Transportation

Existing Traffic Volumes

As discussed, intersection turning movement counts were performed in August and September 2008. Counts performed at the driveways and access roads of the existing Tahoe Biltmore show that the site currently generates 132 Friday PM peak hour trips. The daily trip generation of the existing Tahoe Biltmore was estimated as 1,835 daily trips. Based on the low volume of traffic observed entering and exiting the existing Tahoe Biltmore, it does not appear that the facility is operating at full capacity. Therefore, improvements that increase capacity and visitors to the Tahoe Biltmore would result in increased traffic on the existing roadway network.

Baseline existing traffic conditions were developed by generating vehicle trips for the existing land uses assuming full capacity and optimum operating conditions using the same methodology used to estimate the proposed project and alternative vehicle trips. A detailed discussion of the trip generation methodology is provided in the "Project Analysis Methodology" section of this document.

The baseline existing conditions were developed assuming the following existing land uses on the project site are operating at optimum conditions and at full capacity (based on TRPA and ITE trip generation rates) :

- Tahoe Biltmore Hotel: 92 rooms
- Casino: 22,400 square feet (gaming floor area)
- Café Biltmore: 4,500 square feet
- Conrad's Restaurant: 3,300 square feet
- Accessory uses (for the purposes of trip generation) included:

    Meeting Space – 4,862 square feet

    Bar/Lounge – 4,572 square feet

    Tahoe Biltmore Retail – 3,312 square feet

Table 4.8-3 displays the trip generation for the existing Tahoe Biltmore and associated uses assuming that all of the uses are operating at optimum conditions and at full capacity.

As shown in Table 4.8-3, if the existing Tahoe Biltmore land uses were operating at full operational capacity, based on current TRPA and ITE trip generation rates, and casino rates (developed from other casino trip generation studies), the site would generate 5,581 daily trips and 350 PM peak hour trips. The intersection turning movement counts collected at the driveways and access roads to the project site show that the existing Tahoe Biltmore is currently generating only 1,835 daily trips and 132 PM peak hour trips.

Baseline traffic conditions were developed to represent traffic operations at the study intersections assuming the existing Tahoe Biltmore land uses were generating the full 350 PM peak hour trips. Intersection turning movement volumes were developed using the following steps:

- The existing 132 PM peak hour Tahoe Biltmore trips were subtracted from the study intersections to represent existing conditions assuming the Tahoe Biltmore site is undeveloped.
- The 350 PM peak hour trips that could be generated by existing Tahoe Biltmore (assuming optimum conditions) were then added to the existing intersection turning movement counts at the study intersections for baseline conditions analysis.

The baseline traffic volumes are shown on Figure 4.8-2A. Comparing the existing turning movement count volumes at the Tahoe Biltmore driveways to the trip generation estimates for the land uses on site, shows that the Tahoe Biltmore is currently operating at less than optimum/full occupancy conditions, which is consistent with observations at the site during the counts.

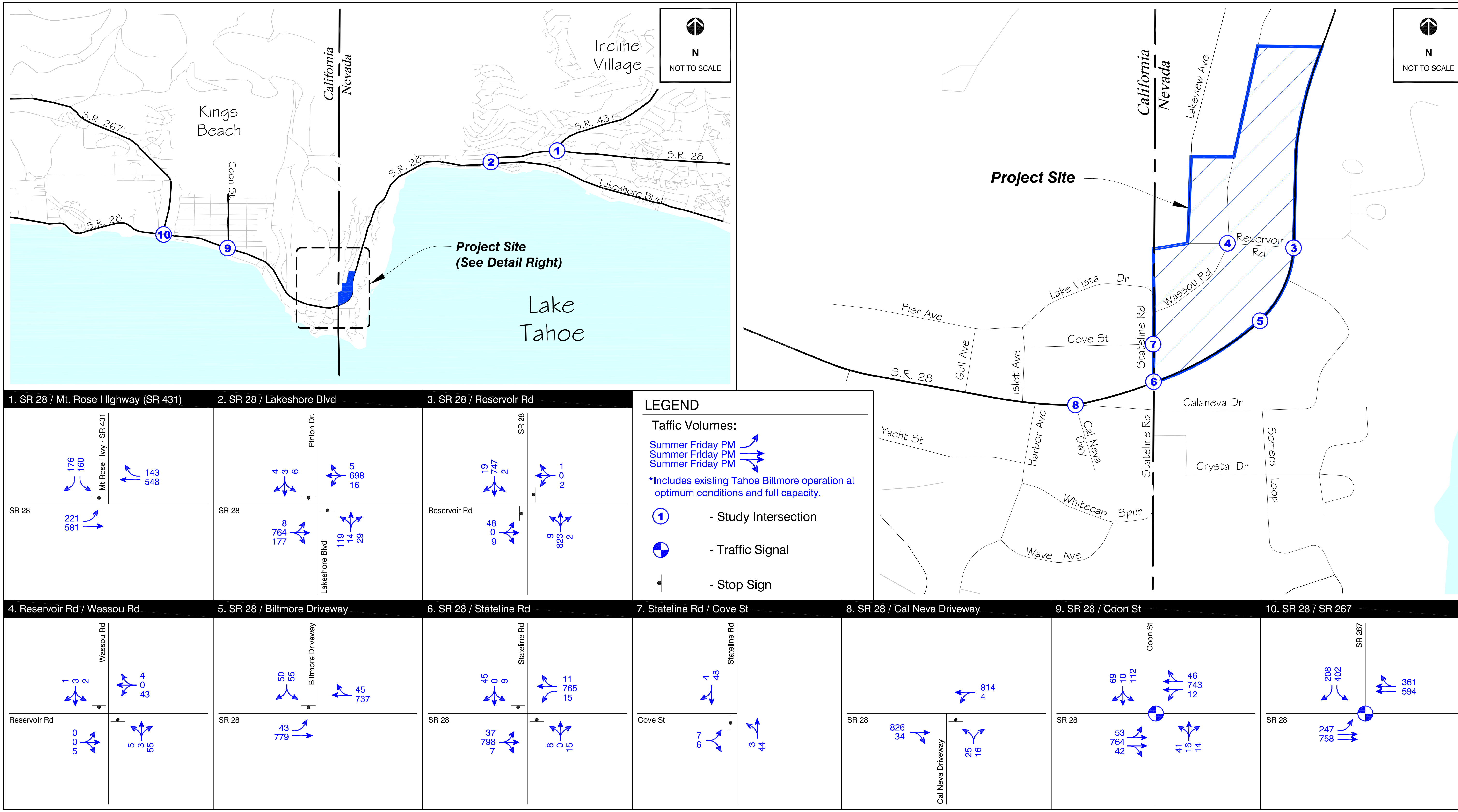
Table 4.8-3

Existing Tahoe Biltmore and Associated Land Uses – Trip Generation

Land Use	Density[1]	Rates[2]				Trips[3]			
		Daily	PM	PM In	PM Out	Daily	PM	PM In	PM Out
Hotel	92 rms	8.92	0.7	49%	51%	821	64	31	33
Casino	22.4 ksf	265.88	16.67	45%	55%	5,956	373	168	205
Meeting Space	4.862 ksf	Accessory Use to Hotel							
Café (High Turnover Sit-Down Restaurant)	4.5 ksf	127.15	11.15	59%	41%	572	50	30	21
Fine Dining (Quality Restaurant)	3.3 ksf	89.95	7.49	67%	33%	297	25	17	8
Bar/Lounge	4.572 ksf	Accessory Use to Hotel							
Service Retail	3.312 ksf	Accessory Use to Hotel							
Total "Raw" Trip Generation						7,645	513	246	267
Alternative Mode Trips						(-710)	(-49)	(-23)	(-25)
Internal Capture Trips						(-977)	(-82)	(-48)	(-34)
Pass-By Trips						(-377)	(-32)	(-20)	(-12)
Total External Roadway Trips Created by Existing Tahoe Biltmore						**5,581**	**350**	**155**	**196**

Source: Fehr & Peers, 2009

Notes:
[1] du = dwelling units, rms = rooms, ksf = 1,000 square feet
[2] Daily rates are from the TRPA Trip Table and PM rates are from ITE. ITE Daily rates were used where the TRPA Trip Table did not provide rates. The casino rate was developed based on other studies.
[3] Numbers may differ slightly from the trip generation spreadsheet due to rounding



FEHR & PEERS
TRANSPORTATION CONSULTANTS

Sep 03, 2009 JM
N:\Reno Projects\2008\RN08-0396 (Boulder Bay EIS)\Graphics\396 Fig 2 - alt A.dwg

Boulder Bay EIS
Baseline Existing Lane Configurations, Control Types, and Traffic Volumes
Figure 4.8-2A

To further validate that the existing Tahoe Biltmore was operating at less than full capacity in 2008 when traffic counts were collected, market analysis information has been provided by the applicant for the last ten years (1999-2008) and is shown in Table 4.8-4.

Table 4.8-4

North Lake Tahoe (NLT) Market Analysis 1999-2008

Year	Operating Indicators		
	North Lake Tahoe Gaming Win (1999$)	**North Lake Tahoe Gaming Revenue Index (1999 $)**	**Tahoe Biltmore Revenue Index (1999 $)**
1999	41,859,000	100%	100%
2000 (20 Year Peak in NLT Gaming)	42,034,243	100%	104%
2001	38,982,875	93%	100%
2002	35,590,235	85%	110%
2003	33,195,886	79%	101%
2004	36,853,852	88%	92%
2005	36,506,011	87%	83%
2006	35,001,809	84%	75%
2007	33,977,282	81%	67%
2008	26,370,109	63%	54%

Source: Crystal Bay Market Analysis, 2009

The data in Table 4.8-4 shows the total revenue for NLT Gaming Win for the years 1999-2008. Based on this information, the highest revenue for NLT casinos was in 2000, which happens to also represent a 20-year peak. The Revenue Index for NLT gaming show how each year's revenue compares with the 2000 peak year (in terms of 1999 dollars). Based on this, the revenue for NLT casinos in 2008 was approximately 63% of 2000 revenue.

Without showing raw revenue numbers for the Tahoe Biltmore, the last column of the table compares each year of Tahoe Biltmore revenue to its 1999 value. In 2002, the Crystal Bay Club filed for bankruptcy, causing a peak in revenue (6% above 2000) at the Tahoe Biltmore. The Tahoe Biltmore's 2008 revenue was 49% (54% / 110%) compared to 2002.

While the data in Table 4.8-4 represents gaming revenue only (i.e. it does not portray number of patrons), it gives a good idea of the state of business in 2008 when traffic count data was collected and how it may compare to peak level conditions.

Intersection Operations

Level of service (LOS) is a term used to refer to the operating performance of an intersection or roadway. LOS is measured on a scale from A to F, with A representing the best performance and F the worst, based on the average time a vehicle's travel is delayed due to intersection control. Detailed descriptions of unsignalized and signalized LOS standards established in the Highway Capacity Manual (HCM) 2000 are provided in Table 4.8-5.

Table 4.8-5

Intersection Level of Service Criteria

Level of Service Description		Signalized Intersections (Average Control Delay) [1]	Unsignalized Intersections (Average Control Delay) [2]
A	Represents free flow. Individual users are virtually unaffected by others in the traffic stream.	0 to ≤ 10.0 sec/veh	0 to ≤ 10.0 sec/veh
B	Stable flow, but the presence of other users in the traffic stream begins to be noticeable.	>10.0 to ≤ 20.0 sec/veh	>10.0 to ≤ 15.0 sec/veh
C	Stable flow, but the operation of individual users becomes significantly affected by interactions with others in the traffic stream.	>20.0 to ≤ 35.0 sec/veh	>15.0 to ≤ 25.0 sec/veh
D	Represents high-density, but stable flow.	>35.0 to ≤ 55.0 sec/veh	>25.0 to ≤ 35.0 sec/veh
E	Represents operating conditions at or near the capacity level.	>55.0 to ≤ 80.0 sec/veh	>35.0 to ≤ 50.0 sec/veh
F	Represents forced or breakdown flow.	>80.0 sec/veh	>50.0 sec/veh

Source: Highway Capacity Manual, 2000

The level of service standards for the jurisdictions with regulatory authority in the Lake Tahoe basin are described below in the Regulatory Setting section of this chapter.

The existing intersection level of service and delay based on the raw intersection turning movement counts, and the baseline level of service and delay based on full occupancy and optimum operating conditions at the existing Tahoe Biltmore, was calculated for the ten study intersections. Level of service at the study intersections was evaluated using Synchro 7 and Sim Traffic microsimulation software, which implement the methods of the Highway Capacity Manual (HCM) 2000. Synchro was used to analyze four of the study intersections – SR 28/Mount Rose Highway, SR 28/Lakeshore Boulevard, SR 28/Coon Street, and SR 28/SR 267. The remaining intersections were analyzed using SimTraffic because of their close proximity to each other. SimTraffic is a micro-simulation software that simulates real-time traffic conditions taking into account interaction between intersections. Synchro calculates level of service on a stand alone intersection basis and does not take into account the interaction between intersections. Therefore, SimTraffic is a better analysis tool for closely spaced intersections.

The Synchro and Sim Traffic output sheets are presented in Appendix W for further reference. The existing and baseline level of service results for the ten study intersections and the SR 28 pedestrian crossing are presented in Table 4.8-6.

Table 4.8-6

Level of Service Results – Existing and Existing Baseline Conditions

Intersection	Control Type [1]	Existing[2] Friday PM Peak		Baseline Existing[3] (Alternative A) Friday PM Peak	
		Delay [4]	LOS	Delay [4]	LOS
SR 28/Mount Rose Highway	SSSC	**>50 (>50)**	**F (F)**	**>50 (>50)**	**F (F)**
SR 28/Lakeshore Boulevard	SSSC	33 **(>50)**	D **(F)**	**47 (>50)**	**E (F)**
SR 28/Reservoir Road	SSSC	15 (28)	C (D)	15 **(40)**	B **(E)**
Reservoir Road/Wassou Road	SSSC	1 (3)	A (A)	2 (3)	A (A)
SR 28/Biltmore Driveway	SSSC	1 (9)	A (A)	3 (17)	A (C)
SR 28/Pedestrian Crossing	Signal	5	A	5	A
SR 28/Stateline Road	SSSC	2 (21)	A (D)	2 (30)	A (D)
Stateline Road/Cove Street	SSSC	1 (4)	A (A)	1 (4)	A (A)
SR 28/Cal Neva Driveway	SSSC	6 (22)	A (C)	6 (25)	A (C)
SR 28/Coon Street	Signal	8	A	8	A
SR 28/SR 267	Signal	26	C	28	C

Source: Fehr & Peers, 2009

Notes:
[1] SSSC = Side Street Stop Control
[2] Existing conditions analysis is based on the raw existing turning movement count data collected in August 2008.
[3] Baseline existing conditions analysis assumes optimum operating conditions and full occupancy of existing Tahoe Biltmore.
[4] Delay is reported in seconds per vehicle for the overall intersection for signalized intersections, and for the overall intersection and worst movement for unsignalized intersections (the worst movement is shown in parenthesis).
Bold indicates deficient operations.

As shown in Table 4.8-6, the SR 28/Mount Rose Highway and SR 28/Lakeshore Boulevard intersections operate at unacceptable levels of service during the Friday PM peak period under existing and baseline existing (Alternative A) conditions. The SR 28/Reservoir Road intersection also operates at an unacceptable level of service under baseline existing (Alternative A) conditions. The Nevada Department of Transportation (NDOT) and Tahoe Transportation District are considering installing a roundabout at the SR 28/Mount Rose Highway intersection. A roundabout would provide acceptable intersection operations. The remaining study intersections operate at acceptable levels of service under existing and baseline conditions, as well as the signalized pedestrian crosswalk.

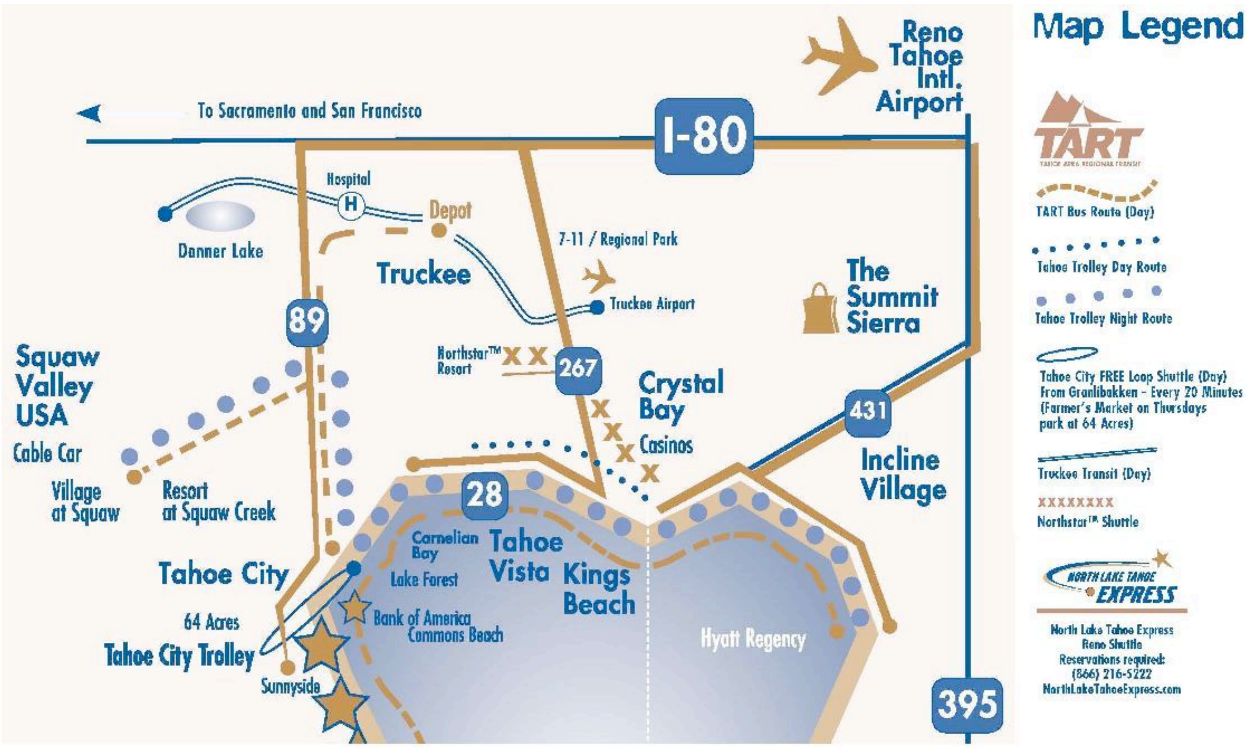
Existing Ground Transit Facilities

The Tahoe Area Regional Transit (TART), which is operated by Placer County, provides half-hourly service to the north Lake Tahoe area 7 days per week (as of September 2009). Routes run from 6:00 AM to 7:00 PM, along SR 28, SR 89 and Lakeshore Boulevard. During the winter, service is also provided along SR 267. TART buses provide bike racks during the summer months and ski racks during the winter months.

The North Lake Tahoe Resort Association funds the "Tahoe Trolley" service during the summer months. The Tahoe Trolley Day Route runs along the north shore of Lake Tahoe and provides half-hourly service from 10:00 AM to 5:00PM. The Tahoe Trolley Night Route runs from Squaw Valley USA to Incline Village. Hourly service is provided from 6:00 PM -12:00 AM (midnight).

The Northstar Resort operates a free shuttle during the summer months that provides hourly service from 7:00 AM – 9:00 PM between Northstar at Tahoe and north Stateline.

Existing ground transit facilities and routes are shown on the exhibit below.



*Summer 2008 route map and schedule (may change in following years).
Source: www.laketahoetransit.com

Existing Waterborne Transit Facilities

The Tahoe Queen's winter ski shuttle provides point-to-point transit service from South Shore to North Shore with connections provided for transport to Squaw Valley Ski Resort. This is the only publicly operated waterborne transit service in Lake Tahoe.

The Tahoe Metropolitan Planning Organization has initiated an inter- and intra-regional planning effort to assess additional waterborne transit services in the Lake Tahoe Basin.

Existing Bicycle and Pedestrian Facilities

There are no designated bicycle facilities directly adjacent to the project area, however there are many facilities nearby in Incline Village and Tahoe City. These facilities consist of separate multi-use paths for bicycles and pedestrians.

Sidewalks exist on portions of SR 28 near the project area. A pedestrian signal exists on SR 28 to allow pedestrians to cross between the Tahoe Biltmore and the Crystal Bay Club. Pedestrians were counted at the pedestrian signal on SR 28 in August 2008. During the Friday PM peak, 103 pedestrians crossed SR 28 at the pedestrian signal.

Source: www.tahoebike.org

Existing Parking Facilities

On-street parking is not available on SR 28 adjacent to the project area. The Tahoe Biltmore provides surface parking in four separate surface lots, as well as smaller groups of spaces dispersed throughout the existing site.

REGULATORY SETTING

Numerous transportation-related standards and criteria apply to the project area, reflecting the number of jurisdictions with regulatory authority over transportation conditions. Transportation system standards and performance targets applicable to the project area are identified in *Mobility 2030: Lake Tahoe Basin Regional Transportation Plan,* August 27, 2008 *(Mobility 2030)* which is a long range planning document that shapes the future of the Lake Tahoe Basin transportation system, and the *North Stateline Community Plan (NSCP)* which provides goals and policies tailored to the North Stateline area.

The Tahoe Regional Planning Agency (TRPA) maintains jurisdiction over all aspects of transportation planning in the Lake Tahoe basin with the Nevada Department of Transportation (NDOT) overseeing Nevada's state highway system and Caltrans overseeing California's state highway system. Both NDOT and Caltrans' standards are provided because the analysis includes intersections and roadways in both states. An overview of the transportation and circulation standards applicable to the Project is identified in Table 4.8-7.

Table 4.8-7

Applicable Transportation, Parking and Circulation Standards

Jurisdiction/ Plan/Policy	Standard/Criteria
Tahoe Regional Planning Compact	The goal of transportation planning shall be: (A) To reduce the dependency on the automobile by making more effective use of existing transportation modes and public transit to move people and goods within the region; and (B) To reduce to the extent feasible air pollution which is caused by motor vehicles.
Mobility 2030: Lake Tahoe Basin Regional Transportation Plan (Mobility 2030)	The Goals and Policies of the Mobility 2030 reflect the consideration of environmental, social and economic factors in making transportation-related decisions. Specific goals of Mobility 2030 include the following: 1) reduce reliance on the private automobile; 2) provide for alternative modes of transportation; 3) serve the basic transportation needs of the citizens of Lake Tahoe; 4) support the economic base of the region; and 5) minimize adverse impacts on man and the environment.
Federal Planning Guidelines	In 1999, the Lake Tahoe Basin became a federal metropolitan planning organization (MPO). Federal regulations, pertaining to transportation, require that the MPO planning process provide for the consideration of projects and strategies that will: - increase the safety and security of the transportation system for motorized and non-motorized users; - enhance the integration and connectivity of the transportation system, across and between modes, for people and freight; - promote efficient system management and operation; - emphasize the preservation of the existing transportation system.
TRPA Goals and Policies	Establish level of service criteria for various roadway categories and signalized intersections. Level of service criteria during peak periods shall be: - LOS C on rural recreational/scenic roads; - LOS D on rural developed area roads; - LOS D on urban developed area roads; - LOS D for signalized intersections; - LOS E may be acceptable during peak periods in urban areas, not to exceed four hours/ day. The policies and objectives of this document also place high priority on constructing pedestrian and bicycle facilities in urbanized areas and encouraging waterborne transportation measures.
TRPA Thresholds	TRPA has nine threshold categories: water quality, air quality, noise, scenic, vegetation, soils, wildlife, recreation, and fisheries. There is no threshold for transportation; however transportation system projects in the Lake Tahoe Basin can not degrade any of the thresholds. Rather, TRPA must make findings that the proposed projects attain or maintain existing thresholds.
TRPA Thresholds: Air Quality	Air Quality has two transportation related standards: vehicle miles traveled (VMT) and traffic volumes on US 50. - AQ-5 US 50 Traffic Volumes – 7% reduction in traffic volume on the US 50 corridor from 1981 base year values, winter, 4 p.m. to 12 a.m. (25,173 vehicles at the US 50/Park Avenue intersection.) - AQ-7 VMT (Vehicle Miles Traveled) – 10% reduction in VMT in the Lake Tahoe Basin from 1981 base year values. (1,648,466 VMT for a peak summer day.)

Table 4.8-7

Applicable Transportation, Parking and Circulation Standards

Jurisdiction/ Plan/Policy	Standard/Criteria
TRPA Code of Ordinances	Adherence to: Chapter 14 requirements for traffic considerations, including VMT reduction policies and level of service goals for street and highway traffic, and Chapter 93 requirements for traffic analyses; the Code sections require reducing significant impacts to a less than significant level.
North Stateline Community Plan	The Plan's overall goal for transportation is to reduce reliance on the automobile by providing enhanced transit, pedestrian and bicycle opportunities into and within the plan area.
NDOT	NDOT requires that intersections and roadways operate LOS D or better.
Caltrans District 3 Thresholds	Requires that measures be identified to mitigate significant impacts caused by project traffic on state highways. The following are considered to be significant impacts: - Vehicle queues at intersections exceeding the existing storage lane length; - Project impacts that cause the highway or intersection LOS to deteriorate beyond LOS D. If LOS is already "E" or "F", then quantitative measure of increased queue lengths and delay should be used to determine appropriate mitigation measures.
Washoe County	Transportation related guidelines specified in the Washoe County Regional Transportation Plan primarily pertain to the urban areas of the Truckee Meadows.
Other	Signal warrant criteria as established by the Federal Highway Administration Manual on Uniform Traffic Control Devices.

Source: Fehr & Peers, 2009

The key study issues that were identified for evaluation of impacts based on the TRPA Environmental Checklist for transportation and circulation of the Project are described below.

- Will the Project result in the generation of 100 or more new Daily Vehicle Trip Ends (DVTE)? Measured by daily trip generation.
- Will the Project result in an increase in Vehicle Miles of Travel? Measured by vehicle miles of travel.
- Will the Project result in changes to existing parking facilities, or demand for new parking? Measured by parking analysis.
- Will the Project result in a substantial impact upon the existing transportation systems, including roadways and intersections, transit, bicycle or pedestrian facilities? Measured by vehicle level of service (LOS) and queuing, access to transit, and bicycle and pedestrian facilities.
- Will the Project result in a substantial impact upon the existing transportation systems due to construction traffic? Measured by truck trips per day.
- Will the Project result in alterations to present patterns of circulation or movement of people and/or goods? Measured by vehicle access and circulation (new road alignments).

- Will the Project result in an increase in traffic hazards to motor vehicles, bicyclists, or pedestrians? Measured by design features, sight distance, driveway spacing, and grades.

The following sections provide additional detail on these issues.

Traffic Volumes

TRPA Standards

The TRPA Code of Ordinances – Chapter 93 implements TRPA's Air Quality Plan related to traffic volumes. The TRPA Code of Ordinances states that a "significant increase" is an increase of more than 200 daily vehicle trips, a "minor increase" is an increase of 100 to 200 daily vehicle trips, and an "insignificant increase" is an increase of less than 100 daily trips. If a project results in a significant increase in daily vehicle trips, all traffic and air quality impacts must be mitigated consistent with the environmental thresholds, the Goals and Policies, the Regional Transportation Plan and the 1992 Air Quality Plan.

Level of Service Standards

TRPA Standards

Regional traffic operations and LOS standards for the Lake Tahoe basin, established in Chapter 24 – Transportation Element of the TRPA Goals and Policies, require that peak-period traffic flow should not exceed the following:

- Level of Service C on rural recreational/scenic roads
- Level of Service D on rural developed area roads
- Level of Service D on urban developed area roads
- Level of Service D for signalized intersections
- Level of Service E may be acceptable during peak periods in urban areas, not to exceed four hours per day

TRPA currently has no adopted standard for unsignalized intersections.

North Stateline Community Plan

The Policies and Action Programs included in the NSCP encompass the following elements related to level of service: LOS D shall be maintained at the following intersections: SR 28/casino crosswalk (pedestrian signal) and SR 28/Stateline Road.

NDOT Standards

NDOT considers the following to be a significant impact to traffic operations: Deterioration of state highway facility operations (intersections, state highways, and ramp terminals) beyond LOS D.

Caltrans Guide for Preparation of Traffic Impact Studies

Caltrans Guide for Preparation of Traffic Impact Studies states: "Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State highway facilities, however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway facility is operating at less than the appropriate target LOS, the existing MOE (measures of effectiveness) should be maintained."

Caltrans District 3

For roadways and intersections in California, Caltrans District 3 considers the following to be significant project impacts:

- Deterioration of state highway or intersection level of service beyond LOS D;
- Vehicle queues at intersections that exceed existing turn lane storage.

Level of Service Analysis

Level of service was calculated at the study intersections using Synchro 7 and SimTraffic microsimulation software. The closely spaced intersections near the project area were analyzed using SimTraffic microsimulation software to account for the interaction between the intersections. Synchro 7 software was used to analyze the remaining intersections (SR 28/Mount Rose Highway, SR 28/Lakeshore Boulevard, SR 28/Coon Street, and SR 28/SR 267).

The Project will have a significant impact if it degrades the level of service to:

- LOS E or F on all study intersections

Since there is no current standard to address unsignalized intersections, the standard that was applied to unsignalized intersections for purposes of this study was consistent with the level of service standards for signalized intersections, as stated above.

Vehicle Miles of Travel

Vehicle Miles of Travel (VMT) is a computed value, which correlates to the extent of an area's reliance on private automobile for trip-making. The TRPA transportation model forecasts the number of trips made on the highway network and the distance between trip origins and destinations for each trip purpose. Total VMT is the sum of all these trip lengths.

TRPA Standards

The 2006 Threshold Evaluation Report (TRPA) includes the following two air quality management threshold standards that relate to transportation facilities in the Region: 1) a reduction in VMT by 10% from the 1981 base year conditions to reduce nitrate deposition, and 2) a reduction in VMT by 10% from 1981 base year conditions to improve visibility.

The Tahoe Metropolitan Planning Organization (TMPO) "utilizes a new GIS-based traffic model package (TransCAD) that began development in 2004. The model utilizes an activity-based model that was informed by an extensive travel survey that collected household travel data as well as travel diary information from over 1,200 households. The survey effort focused on residents, overnight-visitors, and day-visitors within the summer and winter months to capture seasonality patterns." (Mobility 2030)

Previously, an older, less detailed TranPlan model was used to calculate VMT based the number of trips made on the highway network and the distance between trip origins and trip destinations. Based on the previous travel demand model, TRPA's assessment of VMT indicates that the 1981 level of 1,648,466 VMT on a peak summer day decreased by approximately 4 percent to 1,580,000 in 2004. To attain the desired ten percent reduction, a target of 1,483,619 VMT, based on the original model, must be attained.

TRPA's "new TransCAD model is based on an expanded and more complex street network than the old TranPlan model. For that reason, the new model results are not directly comparable to the old model and should be considered a worse case VMT analysis. Future forecasts will be made using the new model, but comparisons to past VMT estimates must be made using an updated method to the old model. Using actual traffic counts to update previous estimates, VMT has been estimated to have decreased by 6.5 percent from 1981 levels." (Mobility 2030)

North Stateline Community Plan Policies and Action Program

The NSCP includes the following policy related to VMT in the NSCP area: "Achieve the vehicle miles of travel fairshare target within the plan area. The fairshare VMT target for North Stateline is an increase of no more than 1,150 VMT." This policy indicates that uses in the North Stateline Community Plan area should not increase overall Tahoe Basin VMT by more than 1,150. Specific implementation measures suggested to help achieve this goal are: to provide affordable and/or employee housing within the plan area, to provide enhanced transit and shuttle service, and to provide bicycle and pedestrian paths within the plan area.

Project Access and Circulations Standards

TRPA Standards

Mobility 2030 states that driveways shall be designed and sited to minimize impacts to regional traffic flow and safety, as well as on public transportation, adjacent roadways and intersections, and bicycle and pedestrian facilities.

North Stateline Community Plan

Projects are encouraged to provide access to parking from streets other than SR 28, when options other than SR 28 access exist.

Left turn pockets shall be created at public road intersections along SR 28 through the plan area.

Wassou Road, which currently serves as a parking aisle through the existing Tahoe Biltmore parking area, should be clearly defined and delineated as a roadway that is separate from the Biltmore parking lot.

Washoe County Development Code

The Washoe County Development Code states that:

(1) Driveway access points shall have a width of not less than 20 feet

(2) The site shall be designed so that a vehicle within the parking area will not have to enter a public street to move from one location to any other location within the parking area

(3) Vehicular access to arterial streets and highways will be permitted only in accordance with driveway locations and access design to be approved by the County Engineer

Bicycle and Pedestrian Circulation

North Stateline Community Plan

All projects shall install a pedestrian walk on-site as a condition of project approval. Projects are encouraged to provide pedestrian facilities between uses within the plan area. Landscaping, street furniture and lighting should be included within the walkways. Projects are encouraged to provide outdoor plazas.

As a condition of project approval, bicycle racks or secured lockers shall be installed at throughout the plan area.

Transit Access

North Stateline Community Plan

Projects which include the addition of tourist accommodation units (TAU) or commercial floor area (CFA) shall participate in the development and operation of a shuttle service for visitors to Incline Village and to recreation areas. Shuttle service shall also be provided for employees that work within the North Stateline Community Plan area to major residential areas, such as Incline Village and Kings Beach.

Construction Traffic

TRPA Standards

Construction activity may result in a significant impact if it generates traffic above that which will be generated under normal operation. If construction traffic exceeds traffic generated in the normal operating condition, level of service must be analyzed for the construction condition.

Site grading in the Lake Tahoe basin is strictly regulated by TRPA and not allowed during the winter season from October 15 to May 1.

Construction activity is a temporary condition and will not permanently affect the environmental setting.

Parking Requirements

TRPA Standards

Chapter 24 – Driveway and Parking Standards of the TRPA *Code of Ordinances* refers to the Washoe County Signage, Parking and Design Standards and Guidelines for regulation over the NSCP area of the Lake Tahoe Basin.

TRPA's *Mobility 2030* expresses the desire for parking to be screened from street view (behind structures) and structured within buildings below grade. In addition, the Parking Goal is to "develop parking management strategies for the Lake Tahoe region, including minimum/maximum parking standards, shared parking, bicycle parking, among others.

North Stateline Community Plan

It is the goal of the Policies and Action Program to reduce the visual predominance of parking lots and asphalt and improve the efficiency of parking area use.

The number of parking spaces required by Washoe County Development Code shall be the maximum number of parking spaces permitted. Development Code parking requirements may be modified per Article 410 of the Washoe County Development Code.

Projects are encouraged to provide access to parking from streets other than SR 28, when options other than SR 28 access exist.

Washoe County Signage, Parking and Design Standards and Guidelines

Parking structures should be designed to be integral with the architecture/design of the neighborhood and the development it is serving. They should be attractive and their visual impact as a parking structure should be minimized through design.

Washoe County Development Code

The Washoe County Development Code provides standards for the required number of parking spaces, special provisions such as motorcycle, bicycle, and handicapped parking, design standards pertaining to appearance and access, and truck parking and loading.

EVALUATION CRITERIA WITH POINTS OF SIGNIFICANCE

Based on the regulating jurisdictions' environmental thresholds, standards, and transportation related criteria discussed previously, Table 4.8-8 presents the evaluation criteria and measures of effectiveness used to analyze the Project.

Table 4.8-8

Evaluation Criteria with Point of Significance – Transportation, Parking and Circulation

Evaluation Criteria	As Measured By	Point of Significance	Justification
TRANS-1. Will the Project result in generation of 100 or more new Daily Vehicle Trip Ends (DVTE)?	Traffic Volumes	An increase of 100 or more new daily trips	TRPA Code of Ordinances

Table 4.8-8

Evaluation Criteria with Point of Significance – Transportation, Parking and Circulation

Evaluation Criteria	As Measured By	Point of Significance	Justification
TRANS-2. Will the Project result in increase in Vehicle Miles of Travel?	Vehicle Miles of Travel	An increase of more than 1,150 VMT	NSCP
TRANS-3. Will the Project result in changes to existing parking facilities, or demand for new parking?	Number of parking spaces provided	Parking supply greater than maximum allowable supply Unsightly visual predominance of parking lots and asphalt	NSCP, Washoe County Parking Demand Table TRPA Mobility 2030, NSCP
TRANS-4. Will the Project result in a substantial impact upon the existing transportation systems, including roadways and intersections?	Level of Service/Delay Intersection Queuing	Signalized and Unsignalized Intersections: Deterioration of level of service to unacceptable levels (LOS E or F). If an intersection is already operating unacceptably, any increase in delay is unacceptable and the intersection must be mitigated to the 'before project' level. Note: Level of service E for less than 4 hours during the peak travel periods is considered acceptable. SR 28/SR 267: Vehicle queues at intersections that exceed existing turn lane storage	TRPA Goals and Policies, NSCP, NDOT, Caltrans Caltrans District 3
TRANS-5. Will the Project result in a substantial impact upon the existing transportation systems, including transit facilities?	Transit Facilities	Projects including additional TAU's or CFA should participate in the development and operation of a shuttle service for visitors and employees. Creates impacts or delays to transit.	NSCP
TRANS-6. Will the Project result in a substantial impact upon the existing transportation systems, including bicycle or pedestrian facilities?	Bicycle and Pedestrian Facilities Construction Activity	Adequate pedestrian walk not provided on-site Bicycle racks or secured lockers not provided on-site Creates conflicts between bicycles/pedestrians and vehicles Impedes planned bicycle and pedestrian plans Construction activity between October 15 and May 1. Generates traffic above that which will be generated under normal operation.	NSCP

Table 4.8-8

Evaluation Criteria with Point of Significance – Transportation, Parking and Circulation

Evaluation Criteria	As Measured By	Point of Significance	Justification
TRANS-7. Will the Project result in a temporary impact upon existing transportation systems due to construction traffic?	Truck Trips	Construction related daily traffic volumes greater than project build-out daily traffic volumes	TRPA, NDOT standards
TRANS-8. Will the Project result in alterations to the present patterns of circulation or movement of people and/or goods?	Access and Circulation to the Project area	Driveway interference with regional traffic flow, safety, public transportation, adjacent roadways and intersections, and bicycle and pedestrian facilities Parking access not provided on streets other than SR 28 Left-turn pockets not provided at public road intersections Wassou Road not clearly defined and delineated as separate from the surrounding parking lot. Inadequate on-site circulation through parking area	TRPA Mobility 2030 NSCP Washoe County Development Code
TRANS-9. Will the Project result in an increase in traffic hazards to motor vehicles, bicyclists, or pedestrians?	Design Features Sight Distance Driveway Spacing Grades	Overall circulation.	Engineering standards, judgment

Source: Fehr & Peers, 2009

PROJECT ANALYSIS METHODOLOGY

Trip Generation Rates

Vehicle trips were generated for a majority of the Project development uses using trip generation rates from *Trip Generation, Eighth Edition* (Institute of Transportation Engineers (ITE), 2008) and the TRPA Trip Table (Tahoe Regional Planning Agency, 2004).

Trip generation rates are not provided for the Meeting Space and Casino land uses by either TRPA or ITE, therefore alternative rates and methodologies were used to generate vehicle trips for these uses.

Meeting Space and Other Accessory Uses

The ITE description of the hotel land use category includes accessory uses such as restaurants, gift shops, fitness rooms, and meeting and banquet rooms or convention facilities. In order to determine if the size of the meeting space included at the existing Tahoe Biltmore (Alternative A) and the proposed Boulder Bay project alternatives (B, C, D, and E) appropriately fit within the average meeting space to hotel room proportion, a study of local hotels in the Reno-Lake Tahoe area was evaluated. The meeting space square footage to hotel room ratio of eight hotels in the Reno and Lake Tahoe areas was found to determine an accurate average for the area. The average was found to be 51.13 square feet of meeting space per hotel room. The data comparisons ranged from 34 square feet of meeting space per hotel room to 72.73 square feet of meeting space per hotel room. Two outlying data points, 12.24 and 118.48 square feet of meeting space per hotel room, were not included in the average, as they did not appropriately reflect the rest of the data. Since the amount of meeting space per hotel room for the existing Tahoe Biltmore (Alternative A) and the proposed Boulder Bay hotel alternatives (B, C, D, and E) are consistent with the typical characteristics of other hotels in the area, it is appropriate to include the meeting space as an accessory use to the hotel.

Other proposed uses that were analyzed as accessory uses to the hotel and casino were the service retail, bar/lounge, and convenience dining. These uses were included as accessory uses based on the ITE definition of a hotel, and comparison to other hotels and casinos in the area.

Casino

The information available for casino trip generation is limited and varied among sources. Fehr & Peers used data from several sources to develop a method for generating trips for a casino land use.

A trip generation rate for a stand alone casino (no hotel) was generated using information from four casinos located in Illinois, Iowa, and Northern California (identified in *Gaming Casino Traffic*, ITE Article; *Trip Generation Characteristics of Small to Medium Sized Casinos*; and *Final Traffic Impact Analysis – Thunder Valley Casino Expansion*). Vehicle counts were taken at the driveways of these facilities, and information regarding the amount of casino floor area was gathered to determine a PM peak hour trip generation rate. Table 4.8-9 summarizes the data collected and rate calculated.

Based on the information presented in Table 4.8-9, a casino trip generation rate of 16.67 vehicle trips per 1,000 square feet of casino floor area was calculated for the PM peak hour.

The ITE article, *Gaming Casino Traffic*, referenced in the table, also provides time-of-day factors allowing for a daily trip generation rate to be calculated. Based on the information, the daily trip generation is 15.95 times greater than the PM peak hour. Therefore, a daily trip generation rate of 265.88 was used for the project analysis.

Pass-By, Internal Capture, and Mode Split

Pass-by trips are made as intermediate stops on the way from an origin to a primary trip destination without a route diversion.

In a mixed use development it is expected that trips will be made internally within the development. For example, people who live in the residential uses or are staying in the hotel on-site will travel to the retail or restaurant uses, and then return to their home or hotel room without driving. Their trip making activity never ventures to the external roadway network. By applying an internal capture reduction rate to the overall project trip generation, the number of estimated vehicle trips added to the surrounding roadway network is reduced.

Alternative modes of travel are also considered when analyzing project areas that are located near accessible bicycle and pedestrian paths and transit stops. Alternative mode reduction rates account for trips that are made by means other than a vehicle.

Based on consultation with TRPA staff, it was determined that the most appropriate trip generation analysis methodology would be to include the use of an internal capture rate and an alternative mode split.

Table 4.8-9

Casino Trip Generation Information

Casino (Location)	Casino Floor Area (ksf[1])	PM Peak Hour Trips	Trips per Casino Floor Area
St. Charles (St. Louis, IL)[2]	47.0	1,050	22.34
Casino Queen (St. Louis, IL)[2]	65.0	684	10.52
Bluffs Run (Council Bluffs, IA)[3]	34.28	815	23.77
Thunder Valley (Lincoln, CA)[4]	85.0	854	10.05
		Average:	**16.67**

Source: Fehr & Peers, 2009

Notes:
[1] ksf = 1,000 square feet
[2] Box, Paul C., Bunte, William. *Gaming Casino Traffic*. ITE Journal, March, 1998.
[3] Trueblood, Michael, Gude, Tara. *Trip Generation Characteristics of Small to Medium Sized Casinos*. HDR Engineering
[4] MRO Engineering. Final Traffic Impact Analysis – Thunder Valley Casino Expansion. http://www.placer.ca.gov/Departments/CommunityDevelopment/EnvCoordSvcs/EIR/ThunderVly.aspx, February, 2008.

Alternative C Trip Generation

Land Uses

The following land uses are included in Alternative C as defined in Chapter 2:

- Residential Condominium/Townhouse (Whole Ownership Accommodations) – 59 units
- Apartment (Employee Housing) – 14 units
- Hotel (Hotel Rooms) – 300 rooms
- Accessory uses (for the purposes of trip generation) included:

  Meeting Space – 21,253 square feet
  Spa – 19,089 square feet
  Fitness Center – 9,860 square feet
  Day Care Center – 1,665 square feet

Drinking Place – 2,250 square feet.

Service Retail – 3,650 square feet

Convenience Dining – 1,250 square feet

- Casino (Gaming Floor Area) – 10,000 square feet
- Specialty Retail (Comparison Retail, Specialty Retail) – 8,522 square feet
- Fast Food Restaurant without Drive-Thru (Café/Fast Food) – 1,250 square feet
- High Turnover Sit-Down Restaurant (Casual Dining) – 3,398 square feet
- Quality Restaurant (Fine Dining) – 4,825 square feet
- County Park (Park) – 3.07 acres

Mixed Use Internal Capture and Mode Split

Fehr & Peers has completed considerable research on trip generation characteristics of mixed use projects and has developed a series of mixed use trip generation equations that are used to evaluate the potential for internal capture and mode split for mixed use developments. The research has not specifically included hotels or interval ownership residential uses; however, it has included a variety of residential types and represents effects of residents in a mixed use development (whether the residents are short-term or long-term).

This analysis tool was developed using travel behavior surveys and traffic data from representative sites in six diverse U.S. regions. Criteria for the regional sample data included the availability of the following information:

- Regional household travel surveys that distinguish trips to, from, and within small mixed use developments.
- Land use databases at the parcel level with detailed land use classifications, to study land-use intensity and mix down to the parcel level.

The data used to develop the Fehr & Peers mixed use equations has been validated through comparison to field data and accounts for not only development mix, but also scale, context, walkability, and transit.

The analysis takes into account such factors as: project land uses and sizes, population and employment created by the project, number of transit stops and intersections within the project area, employment within one mile of the project area, employment within a 30 minute transit trip, and the regional jobs to housing ratio.

Internal Capture

The internal capture rates used for this analysis came from two sources: surveys conducted by LSC Transportation Consultants, Inc. (2007) and the Fehr & Peers mixed use equations.

The following internal capture rates were used between the land uses:

- Hotel to/from Casino – 21% (survey results)
- Casino to/from Restaurant/Retail – 85% (survey results)

- Casino to/from Residential – 8% (Fehr & Peers research)
- Hotel to/from Restaurant/Retail – 8% (Fehr & Peers research)
- Residential to/from Restaurant/Retail – 8% (Fehr & Peers research)

Alternative Modes of Travel

The alternative mode reduction rates used in the analysis also came from the surveys conducted by LSC Transportation Consultants, Inc. and the Fehr & Peers mixed use equations.

The following alternative mode reduction rates were used for each land use:

- Condominium – 8% (Fehr & Peers research)
- Apartment – 8% (Fehr & Peers research)
- Hotel – 20% (survey results)
- Casino – 8% (Fehr & Peers research)
- Restaurant – 8% (Fehr & Peers research)
- Retail – 8% (Fehr & Peers research)

Pass-By

The following pass-by rates, presented in *Trip Generation Handbook* (ITE, 2004), were used for the project:

- High Turnover Sit-Down Restaurant – 43%
- Quality Restaurant – 44%
- Fast Food Restaurant – 50%
- Retail – 34%

Trip Generation Summary

Tables 4.8-10 through 4.8-14 present summaries of the trip generation for Alternatives A-E including internal capture, mode splits, and pass-by reductions. Please see Appendix W for the detailed trip generation spreadsheet.

Alternative C is anticipated to generate less traffic than the existing Tahoe Biltmore operating at optimum conditions and at full occupancy (Alternative A). As shown in Table 4.8-12, Alternative C will generate approximately 2,150 less daily vehicles and 90 less PM peak hour vehicles as compared to the existing Tahoe Biltmore.

Table 4.8-15 presents a summary of the trip generation volumes for each of the five project alternatives.

Table 4.8-10

Alternative A – Trip Generation

Land Use	Density[1]	Rates[2]				Trips[3]			
		Daily	PM	PM In	PM Out	Daily	PM	PM In	PM Out
Hotel	92 rms	8.92	0.7	49%	51%	821	64	31	33
Casino	22.4 ksf	265.88	16.67	45%	55%	5,956	373	168	205
Meeting Space	4.862 ksf	Accessory Use to Hotel							
Café (High Turnover Sit-Down Restaurant)	4.5 ksf	127.15	11.15	59%	41%	572	50	30	21
Fine Dining (Quality Restaurant)	3.3 ksf	89.95	7.49	67%	33%	297	25	17	8
Bar/Lounge	4.572 ksf	Accessory Use to Hotel							
Service Retail	3.312 ksf	Accessory Use to Hotel							
Total "Raw" Trip Generation						7,645	513	246	267
Alternative Mode Trips						(-710)	(-49)	(-23)	(-25)
Internal Capture Trips						(-977)	(-82)	(-48)	(-34)
Pass-By Trips						(-377)	(-32)	(-20)	(-12)
Total External Roadway Trips Created by Project						**5,581**	**350**	**155**	**196**

Source: Fehr & Peers, 2009

Notes:
[1] rms = rooms, ksf = 1,000 square feet
[2] Daily rates are from the TRPA Trip Table and PM rates are from ITE. ITE Daily rates were used where the TRPA Trip Table did not provide rates. The casino rate was developed based on other studies.
[3] Numbers may differ slightly from the trip generation spreadsheet due to rounding.

Table 4.8-11

Alternative B – Trip Generation

Land Use	Density[1]	Rates[2]				Trips[3]			
		Daily	PM	PM In	PM Out	Daily	PM	PM In	PM Out
Timeshare	92 du	10.1	0.79	40%	60%	929	73	29	44
Single Family Residential	3 du	10.0	1.01	63%	37%	30	3	2	1
Casino	29.744 ksf	265.88	16.67	45%	55%	7,908	496	223	273
Meeting Space	4.862 ksf	Accessory Use to Hotel							
Office	6 emp	3.62	0.5	15%	85%	22	3	0	3
Café (High Turnover Sit-Down Restaurant)	4.5 ksf	127.15	11.15	59%	41%	572	50	30	21
Fine Dining (Quality Restaurant)	3.3 ksf	89.95	7.49	67%	33%	297	25	17	8
Bar/Lounge	4.572 ksf	Accessory Use to Hotel							
Comparison Retail	4.513 ksf	44.32	2.71	44%	56%	200	12	5	7
Total "Raw" Trip Generation						9,958	662	306	356
Alternative Mode Trips						(-795)	(-53)	(-24)	(-28)
Internal Capture Trips						(-1,120)	(-91)	(-51)	(-39)
Pass-By Trips						(-445)	(-37)	(-22)	(-15)
Total External Roadway Trips Created by Project						**7,598**	**481**	**209**	**274**

Source: Fehr & Peers, 2009

Notes:

1 du = dwelling units, ksf = 1,000 square feet, emp = employees

2 Daily rates are from the TRPA Trip Table and PM rates are from ITE. ITE Daily rates were used where the TRPA Trip Table did not provide rates. The casino rate was developed based on other studies.

3 Numbers may differ slightly from the trip generation spreadsheet due to rounding.

Table 4.8-12

Alternative C– Trip Generation

Land Use	Density[1]	Rates[2]				Trips[3]			
		Daily	PM	PM In	PM Out	Daily	PM	PM In	PM Out
Whole Ownership (Condo)	59 du	5.86	0.52	67%	33%	346	31	21	10
Employee Housing (Apartment)	14 du	6.72	0.62	65%	35%	94	9	6	3
Hotel	301 rms	8.92	0.7	49%	51%	2,685	211	103	107
Casino	10 ksf	265.88	16.67	45%	55%	2,659	167	75	92
Meeting Space	21.253 ksf	Accessory Use to Hotel							
Spa	19.089 ksf	Accessory Use to Hotel							
Fitness Center	9.86 ksf	Accessory Use to Hotel							
Daycare Center	1.665 ksf	Accessory Use to Hotel							
Convenience Dining	1.25 ksf	Accessory Use to Hotel							
Café/Fast Food	1.25 ksf	716	26.15	51%	49%	895	33	17	16
Casual Dining (High Turnover Sit-Down Restaurant)	3.398 ksf	127.15	11.15	59%	41%	432	38	22	16
Fine Dining (Quality Restaurant)	4.825 ksf	89.95	7.49	67%	33%	434	36	24	12
Bar/Lounge	2.25 ksf	Accessory Use to Hotel							
Specialty Retail	9.272 ksf	44.32	2.71	44%	56%	411	25	11	14
Service Retail	3.65 ksf	Accessory Use to Hotel							
County Park	3.07 acres	2.28	0.06	41%	59%	7	0	0	0
Total "Raw" Trip Generation						7,963	549	279	270
Alternative Mode Trips						(-959)	(-69)	(-35)	(-34)
Internal Capture Trips						(-2,625)	(-162)	(-88)	(-74)
Pass-By Trips						(-964)	(-57)	(-32)	(-25)
Total External Roadway Trips Created by Project						**3,415**	**262**	**124**	**137**

Source: Fehr & Peers, 2009

Notes:
[1] du = dwelling units, rms = rooms, ksf = 1,000 square feet
[2] Daily rates are from the TRPA Trip Table and PM rates are from ITE. ITE Daily rates were used where the TRPA Trip Table did not provide rates. The casino rate was developed based on other studies.
[3] Numbers may differ slightly from the trip generation spreadsheet due to rounding.

Table 4.8-13

Alternative D – Trip Generation

Land Use	Density[1]	Rates[2]				Trips[3]			
		Daily	PM	PM In	PM Out	Daily	PM	PM In	PM Out
Hotel	200 rms	8.92	0.7	49%	51%	1,784	140	69	71
Timeshare	155 du	10.1	0.79	40%	60%	1,566	122	49	73
Whole Ownership (Condo)	21 du	5.86	0.52	67%	33%	123	11	7	4
Employee Housing (Apartment)	9 du	6.72	0.62	65%	35%	60	6	4	2
Casino	10 ksf	265.88	16.67	45%	55%	2,659	167	75	92
Meeting Space	21.253 ksf	Accessory Use to Hotel							
Spa	19.089 ksf	Accessory Use to Hotel							
Fitness Center	9.86 ksf	Accessory Use to Hotel							
Daycare Center	1.665 ksf	Accessory Use to Hotel							
Convenience Dining	1.25 ksf	Accessory Use to Hotel							
Café/Fast Food	1.25 ksf	716	26.15	51%	49%	895	33	17	16
Casual Dining	4.781 ksf	127.15	11.15	59%	41%	608	53	31	22
Fine Dining (Quality Restaurant)	6.29 ksf	89.95	7.49	67%	33%	566	47	32	16
Bar/Lounge	2.25 ksf	Accessory Use to Hotel							
Specialty Retail	12.979 ksf	44.32	2.71	44%	56%	575	35	16	19
Park (County Park)	2.6 acres	2.28	0.06	41%	59%	6	0	0	0
Total "Raw" Trip Generation						8,842	614	300	315
Alternative Mode Trips						(-921)	(-66)	(-32)	(-34)
Internal Capture Trips						(-2,906)	(-186)	(-84)	(-102)
Pass-By Trips						(-1,153)	(-72)	(-41)	(-31)
Total External Roadway Trips Created by Project						**3,862**	**290**	**143**	**148**

Source: Fehr & Peers, 2009

Notes:

[1] rms = rooms, du = dwelling units, ksf = 1,000 square feet

[2] Daily rates are from the TRPA Trip Table and PM rates are from ITE. ITE Daily rates were used where the TRPA Trip Table did not provide rates. The casino rate was developed based on other studies.

[3] Numbers may differ slightly from the trip generation spreadsheet due to rounding.

Table 4.8-14

Alternative E – Trip Generation

Land Use	Density[1]	Rates[2]				Trips[3]			
		Daily	PM	PM In	PM Out	Daily	PM	PM In	PM Out
Hotel	202 rms	8.92	0.7	49%	51%	1,802	141	69	72
Timeshare	45 du	10.1	0.79	40%	60%	455	36	14	21
Whole Ownership (Condo)	30 du	5.86	0.52	67%	33%	176	16	10	5
Whole Ownership (Single-Family Residential)	3 du	10	1.01	63%	37%	30	3	2	1
Casino	29.744 ksf	265.88	16.67	45%	55%	7,908	496	223	273
Meeting Space	6.627 ksf	Accessory Use to Hotel							
Office	6 emp	3.62	0.5	15%	85%	22	3	0	3
Café (High Turnover Sit-Down Restaurant)	4.5 ksf	127.15	11.15	59%	41%	572	50	30	21
Fine Dining (Quality Restaurant)	3.3 ksf	89.95	7.49	67%	33%	297	25	17	8
Bar/Lounge	4.572 ksf	Accessory Use to Hotel							
Specialty Retail	4.513 ksf	44.32	2.71	44%	56%	200	12	5	7
Total “Raw” Trip Generation						11,461	782	371	411
Alternative Mode Trips						(-1,230)	(-86)	(-41)	(-45)
Internal Capture Trips						(-1,550)	(-125)	(-70)	(-55)
Pass-By Trips						(-485)	(-40)	(-24)	(-16)
Total External Roadway Trips Created by Project						**8,196**	**531**	**236**	**295**

Source: Fehr & Peers, 2009

Notes:
[1] rms = rooms, du = dwelling units, ksf = 1,000 square feet, emp = employees
[2] Daily rates are from the TRPA Trip Table and PM rates are from ITE. ITE Daily rates were used where the TRPA Trip Table did not provide rates. The casino rate was developed based on other studies.
[3] Numbers may differ slightly from the trip generation spreadsheet due to rounding.

Table 4.8-15

Project Alternatives Trip Generation Summary

Trip Generation	Alternative			
	B	C	D	E
"Raw" Daily Project Trip Generation	9,958	7,963	8,842	11,461
Daily Internal Capture and Alternative Mode Trips	(-1,915)	(-3,608)	(-3,827)	(-2,780)
Daily Pass-By Trips	(-445)	(-964)	(-1,153)	(-485)
Existing Tahoe Biltmore (Alternative A) Daily Trips	(-5,581)	(-5,581)	(-5,581)	(-5,581)
Net New External Daily Project Trips	**2,017**	**(-2,190)**	**(-1,719)**	**2,615**
"Raw" PM Peak Project Trip Generation	662	549	614	782
PM Peak Internal Capture and Alternative Mode Trips	(-144)	(-233)	(-252)	(-211)
PM Peak Pass-By Trips	(-37)	(-57)	(-72)	(-40)
Existing Tahoe Biltmore (Alternative A) Daily Trips	(-350)	(-350)	(-350)	(-350)
Net New External PM Peak Project Trips	**131**	**(-91)**	**(-60)**	**181**

. Source: Fehr & Peers, 2009

Trip Distribution

Vehicle trips generated by the Project were distributed to the roadway network based on travel patterns in the study area, locations of complementary land uses, and the locations of the proposed project access points. Existing turning movement count data and trip distribution patterns from previous projects in the area were utilized to determine project distribution patterns. The trip distribution and assignment for the proposed project is described below:

- 52% enter/exit from/to the east on SR 28
    - 20% of “east” traffic enter/exit from/to the south on Lakeshore Boulevard
    - 80% of “east” traffic enter/exit from/to the east on SR 28
        - 35% of “east” traffic enter/exit from/to the north on Mount Rose Highway
        - 65% of “east” traffic enter/exit from/to the east on SR 28
- 48% enter/exit from/to the west on SR 28
    - 40% of “west” traffic enter/exit from/to the north on SR 267
    - 60% of “west” traffic enter/exit from/to the west on SR 28

Vehicle trips entering and exiting the driveway access points of the project area were distributed based on the locations of the land uses and parking facilities on site. Figure 4.8-3 shows the project trip distribution and assignment for Alternative C.

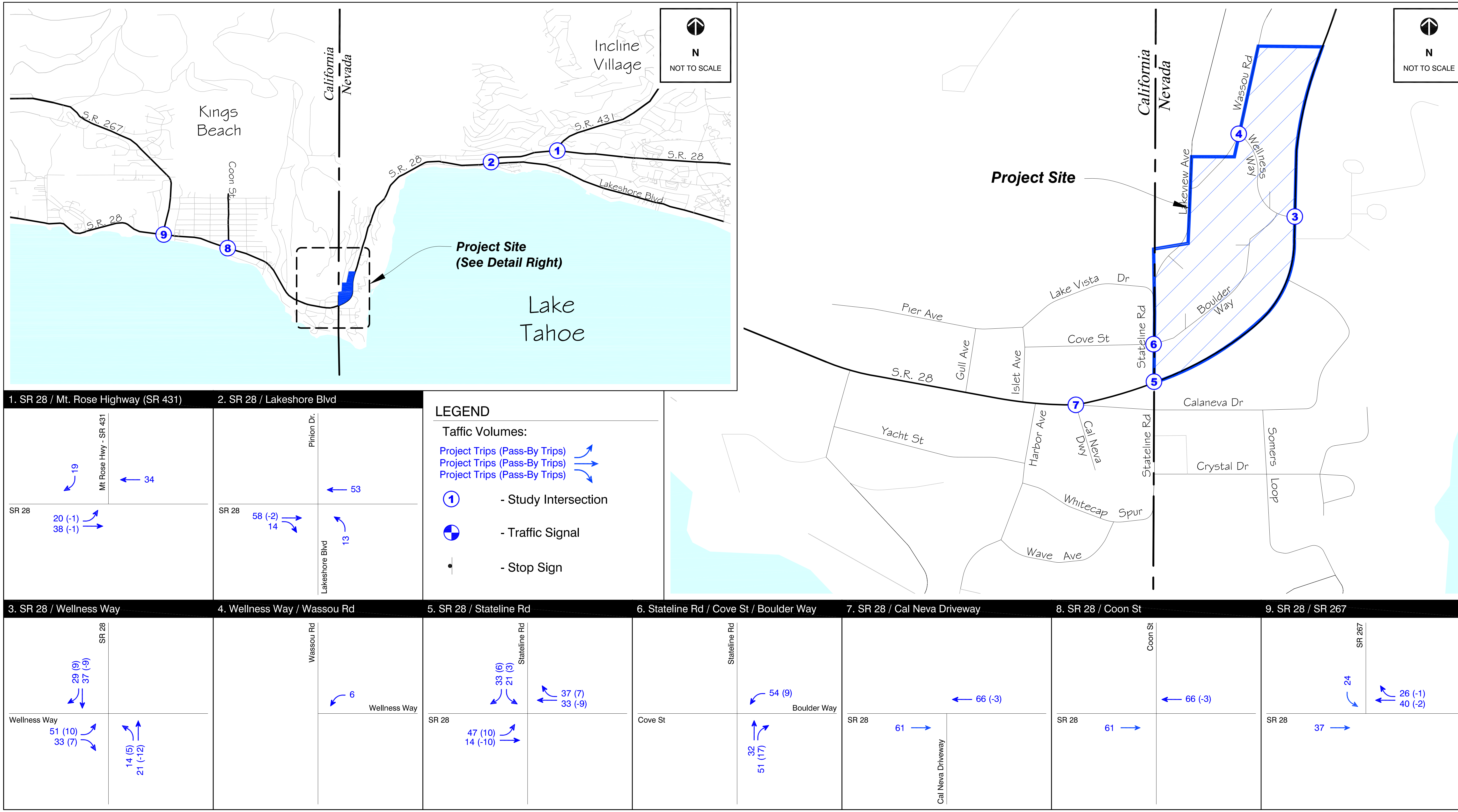
Shared Parking Analysis

The NSCP refers to the Washoe County Development Code to determine the maximum number of parking spaces allowed for a new development. Each project alternative was analyzed using this Code.

Although there is no minimum requirement for the number of parking spaces required, the Urban Land Institute’s (ULI) *Shared Parking, 2nd Edition* was used to analyze the minimum number of recommended parking spaces to be supplied for each project alternative. Supplying a minimum number of parking spaces will ensure that demand is met and proper circulation through the project site transpires.

Shared Parking analysis was performed to determine the amount of parking demand each project alternative is expected to generate. Calculations and rates from Shared Parking were used to determine the demand based on the land uses and sizes included in the development. The Shared Parking calculations take into account many factors including mode split, internalization, time-of-day factors, and seasonal variations. A peak parking demand is calculated based on this information.

Shared Parking, 2nd Edition states, “A parking facility will be perceived as full at somewhat less than its actual capacity, generally in the range of 85-95 percent occupancy. It is appropriate to have a small cushion of spaces over the expected peak-hour accumulation of vehicles. The cushion reduces the need to search the entire system for the last few spaces, thus reducing patron frustration. It further provides for operating fluctuations, misparked vehicles, snow cover, vehicle maneuvers, and vacancies created by reserving spaces for specific users, such as disabled parking. The effective supply cushion in a system also provides for unusual peaks in activities.” (pg. 3) Therefore, it is recommended that Boulder Bay supply 10% more spaces than the minimum Shared Parking calculation.



Fehr & Peers
Transportation Consultants

May 15, 2009 JM
N:\Reno Projects\2008\RN08-0396 (Boulder Bay EIS)\Graphics\396 Fig 3 - Trip Distribution.dwg

Boulder Bay EIS
Project Trip Distribution and Assignment and Pass-By Trips - Alternative C

Figure 4.8-3

Shared Parking Factors

The mode split and internalization factors used for the trip generation analysis were also used in the Shared Parking analysis for each of the project alternatives. The default time-of-day factors for each of the project land uses were maintained. Default seasonal variations were adjusted to reflect summer as the peak season of operation for the proposed project and alternatives.

ENVIRONMENTAL IMPACTS AND RECOMMENDED MITIGATION

IMPACT: **TRANS-1: Will the Project result in generation of 100 or more new Daily Vehicle Trip Ends?**

Analysis: *No Impact; Alternative A*

Alternative A will not include changes to the existing land uses, densities, and roadway network; therefore, there are no impacts associated with this alternative.

It should be noted that the existing Tahoe Biltmore is currently operating at less than its full capacity. As shown above in Table 4.8-10, if the Tahoe Biltmore were at full operational capacity, the facility would generate 5,581 total daily trips.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Alternatives B and E*

As shown in Table 4.8-15 Alternatives B and E will generate more than 100 net new daily vehicle trip ends:

- Alternative B: 2,017 net new daily trips
- Alternative E: 2,615 net new daily trips

Mitigation: **TRANS-1: Traffic and Air Quality Mitigation Program**

Boulder Bay shall pay the appropriate air quality mitigation fee in accordance with Chapter 93 – Traffic and Air Quality Mitigation Program of the TRPA Code of Ordinances.

After Mitigation: *Less than Significant Impact; Alternatives B and E*

Implementation of mitigation measure TRANS-1 will reduce the impact to a less than significant level.

Analysis: *Less than Significant Impact; Alternatives C and D*

As shown in Table 4.8-15 Alternatives C and D will not generate more than 100 net new daily vehicle trip ends:

- Alternative C: minus 2,190 net new daily trips
- Alternative D: minus 1,719 net new daily trips

Mitigation: No mitigation is required.

IMPACT: TRANS-2: Will the Project result in an increase in Vehicle Miles of Travel?

Analysis: *No Impact; Alternative A*

Alternative A will not include changes to the existing land uses, densities, or roadway network; therefore, there are no impacts associated with this alternative.

It should be noted that the existing Tahoe Biltmore is currently operating at less than its full capacity. As shown in Table 4.8-16, if the Tahoe Biltmore were at full operational capacity, the facility would generate 33,140 VMT in the Lake Tahoe Basin.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Alternatives B and E*

VMT calculations were conducted using the daily trip generation results for each project alternative and average trip length numbers from the TRPA travel demand model (provided by TRPA staff). An average trip length of 4.42 miles was used for residential trips and 7.77 miles was used for visitor trips. Reasonable assumptions were made regarding the percentage of casino, restaurant, and retail trips associated with residential trip making versus visitor trip making. The assumptions are considered worst case because they assume a greater number of visitor trips (with greater trip length) than residential where necessary. The following assumptions were made for each project land use, based on the general characteristics of the project:

- Residential – 100% residential, 0% visitor
- Lodging – 0% residential, 100% visitor
- Casino – 50% residential, 50% visitor
- Office - 100% residential, 0% visitor
- Dining - 20% residential, 80% visitor
- Retail - 5% residential, 95% visitor

VMT was calculated for each project land use, accounting for internal capture, alternative modes of travel, and pass-by trips. VMT was also calculated for the existing Tahoe Biltmore land uses assuming full operational capacity, and subtracted from the overall project VMT for each alternative.

Table 4.8-16 shows the VMT results for each project alternative. Detailed VMT calculations can be found in Appendix W.

Alternatives B and E will generate 12,535 and 17,751 new VMT in the Lake Tahoe Basin, respectively. Based on the increase in VMT associated with Alternatives B and E, these alternatives will not help attain the VMT environmental threshold. Therefore, this impact is considered to be significant.

Table 4.8-16

VMT Analysis Comparison

Project Alternative	Daily Trip Generation	Project Alternative VMT	Existing Tahoe Biltmore VMT	Total New Project Alternative VMT
A (currently approved uses)	5,581	33,140	(-33,140)	**0**
B	7,598	45,675	(-33,140)	**12,535**
C	3,415	23,185	(-33,140)	**(-9,955)**
D	3,862	23,335	(-33,140)	**(-9,805)**
E	8,197	50,891	(-33,140)	**17,751**

Source: Fehr & Peers, 2009

Mitigation: **TRANS-1: Traffic and Air Quality Mitigation Program**

Boulder Bay shall pay the appropriate air quality mitigation fee in accordance with Chapter 93 – Traffic and Air Quality Mitigation Program of the TRPA Code of Ordinances.

After Mitigation: *Less than Significant Impact; Alternatives B and E*

Implementation of mitigation measure TRANS-1 will reduce the impact to a less than significant level.

Analysis: *Less than Significant Impact; Alternatives C and D*

Alternatives C and D will generate less VMT than the existing (Alternative A) site. Alternative C will generate 9,955 less VMT than the existing Tahoe Biltmore (assuming full operational capacity). Alternative D will generate 9,805 less VMT.

Mitigation: No mitigation is required.

IMPACT: TRANS-3: Will the Project result in changes to existing parking facilities, or demand for new parking?

Analysis: *No Impact; Alternatives A and B*

Alternative A will not include changes to the existing parking supply or locations.

Alternative B will not include changes to the existing parking supply or locations. A Shared Parking analysis, which accounts for internalization between uses and time of day factors, was performed to determine the minimum number of parking spaces that will be needed to adequately serve the uses included in Alternative B. The results show that a minimum of 227 spaces will be needed.

The 296 existing surface parking spaces will be sufficient for the proposed land use modifications included in Alternative B, and will not exceed the maximum 576 spaces allowed by the Washoe County Development Code. Detailed parking calculation tables are included in Appendix W.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Alternative C*

Alternative C will construct 540 parking spaces (530 in underground structures) to accommodate the site. The maximum number of parking spaces allowed by the NSCP is 783 based on the land uses included in the Project. Table 4.8-17 shows the maximum number of parking spaces allowed based on Washoe County Development Code. A more detailed table is provided in Appendix W.

A Shared Parking analysis was performed to determine the minimum number of parking spaces that will be needed to adequately serve the uses included in Alternative C. The results show that a minimum of 491 spaces will be needed.

TRPA, NSCP and Washoe County Standards encourage a reduction in the visual predominance of parking lots and asphalt, which is accommodated by the underground parking structures that will be constructed for Alternative C.

Alternative C will provide access to its parking structures from Wellness Way, Boulder Way, and Stateline Road.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Alternative D*

Alternative D will include 575 parking spaces (565 in underground structures). The maximum number of parking spaces allowed by the NSCP is 914 based on the land uses included in Alternative D. Table 4.8-18 shows the maximum number of parking spaces allowed based on Washoe County Development Code. A more detailed table is in Appendix W.

A Shared Parking analysis was performed to determine the minimum number of parking spaces that will be needed to adequately serve the uses included in Alternative D. The results show that a minimum of 514 spaces will be needed.

TRPA, NSCP and Washoe County Standards encourage a reduction in the visual predominance of parking lots and asphalt, which is accommodated by the underground parking structures that will be constructed for Alternative D.

Alternative D will provide access to its parking structures from Wellness Way, Boulder Way, and Stateline Road.

Mitigation: No mitigation is required.

Table 4.8-17

Washoe County Parking Standards – Maximum Spaces Allowed (Alternative C)

Land Use	Washoe County Parking Land Use	Density [1]	Maximum Number of Parking Spaces
Whole Ownership	Multi-Family Dwelling		
	1 bedroom	10 DU	16
	2+ bedrooms	49 DU	103
Employee Housing	Multi-Family Dwelling		
	1 bedroom	4 DU	6
	2+ bedrooms	10 DU	21
Hotel	Hotel	301 rooms	301
		75 emp	75
Casino	Casino	10,000 s.f.	80
		20 emp	20
Meeting Space	Hotel Accessory [2]		
Spa	Hotel Accessory [2]		
Fitness Center	Hotel Accessory [2]		
Daycare Center	Hotel Accessory [2]		
Convenience Dining	Hotel Accessory [2]		
Service Retail	Hotel Accessory [2]		
Bar/Lounge	Hotel Accessory [2]		
Café/Fast Food	Eating and Drinking Establishment	1,250 s.f.	13
		3 emp	3
Casual Dining	Eating and Drinking Establishment	3,398 s.f.	34
		5 emp	5
Fine Dining	Eating and Drinking Establishment	4,825 s.f.	48
		21 emp	21
Specialty Retail	Specialty Retail	9,272 s.f.	28
		9 emp	9
		Total:	**783**

Source: Fehr & Peers, 2009

Notes:
[1] DU = dwelling unit, emp = employee, s.f. = square feet
[2] These uses are included as accessory uses to the hotel and are included the hotel rate.

Table 4.8-18

Washoe County Parking Standards – Maximum Spaces Allowed (Alternative D)

Land Use	Washoe County Parking Land Use	Density [1]	Maximum Number of Parking Spaces
Whole Ownership	Multi-Family Dwelling		
	1 bedroom	0 DU	0
	2+ bedrooms	21 DU	44
Employee Housing	Multi-Family Dwelling		
	1 bedroom	0 DU	0
	2+ bedrooms	9 DU	19
Timeshare	Timeshare		
	1 bedroom	62 DU	99
	2+ bedrooms	93 DU	195
Hotel	Hotel	200 rooms	200
		50 emp	50
Casino	Casino	10,000 s.f.	80
		20 emp	20
Meeting Space	Hotel Accessory [2]		
Spa	Hotel Accessory [2]		
Fitness Center	Hotel Accessory [2]		
Daycare Center	Hotel Accessory [2]		
Convenience Dining	Hotel Accessory [2]		
Service Retail	Hotel Accessory [2]		
Bar/Lounge	Hotel Accessory [2]		
Café/Fast Food	Eating and Drinking Establishment	1,250 s.f.	13
		3 emp	3
Casual Dining	Eating and Drinking Establishment	4,781 s.f.	48
		10 emp	10
Fine Dining	Eating and Drinking Establishment	6,290 s.f.	63
		21 emp	21
Specialty Retail	Specialty Retail	12,979 s.f.	39
		10 emp	10
		Total:	**914**

Source: Fehr & Peers, 2009

Notes:
[1] DU = dwelling unit, emp = employee, s.f. = square feet
[2] These uses are included as accessory uses to the hotel and are included the hotel rate.

Analysis: *Less than Significant Impact; Alternative E*

Alternative E will include 456 surface and pedestal parking spaces. The maximum number of parking spaces allowed by the NSCP is 818 based on the land uses included in Alternative E. Table 4.8-19 shows the maximum number of parking spaces allowed based on Washoe County Development Code. A more detailed table is in Appendix W.

Table 4.8-19

Washoe County Parking Standards – Maximum Spaces Allowed (Alternative E)

Land Use	Washoe County Parking Land Use	Density [1]	Maximum Number of Parking Spaces
Whole Ownership	Multi-Family Dwelling		
	1 bedroom	20 DU	32
	2+ bedrooms	13 DU	27
Timeshare	Timeshare		
	1 bedroom	10 DU	16
	2+ bedrooms	35 DU	74
Hotel	Hotel	202 rooms	202
		51 emp	51
Casino	Casino	29,744s.f.	238
		59 emp	59
Meeting Space	Hotel Accessory [2]		
Bar/Lounge	Hotel Accessory [2]		
Café/Fast Food	Eating and Drinking Establishment	4,500 s.f.	45
		10 emp	10
Fine Dining	Eating and Drinking Establishment	3,300 s.f.	33
		10 emp	10
Specialty Retail	Specialty Retail	4,513 s.f.	4
		7 emp	1
Office	Administrative Offices	2,405 s.f.	10
		6 emp	6
		Total:	**818**

Source: Fehr & Peers, 2009

Notes:
[1] DU = dwelling unit, emp = employee, s.f. = square feet
[2] These uses are included as accessory uses to the hotel and are included the hotel rate.

A Shared Parking analysis was performed to determine the minimum number of parking spaces that will be needed to adequately serve the uses included in Alternative E. The results show that a minimum of 382 spaces will be needed.

TRPA, NSCP and Washoe County Standards encourage a reduction in the visual predominance of parking lots and asphalt, which is accommodated by the internal location of the proposed parking lots and structures (located under the buildings).

Alternative E will provide access to its parking structures from Wellness Way, Reservoir Road, Wassou Road, and Stateline Road.

Mitigation: No mitigation is required.

IMPACT: TRANS-4: Will the Project result in a substantial impact upon existing transportation systems, including roadways and intersections?

Level of Service Analysis

Table 4.8-20 presents a summary of the level of service at the study intersections for each project alternative.

Table 4.8-20

Level of Service Results – Existing and Existing Plus Project
Summary of Project Alternatives

Intersection	Control Type[1]	Existing Conditions	Baseline Conditions (Alt. A)	Existing Plus Project Conditions			
				Alt. B	Alt. C	Alt. D	Alt. E
		Delay[2] LOS	Delay[2] LOS	Delay[2] LOS	Delay[2] LOS	Delay[2] LOS	Delay[2] LOS
SR 28/ Mount Rose Highway[3]	SSSC	**>50 (>50) F (F)**	**>50 (>50) F (F)**	**>50 (>50) F (F)**	**>50 (>50) F (F)**	**>50 (>50) F (F)**	**>50 (>50) F (F)**
SR 28/ Lakeshore Boulevard	SSSC	33 **(>50)** D **(F)**	**47 (>50) E (F)**	**>50 (>50) F (F)**	**44 (>50) E (F)**	**47 (>50) E (F)**	**>50 (>50) F (F)**
SR 28/ Reservoir Road	SSSC	15 (28) C (D)	15 **(40)** C **(E)**	18 **(>50)** C **(F)**	--	--	18 **(>50)** C **(F)**
SR28/ Wellness Way	SSSC	--	--	--	2 (13) A (B)	1 (9) A (A)	--
Reservoir Road/ Wassou Road	SSSC	1 (3) A (A)	2 (3) A (A)	11 (19) B (C)	--	--	1 (2) A (A)
Wellness Way/ Wassou Way	SSSC	--	--	--	2 (4) A (A)	1 (5) A (A)	--
SR 28/ Biltmore Driveway	SSSC	1 (9) A (A)	3 (17) A (C)	4 (30) A (D)	--	--	5 (33) A (D)
SR 28/ Boulder Way	SSSC	--	--	--	--	3 (16) A (C)	--
SR 28/ Pedestrian Crossing	Signal	5 A	5 A	5 A	6 A	7 A	5 A

Table 4.8-20

Level of Service Results – Existing and Existing Plus Project
Summary of Project Alternatives

Intersection	Control Type [1]	Existing Conditions	Baseline Conditions (Alt. A)	Existing Plus Project Conditions			
				Alt. B	Alt. C	Alt. D	Alt. E
		Delay[2] LOS	Delay[2] LOS	Delay[2] LOS	Delay[2] LOS	Delay[2] LOS	Delay[2] LOS
SR 28/ Stateline Road	SSSC	2 (21) A (C)	2 (30) A (D)	2 (31) A (D)	3 (22) A (C)	3 (24) A (C)	2 **(38)** A **(E)**
Stateline Road/ Cove Street	SSSC	1 (4) A (A)	1 (4) A (A)	1 (3) A (A)	--	--	1 (3) A (A)
Stateline Road/ Cove Street/ Boulder Way	SSSC	--	--	--	2 (4) A (A)	2 (4) A (A)	--
SR 28/Cal Neva Driveway	SSSC	6 (22) A (C)	6 (25) A (D)	6 (35) A (D)	6 (22) A (C)	6 (27) A (D)	6 (27) A (D)
SR 28/Coon Street	Signal	8 A	8 A	8 A	8 A	8 A	8 A
SR 28/SR 267	Signal	26 C	28 C	30 C	28 C	28 C	30 C

Source: Fehr & Peers, 2009

Notes:
[1] SSSC = Side Street Stop Control
[2] Delay is report in seconds per vehicle for the overall intersection for signalized intersections, and for the overall intersection (worst movement) for unsignalized intersections.
[3] NDOT and the Tahoe Transportation District are considering installing a roundabout at the SR 28/Mount Rose Highway intersection. A roundabout would provide acceptable intersection operations.
-- Not applicable
Bold indicates deficient operations.

Analysis: *No Impact; Alternative A*

Alternative A will not include changes to the existing land uses, densities, or roadway network; therefore, there are no impacts associated with this alternative.

It should be noted that the existing Tahoe Biltmore is currently operating at less than its full capacity. As shown in Table 4.8-10, if the Tahoe Biltmore were at full operational capacity, the facility would generate 5,581 daily trips (3,746 more daily trips than the raw traffic counts), and 350 Friday PM peak hour trips (218 more than the raw traffic counts). A detailed trip generation spreadsheet is in Appendix W.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Alternatives B and E*

Alternative B. Alternative B will modify some of the existing land uses of the Tahoe Biltmore. Alternative B will change the 92 hotel units to timeshare units, increase the casino floor area to 29,744 square feet, increase the comparison retail to 4,513 square feet and add 3 single family dwelling units to the project area. Alternative B will generate 2,017 net new daily trips and 131 net new Friday PM peak hour trips. A detailed trip generation spreadsheet is in Appendix W. Alternative B trip distribution and assignment are shown on Figure 4.8-4.

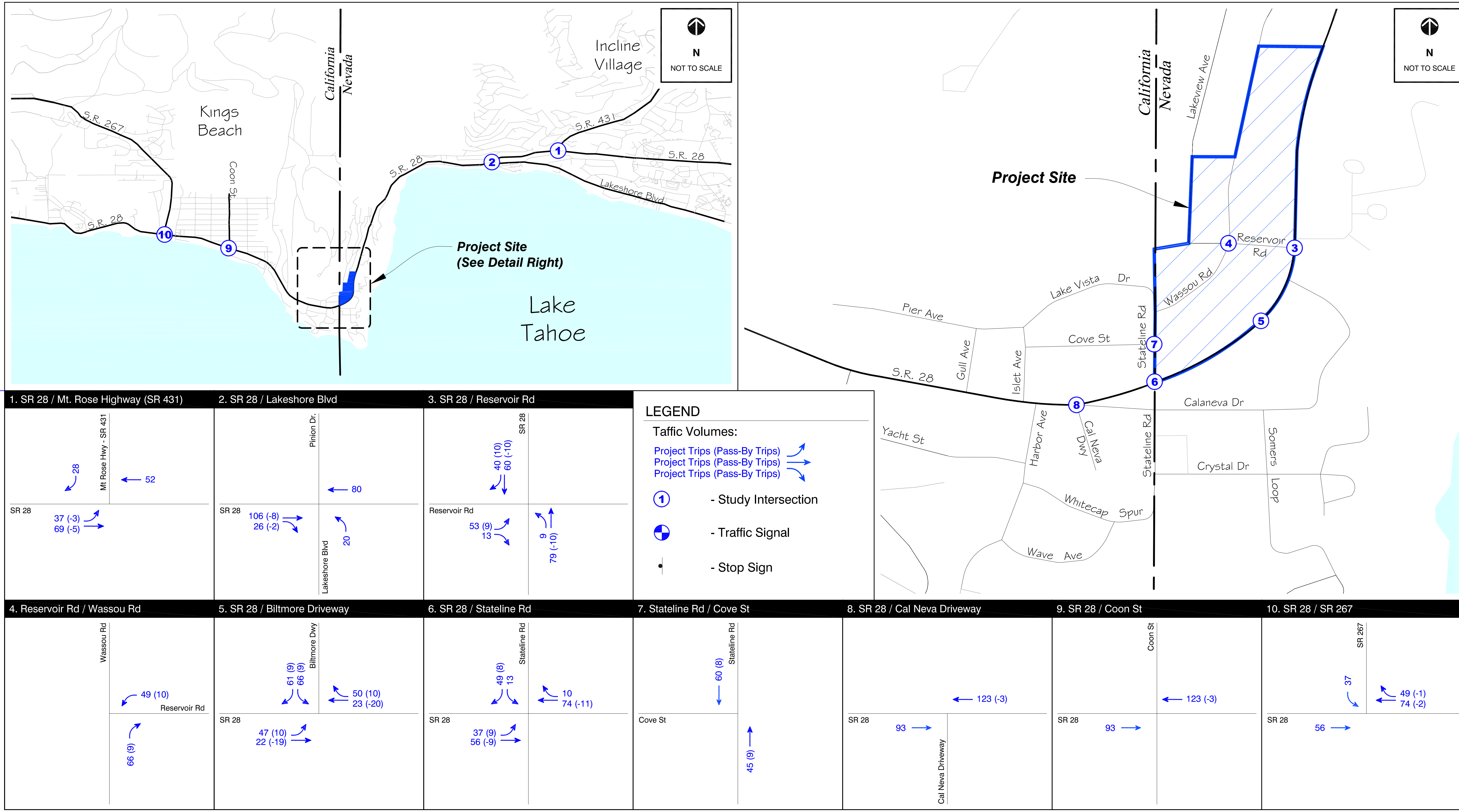
The existing plus project level of service results at the study intersections for Alternative B are shown in Table 4.8-20. Existing plus Alternative B traffic volumes and lane configurations are shown on Figure 4.8-5.

As shown in Table 4.8-20, Alternative B will have a significant impact at the SR 28/Mount Rose Highway, SR 28/Lakeshore Boulevard and SR 28/Reservoir Road intersections. The SR 28/Mount Rose Highway and SR 28/Lakeshore Boulevard intersections operate at unacceptable levels of service under existing conditions, however the delay at these intersections increase with the addition of the project, causing a significant impact. The side-street approaches of the SR 28/Reservoir Road intersection degrade to LOS F with the addition of the project, causing a significant impact.

Alternative E. Alternative E will generate 2,615 net new daily trips and 181 net new Friday PM peak hour trips. A detailed trip generation spreadsheet is in Appendix W. Figure 4.8-6 shows the trip distribution and assignment for Alternative E.

Table 4.8-20 shows the existing plus project level of service results at the study intersections for Alternative E. Figure 4.8-7 shows the existing plus Alternative E traffic volumes and lane configurations.

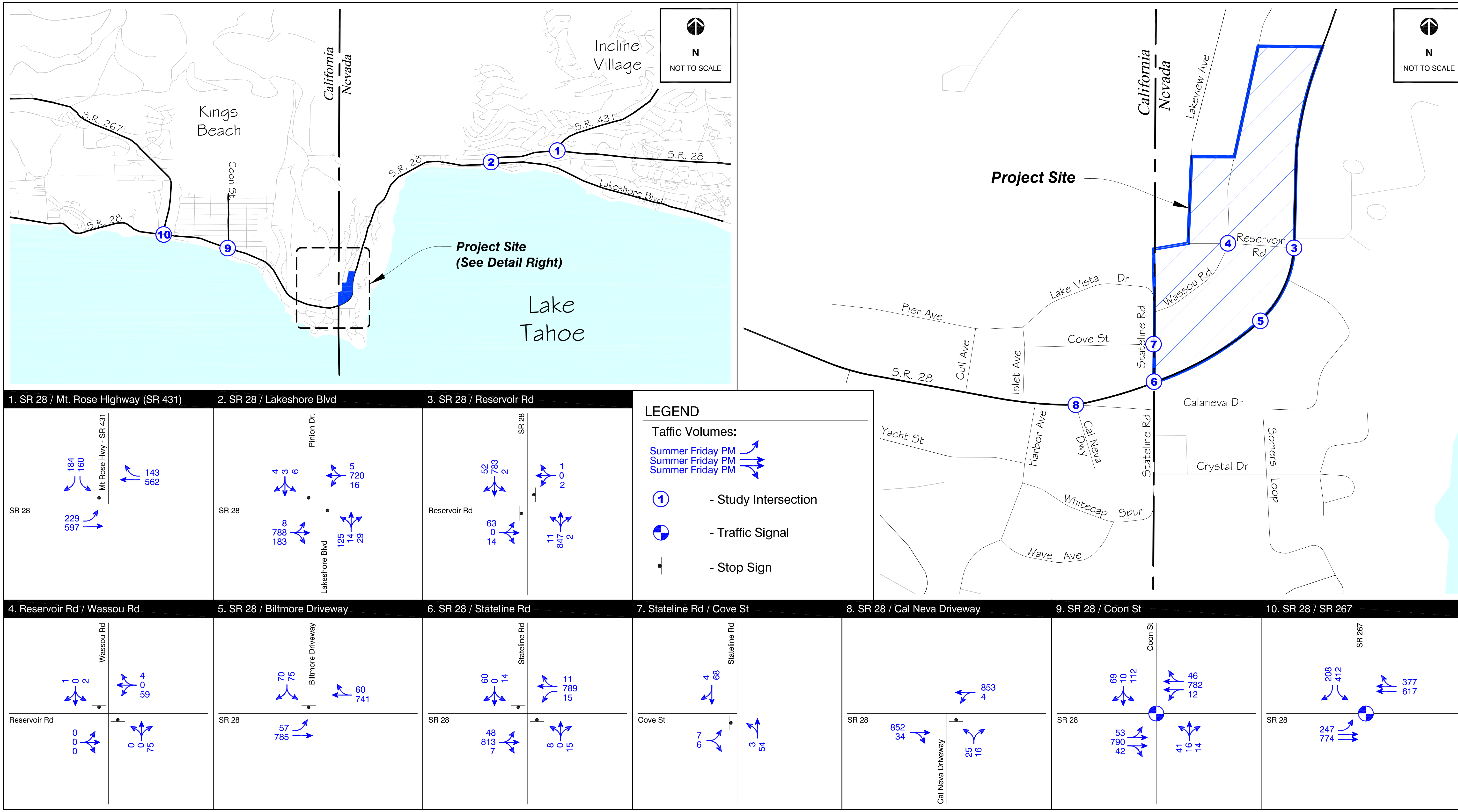
As shown in Table 4.8-20, Alternative E will have a significant impact at the SR 28/Mount Rose Highway, SR 28/Lakeshore Boulevard, SR 28/Reservoir Road and SR 28/Stateline Road intersections. The SR 28/Mount Rose Highway and SR 28/Lakeshore Boulevard intersections operate at unacceptable levels of service under existing conditions, however the delay at these intersections increase with the addition of the project traffic, causing a significant impact. The side-street approaches of the SR 28/Reservoir Road and SR 28/Stateline Road intersections will degrade to unacceptable levels of service with the addition of the project traffic, causing a significant impact.



FEHR & PEERS
TRANSPORTATION CONSULTANTS

Jun 26, 2009 JM
N:\Reno Projects\2008\RN08-0396 (Boulder Bay EIS)\Graphics\396 Fig 2.dwg

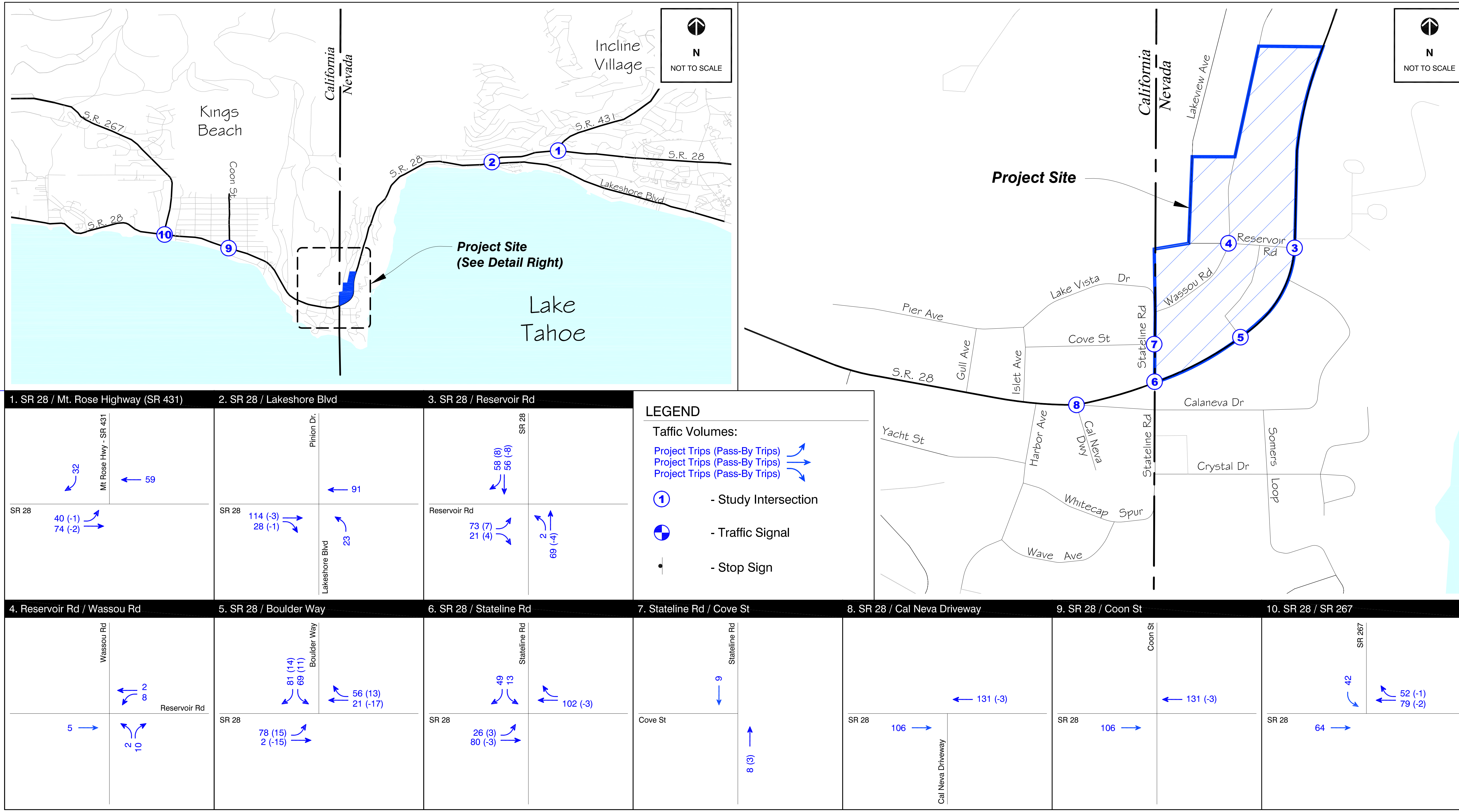
Boulder Bay EIS
Project Trip Distribution and Assignment and Pass-By Trips - Alternative B
Figure 4.8-4



FEHR & PEERS
TRANSPORTATION CONSULTANTS

Jun 26, 2009 JM
N:\Reno Projects\2008\RN08-0396 (Boulder Bay EIS)\Graphics\396 Fig 2.dwg

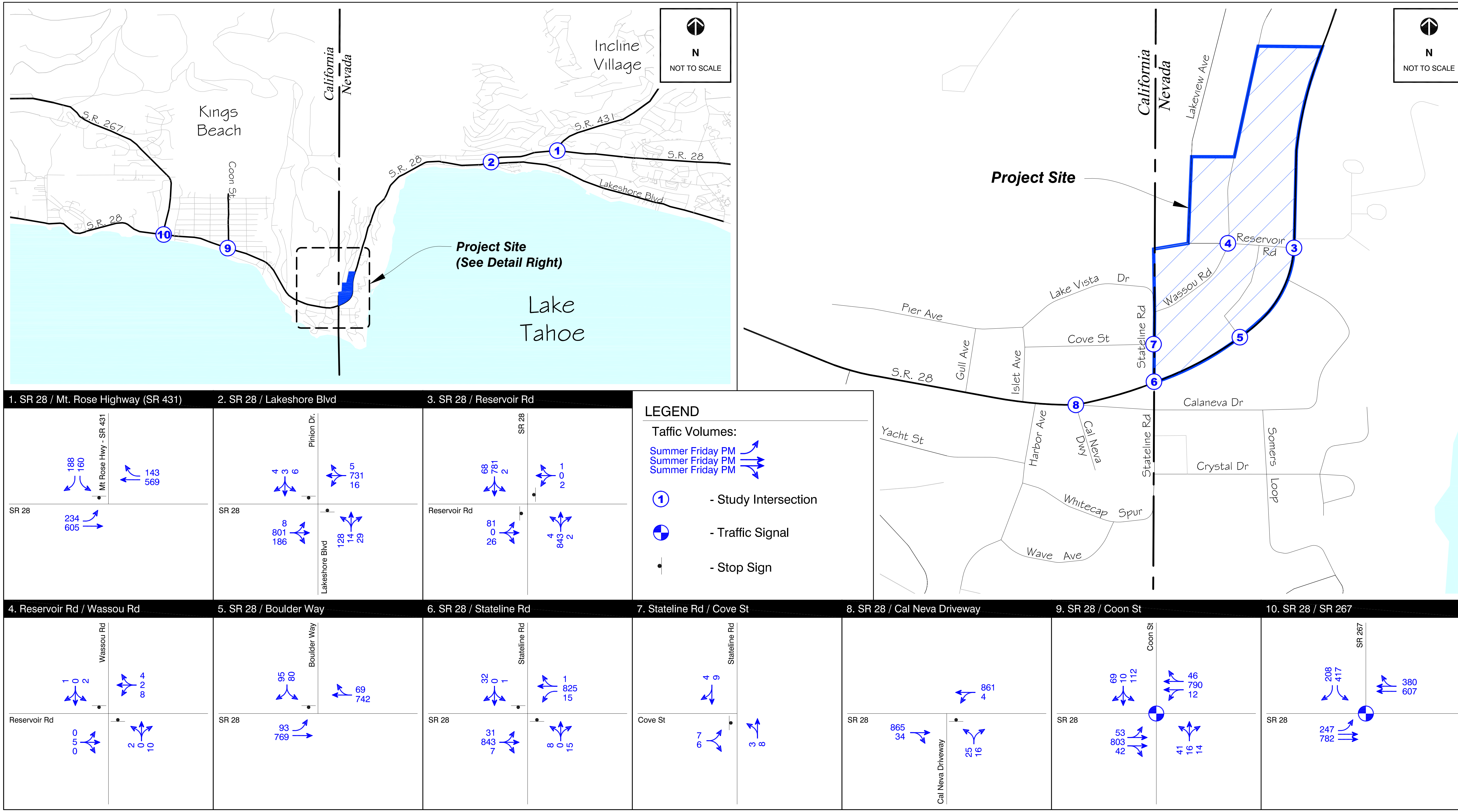
Boulder Bay EIS
Existing Plus Alternative B Lane Configurations, Control Types, and Traffic Volumes
Figure 4.8-5



FEHR & PEERS
TRANSPORTATION CONSULTANTS

Oct 12, 2009 JM
N:\Reno Projects\2008\RN08-0396 (Boulder Bay EIS)\Graphics\396 Fig 13_14_15 – Alt E.dwg

Boulder Bay EIS
Project Trip Distribution and Assignment and Pass-By Trips - Alternative E
Figure 4.8-6



Fehr & Peers
TRANSPORTATION CONSULTANTS

Oct 12, 2009 JM
N:\Reno Projects\2008\RN08-0396 (Boulder Bay EIS)\Graphics\396 Fig 13_14_15 - Alt E.dwg

Boulder Bay EIS
Existing Plus Alternative E Lane Configurations, Control Types, and Traffic Volumes

Figure 4.8-7

Mitigation: **TRANS-4: Implement Intersection Improvements**

Alternative B

SR 28/Mount Rose Highway:

- Add an acceleration lane to SR 28 east of Mount Rose Highway, providing acceleration room for southbound left-turning vehicles.
  Delay: 30 ***(>50),*** *LOS: D* ***(F)***

  Note: This mitigation recommendation does not improve level of service to D or better at the side-street approach, however it does improve intersection operations to better than existing conditions.

SR 28/Lakeshore Boulevard:

- Add an acceleration lane to SR 28 west of Lakeshore Boulevard.
  Delay: 4 ***(44)****, LOS: A* ***(E)***

  Note: This mitigation recommendation does not improve level of service to D or better at the side-street approach, however it does improve intersection operations to better than existing conditions.

SR 28/Reservoir Road:

- Extend the two-way left-turn lane on SR 28, adjacent to the project area, to beyond Reservoir Road to the north.
  Delay: 2 (19), LOS: A (C)

Alternative E

SR 28/Mount Rose Highway:

- Add an acceleration lane to SR 28 east of Mount Rose Highway, providing acceleration room for southbound left-turning vehicles.
  Delay: 32 ***(>50),*** *LOS: C* ***(F)***

  Note: This mitigation recommendation does not improve level of service to D or better at the side-street approach, however it does improve intersection operations to better than existing conditions.

SR 28/Lakeshore Boulevard:

- Add an acceleration lane to SR 28 west of Lakeshore Boulevard.
  Delay: 5 ***(47)****, LOS: A* ***(E)***

  Note: This mitigation recommendation does not improve level of service to D or better at the side-street approach, however it does improve intersection operations to better than existing conditions.

SR 28/Reservoir Road:

- Extend the two-way left-turn lane on SR 28, adjacent to the project area, to beyond Reservoir Road to the north.
  Delay: 3 (16), LOS: A (C)

SR 28/Stateline Road:

- Extend the two-way left-turn lane on SR 28, adjacent to the project area, to beyond Stateline Road to the west, to allow sufficient use for vehicles accessing Stateline Road.
  Delay: 2 (24), LOS: A (C)

After Mitigation: *Less than Significant Impact; Alternatives B and E*

Implementation of the mitigation measures listed in TRANS-4 will improve the level of service at the impacted intersection to better than existing conditions. Therefore, with mitigation, the impact will be less than significant at the study intersections.

Analysis: *Less than Significant Impact; Alternatives C and D*

Alternative C. Alternative C will generate 2,190 fewer daily trips and 91 fewer Friday PM peak hour trips than the existing site (at full capacity/optimum operating conditions). A detailed trip generation spreadsheet is in Appendix W.

Table 4.8-20 shows the existing plus project level of service results at the study intersections for Alternative C. Existing plus Alternative C traffic volumes and lane configurations are shown on Figure 4.8-8.

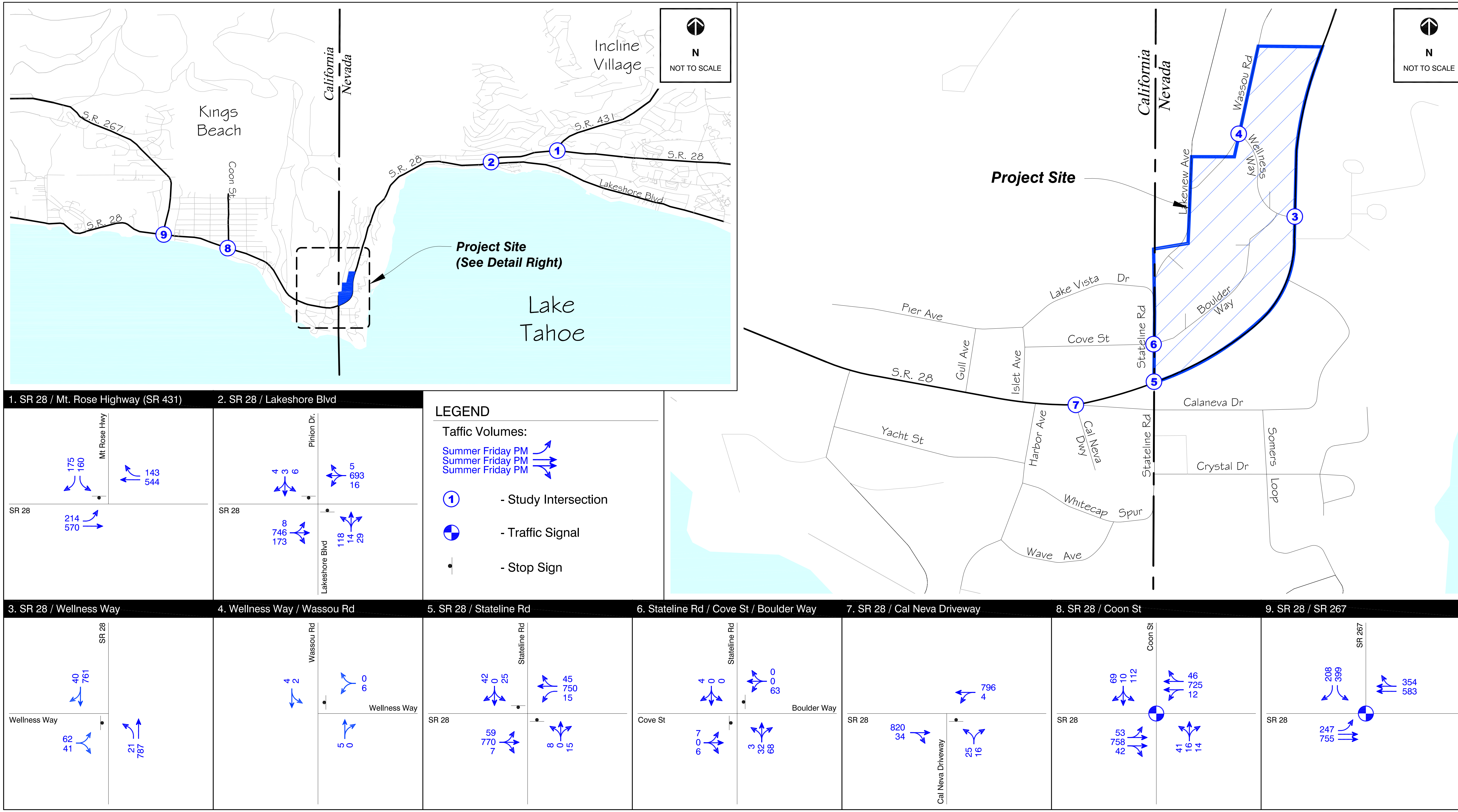
As shown in Table 4.8-20, Alternative C does not have a significant impact at any of the study intersections. Although the SR 28/Mount Rose Highway and SR 28/Lakeshore Boulevard intersections operate at unacceptable levels of service, the delay at the intersections is less than the baseline conditions delay.

Alternative D. Alternative D will generate 1,719 fewer daily trips and 60 fewer Friday PM peak hour trips than the existing site (at full capacity/optimum operating conditions). Figure 4.8-9 shows the trip distribution and assignment for Alternative D. A detailed trip generation spreadsheet is in Appendix W.

Table 4.8-20 shows the existing plus project level of service results at the study intersections for Alternative D. Existing plus Alternative D traffic volumes and lane configurations are shown on Figure 4.8-10.

As shown in Table 4.8-20, Alternative D does not have a significant impact at any of the study intersections. Although the SR 28/Mount Rose Highway and SR 28/Lakeshore Boulevard intersections operate at unacceptable levels of service, the delay at the intersections is less than the baseline conditions delay.

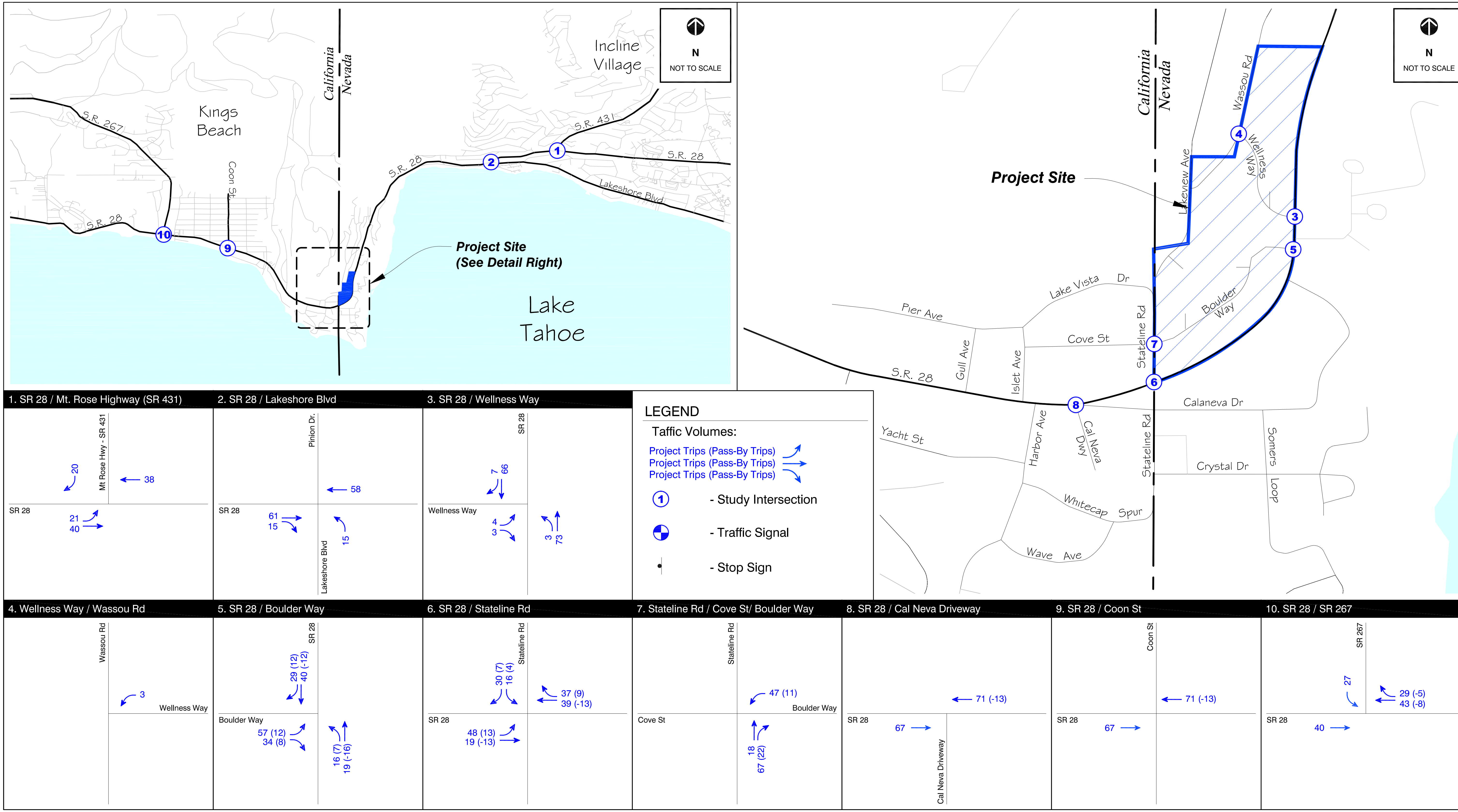
Mitigation: No mitigation is required.



Fehr & Peers
TRANSPORTATION CONSULTANTS

Oct 12, 2009 JM
N:\Reno Projects\2008\RN08-0396 (Boulder Bay EIS)\Graphics\396 Fig 8 – e + p.dwg

Boulder Bay EIS
Existing Plus Alternative C Lane Configurations, Control Types, and Traffic Volumes
Figure 4.8-8

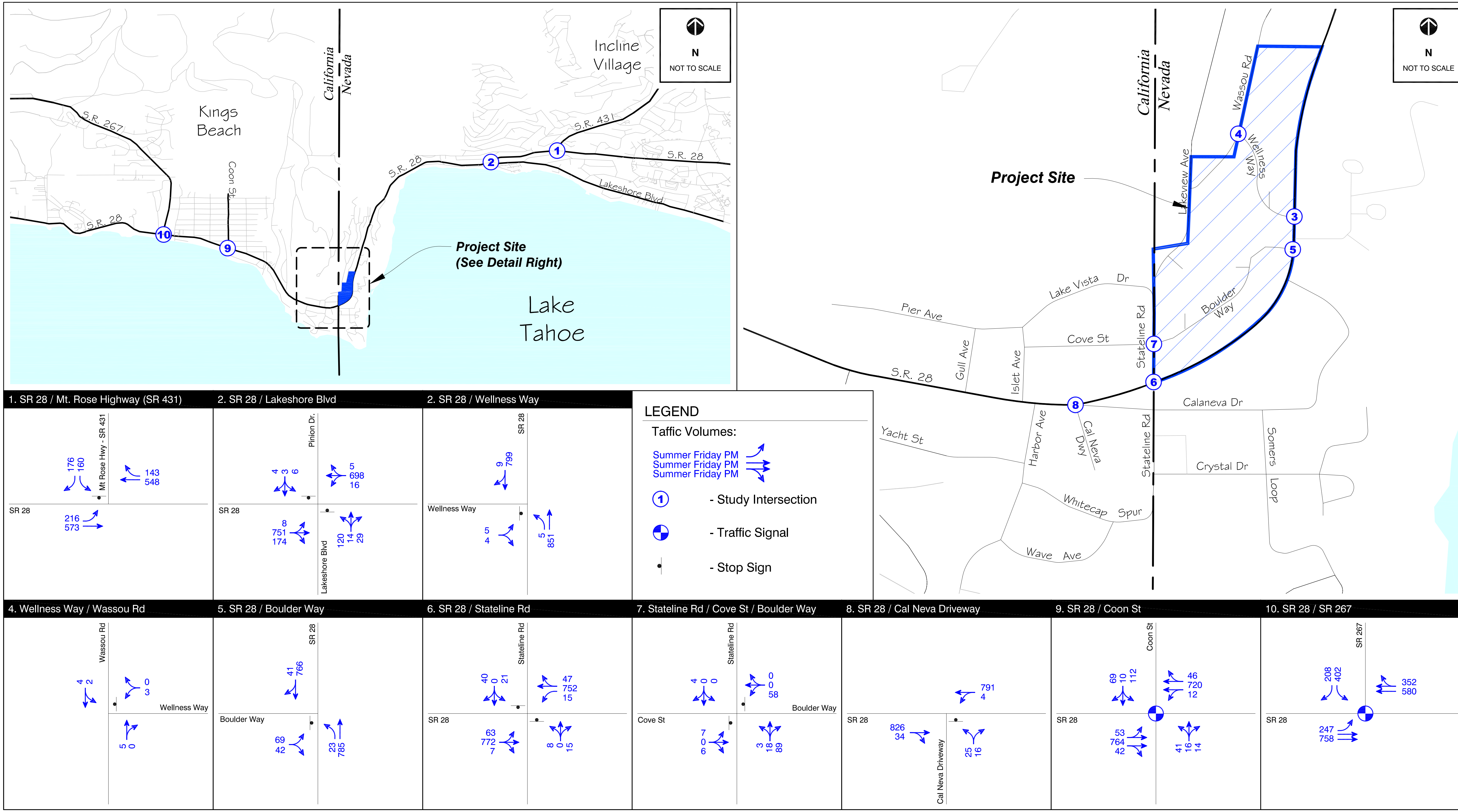


FEHR & PEERS
TRANSPORTATION CONSULTANTS

Oct 12, 2009 JM
N:\Reno Projects\2008\RN08-0396 (Boulder Bay EIS)\Graphics\396 Fig 10_11_12 - Alt D.dwg

Boulder Bay EIS
Project Trip Distribution and Assignment and Pass-By Trips - Alternative D

Figure 4.8-9



FEHR & PEERS
TRANSPORTATION CONSULTANTS

Oct 12, 2009 JM
N:\Reno Projects\2008\RN08-0396 (Boulder Bay EIS)\Graphics\396 Fig 10_11_12 - Alt D.dwg

Boulder Bay EIS
Existing Plus Alternative D Lane Configurations, Control Types, and Traffic Volumes

Figure 4.8-10

Intersection Queuing at SR 28/SR 267

Analysis: *No Impact; Alternative A*

Alternative A will not include changes to the existing land uses, densities, or roadway network; therefore, there are no impacts associated with this alternative.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Alternatives B, C, D and E*

Queuing analysis at the SR 28/SR 267 intersection shows that queues at the southbound right-turn and eastbound left-turn approaches exceed the existing storage provided for these movements under existing plus project conditions. Project generated traffic for alternatives B, C, D and E will not add volume to these movements; therefore the Project does not cause a significant impact.

Mitigation: No mitigation is required.

IMPACT: TRANS-5: Will the Project result in a substantial impact upon existing transportation systems, including transit facilities?

Analysis: *No Impact; Alternatives A, B and E*

Alternatives A, B and E will not include changes to the existing transit facilities on or near the project area, and are not requesting for additional tourist accommodation units from the TRPA special project bonus pool.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Alternatives C and D*

Alternatives C and D will implement an Alternative Transportation Plan (Appendix F) prepared by LSC Transportation Consultants (December 5, 2008). The plan is based upon a review of existing public and private transit services around the lake and an assessment of potential demand for transit services generated by the Project. The transportation strategy will include both stand-alone new services as well as public partnerships to expand existing transit services and plans for additional strategies to encourage increased use of transit and non-motorized travel modes.

Alternatives C and D propose transit shelters at the center of the project area for the existing TART service and a visitor shuttle service, along with an employee shuttle service at each end of Boulder Way. The shelters are denoted on Figure 2-4 of Chapter 2, Description of Proposed Project and Alternatives, with a “T”. A bus and shuttle turnout is also proposed on the north side of State Route 28 across from the existing Crystal Bay Club.

The following measures are presented as transit strategies to reduce trips to and from the project area:

1. Provide financial subsidy to increase North Lake Tahoe Express Service between Reno-Tahoe International Airport and Incline Village/Crystal Bay from 7 runs per day to 11 runs per day during peak travel seasons (summer and winter);

2. Reduce existing Crystal Bay to Tahoe Vista Trolley headways from 30 to 15 minutes during summer daytime hours by operating an additional Trolley at no cost to users;
3. Operate Year-Round Tahoe Connection Service using three alternative-fueled vans (12-15 passenger) to provide free transit service throughout the Tahoe/Truckee region to Boulder Bay guests and residents;
4. Encourage alternative transportation strategies for Boulder Bay employees by offering subsidized employee transit passes, preferred carpool parking, carpool matching service, showers/lockers, and bicycle amenities;
5. Provide two bays for Transit buses and shuttles along SR 28 and an Alternative Transportation Center for transit, bicycle and pedestrian travelers to be protected from the elements (including a bicycle station with an air compressor and secured parking);
6. Onsite alternative-fuel car share service (up to four vehicles) for Boulder Bay guests and residents; and
7. Onsite bicycle-share service for Boulder Bay guests and residents, including some bicycles with "electric assist".

The improvements proposed for transportation in Alternatives C and D are a beneficial impact.

Mitigation: No mitigation is required.

IMPACT: TRANS-6: Will the Project result in a substantial impact upon existing transportation systems, including bicycle or pedestrian facilities?

Analysis: *No Impact; Alternatives A, B and E*

Alternatives A, B and E will not include changes to the existing bicycle and pedestrian facilities on the project area.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Alternatives C and D*

Alternatives C and D will include a 2 acre, fully landscaped pedestrian village through the center of the project area that includes walkways, street furniture, lighting, and information kiosks/directories. The alternatives also include multi-use paths that will connect to the existing public pedestrian and bicycle trails at the project area boundaries. Clearly marked pedestrian facilities will be provided to/from parking areas. Figure 2-5 of Chapter 2 shows the proposed pedestrian and bicycle system for Alternatives C and D.

In addition, the Project will include a comprehensive bicycle program. Bicycle lanes will be constructed through the NSCP Area on SR 28 and will connect with the new Kings Beach Class 2 bicycle lanes. Specifically, the plan will include:

- Approximately 2,000 linear feet of Class 2 bike lanes along State Route 28 per AASHTO guidelines; and
- Five foot wide lanes where curb/gutter are present, four foot wide lanes along roadways without curb/gutter.

Bicycle amenities will also be provided on-site and will include bicycle parking provided at 10% of vehicle parking, U-shaped bicycle racks, bicycle service area (with free compressed air, basic tools, and hydration), and bicycle rental.

Alternatives C and D will result in a beneficial impact to pedestrian and bicycle circulation.

Mitigation: No mitigation is required.

IMPACT: TRANS-7: Will the Project result in a temporary impact upon existing transportation systems due to construction traffic?

Analysis: *No Impact; Alternatives A and B*

Alternatives A and B will not include major changes to the existing Tahoe Biltmore site, and therefore will not generate significant construction traffic.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Alternatives C, D, and E*

Construction traffic will temporarily be present on the roadway network and study intersections. Construction traffic will access the project area via SR 28. The heaviest construction period will occur during site grading. The grading plan indicates that substantial excavation will be required, resulting in the construction trips removing material from the site. The material will be taken out of the Tahoe Basin via SR 267 or Mount Rose Highway. Table 4.8-21 provides the estimated number of trips associated with site grading.

Table 4.8-21

Site Grading Truck Trips per Alternative

Alternative	Net Cut Material [1]	Truck Loads [2]	Trips per Day [3]
C	121,000 cubic yards	6,050 loads	96 - 192
D	133,000 cubic yards	6,650 loads	96 - 192
E	109,000 cubic yards	5,450 loads	96 - 192

Source: Fehr & Peers, 2009

Notes:
1 Approximate amount of net cut material to be hauled off-site.
2 Long haul trucks would be capable of carrying 20 cubic yards of material. Typically, trucks can be loaded every five to ten minutes, resulting in 48 to 96 loads per day.
3 These are two-way trips (includes loaded delivery trip and empty return trip).

Trucks removing excavation material (i.e. arriving at the site empty and leaving with material) will generate approximately 200 trips per day. The Project will generate fewer excavation related trips than fully occupied project trips. However, the character of the vehicles will be different. Heavy vehicles and trucks will dominate construction traffic.

Staging areas will be provided on-site and out of the public right-of-way to minimize heavy equipment trips on surrounding roadways.

All grading activity will be limited to the TRPA grading season and will be prohibited between October 15th and May 1st.

The project applicant will prepare a Traffic Control Plan (TCP) for review and approval by TRPA, Washoe County Department of Public Works, and NDOT prior to construction. The TCP will address project construction traffic and parking. At a minimum, the plan will address truck haul routes, truck turning movements at the project driveway(s), traffic control signage, bicycle and pedestrian traffic, restriction of hauling activities to off-peak periods, on-site circulation and staging areas, and monitoring of the in-place traffic control to implement traffic control revisions, if necessary. Necessary encroachment and transportation permits will be obtained by the project applicant and/or a representative of the applicant prior to construction.

Mitigation: No mitigation is required.

IMPACT: TRANS-8: Will the Project result in alterations to the present patterns of circulation or movement of people and/or goods?

Analysis: *No Impact; Alternatives A and B*

Alternatives A and B will not include changes to the existing access and circulation elements of the project area.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Alternatives C and D*

Alternatives C and D will change the existing roadway network surrounding the Tahoe Biltmore. These changes will include the construction of two new roadways (Boulder Way and Wellness Way), realignment of two existing roadways (Wassou Road and Lakeview Drive), and abandonment of one roadway (Reservoir Road).

Lakeview Drive, which currently terminates at Reservoir Road to the south, will be reconstructed to align with Stateline Road and border the west side of the project area. Wassou Road will be realigned to intersect Lakeview Drive to the west. Wellness Way will provide the project area access to SR 28, intersecting SR 28 to the east and Wassou Road to the west. Boulder Way will be internal to the project area. For Alternative C, Boulder Way will intersect Stateline Road at the west end and Wellness Way at the east end. For Alternative D, Boulder Way will intersection Stateline Road at the west end and SR 28 at the east end, south of the SR 28/Wellness Way intersection (Figures 2-4 and 2-9 in Chapter 2 show the roadway network for Alternatives C and D.)

The Reservoir Road abandonment is not expected to cause a significant impact to the vehicles that currently use it, as the majority of the traffic that uses Reservoir Road is associated with the Tahoe Biltmore. Vehicles that may come from Lakeview Drive or Wassou Road to the north will still have access to SR 28 via Wellness Way.

Wassou Road will be clearly defined and delineated as a roadway, which is a beneficial impact.

Parking access to the proposed project area will be provided via Boulder Way, Wellness Way, and Stateline Road.

Alternative D will extend the existing two-way left-turn lane on SR 28 north to accommodate vehicles accessing Wellness Way and Boulder Way

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Alternative E*

Alternative E will maintain the existing roadway network, with the addition of a new roadway intersecting Reservoir Road west of SR 28 and east of Wassou Road. This roadway will provide access to 3 single-family residential units and will not impact existing facilities. (Figure 2-11 of Chapter 2 shows the roadway network and access driveways for Alternative E.)

Wassou Road will be clearly defined and delineated as a roadway, which is a beneficial impact.

Parking access to the project area will be provided via Reservoir Road, Boulder Way (existing Biltmore Driveway) and Wassou Road.

Mitigation: No mitigation is required.

IMPACT: TRANS-9: Will the Project result in an increase in traffic hazards to motor vehicles, bicyclists, or pedestrians?

Analysis: *No Impact; Alternatives A and B*

Alternatives A and B will not include changes to the existing roadway network, or bicycle and pedestrian facilities.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Alternatives C, and D*

Alternatives C and D will provide enhanced roadway connectivity through the project area by defining and delineating Wassou Road and providing new roadways that meet Washoe County roadway standards.

Alternatives C and D will provide pedestrian access through a system of on-site pedestrian pathways. Sidewalk will be provided adjacent to the project area on SR 28 for the movement of pedestrians, and the protected pedestrian crossing on SR 28 in Crystal Bay will remain. The Project will enhance pedestrian safety on-site by providing pedestrian facilities.

Improved Bicycle circulation and enhancements to safety will also occur with Alternatives C and D. Class 2 bicycle lanes will be constructed on SR 28 adjacent to the project area with appropriate width and signing and striping.

Alternatives C and D enhance safety and result in a beneficial impact.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Alternatives E*

Alternative E will utilize existing roadways. Wassou Road will be delineated and defined and Reservoir Road will be retrofitted to conform to Washoe County roadway standards.

Existing bicycle and pedestrian facilities will remain. The Project will not create any hazards that will impact the existing pedestrian or bicycle facilities.

Mitigation: No mitigation is required.

CUMULATIVE CONDITIONS ANALYSIS METHODOLOGY

2030 Background Conditions

Volume Growth

2030 background volumes were calculated using two resources, an annual growth rate developed from the TRPA travel demand model and trips generated by all planned/approved projects in the area. An annual growth rate of 0.94% per year was provided by the TRPA travel demand model for the north Lake Tahoe region. The 0.94% growth rate accounts for all planned/approved projects in the area, and was therefore reduced to reflect that the trips generated by nearby planned/approved projects were manually added to the existing volumes. A table of the planned/approved projects included in the analysis is provided in Chapter 5. The 2030 background volumes were generated using the following steps:

1. The 0.94% per year growth rate was applied to existing traffic volumes (for comparison use).

2. Trips were generated for the planned/approved projects using the trip generation methodology discussed previously, and distributed to the roadway network using the following overall distribution:

    - 52% enter/exit from/to the east on SR 28
    - 29% enter/exit from/to the west on SR 28
    - 19% enter/exit from/to the north on SR 267

3. The background traffic volumes generated using the 0.94% per year growth rate were compared to the trips generated by the planned/approved projects from step 2. The 0.94% per year growth rate was reduced to account for the trips generated by the planned/approved projects separately. Based on this comparison, 0.82% per year growth is attributed to the planned/approved projects and 0.12% per year growth is due to regional traffic increase. The growth rate of 0.12% per year was applied to the through movement volumes on the main line roads (SR 28, SR 267, Mount Rose Highway, Lakeshore Boulevard) to account for growth from areas outside of north Lake Tahoe.

4. The trips generated in step 2 were added to the trips generated using the growth rate in step 3 to obtain overall 2030 background traffic volumes for cumulative conditions analysis.

The raw 2030 cumulative conditions volumes are shown on Figure 4.8-11.

The existing Tahoe Biltmore trips assuming optimum operating conditions and full capacity were included in the 2030 background volumes to represent cumulative baseline conditions. 2030 cumulative baseline volumes (cumulative plus Alternative A) are shown on Figure 4.8-11A.

Planned Roadway Improvements

Tahoe Regional Planning Agency and Placer County plan to improve SR 28 from SR 267 to Chipmunk Street by converting the four-lane roadway (two lanes in each direction) to a three-lane roadway (one lane in each direction with a two-way left-turn lane). This improvement was included in the cumulative conditions analysis.

The Nevada Department of Transportation and the Tahoe Transportation District are considering installing a roundabout at the SR 28/Mount Rose Highway intersection, however the improvement is not included in TRPA's Mobility 2030. This improvement was included as an improvement option.

Level of Service Analysis

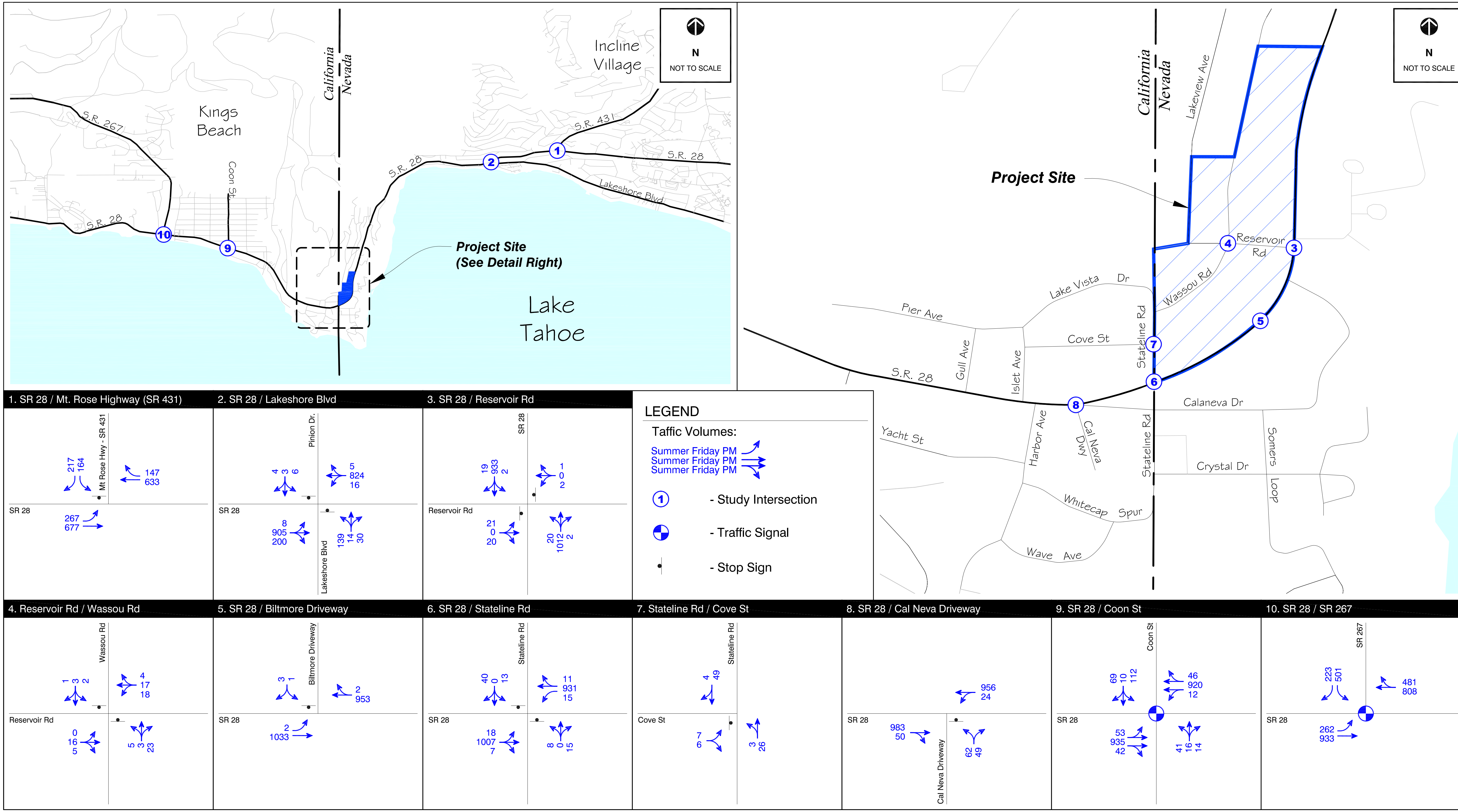
Level of service analysis was performed at the study intersections using Synchro 7 and SimTraffic microsimulation softwares, which implement the methods of the *Highway Capacity Manual (HCM) 2000*. Synchro was used to analyze four of the study intersections – SR 28/Mount Rose Highway, SR 28/Lakeshore Boulevard, SR 28/Coon Street, and SR 28/SR 267. The remaining intersections were analyzed using SimTraffic because of their close proximity to each other. SimTraffic is better at analyzing the interaction between intersections, and is therefore better for closely spaced intersections. The Synchro and Sim Traffic output sheets for the cumulative and cumulative plus project alternatives conditions analysis are presented in Appendix W for further reference. The level of service results are presented in Table 4.8-22.

As shown in Table 4.8-22, the SR 28/Mount Rose Highway, SR 28/Lakeshore Boulevard, SR 28/Reservoir Road, SR 28/Biltmore Driveway, SR 28/Stateline Road, SR 28/Cal Neva Drive, and SR 28/SR 267 intersections are anticipated to operate at unacceptable levels of service during the summer, Friday PM peak period under cumulative conditions.

A roundabout was also analyzed at the SR 28/Mount Rose Highway intersection. Under cumulative conditions a single-lane roundabout with right-turn pockets at the westbound and southbound approaches is expected to operate at LOS B with an overall intersection delay of 15 seconds; however, the eastbound approach will have a volume to capacity (v/c) ratio of 0.923. Adding a bypass lane for the eastbound through movement would improve operations to LOS B, with 12 seconds of delay and an overall intersection v/c ratio of 0.729.

Intersection Queuing at SR 28/SR 267

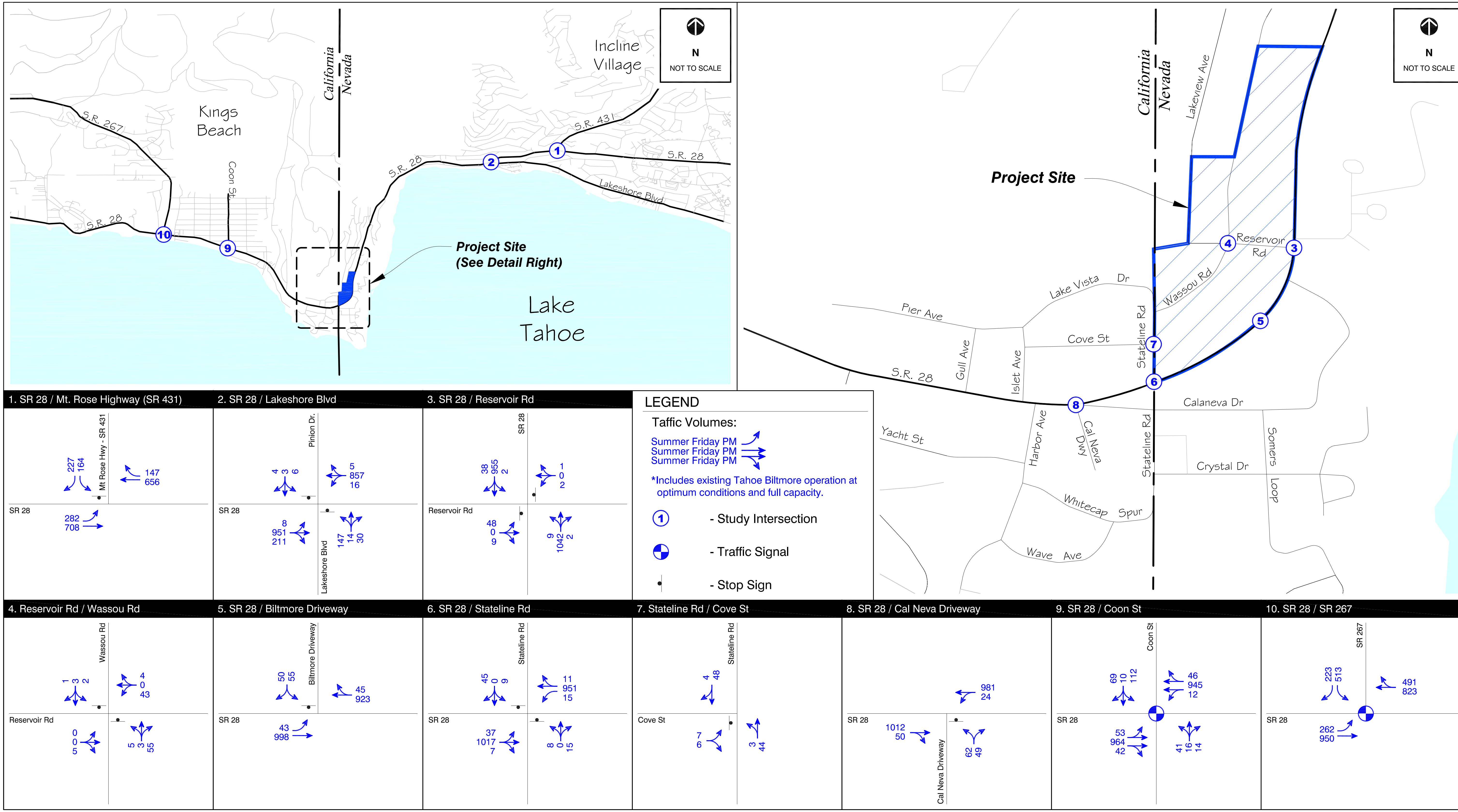
Queuing was analyzed at the SR 28/SR 267 intersection for the baseline cumulative and cumulative plus project conditions using SimTraffic microsimulation software. All of the approaches will experience substantial queuing (SB – 3200', EB – 3575', WB – 2845') under baseline cumulative conditions (assuming the Tahoe Biltmore is operating at optimum capacity) without the addition of Boulder Bay project generated traffic. Queuing analysis results are shown in Appendix W.



FEHR & PEERS
TRANSPORTATION CONSULTANTS

Jun 26, 2009 JM
N:\Reno Projects\2008\RN08-0396 (Boulder Bay EIS)\Graphics\396 Fig 5 - cumulative conditions.dwg

Boulder Bay EIS
Cumulative Conditions Lane Configurations, Control Types, and Traffic Volumes
Figure 4.8-11



Boulder Bay EIS

Baseline Cumulative Conditions Lane Configurations, Control Types, and Traffic Volumes

Figure 4.8-11A

FEHR & PEERS
TRANSPORTATION CONSULTANTS

Sep 03, 2009 JM
N:\Reno Projects\2008\RN08-0396 (Boulder Bay EIS)\Graphics\396 Fig 5 - cumulative conditions - alt A.dwg

CUMULATIVE IMPACTS AND MITIGATION MEASURES

IMPACT: TRANS-C1: Will the project result in a substantial impact upon cumulative transportation systems, including roadways and intersections?

Level of Service Analysis

Table 4.8-22 presents a summary of the level of service at the study intersections for each project alternative.

Table 4.8-22

Level of Service Results – 2030 Cumulative Conditions (Baseline Conditions Assume Optimum Operating Conditions and Full Occupancy of Existing Tahoe Biltmore)

Intersection	Control Type [1]	Cumulative Conditions	Baseline Cumulative Conditions (Alt. A)	Cumulative Plus Project Conditions			
				Alt. B	Alt. C	Alt. D	Alt. E
		Delay [2] LOS	Delay [2] LOS	Delay [2] LOS	Delay [2] LOS	Delay [2] LOS	Delay [2] LOS
SR 28/ Mount Rose Highway	SSSC	**>50 (>50) F (F)**	**>50 (>50) F (F)**	**>50 (>50) F (F)**	**>50 (>50) F (F)**	**>50 (>50) F (F)**	**>50 (>50) F (F)**
	Roundabout w/ EB bypass lane	12 B	13 B	14 B	13 B	13 B	14 B
SR 28/ Lakeshore Boulevard	SSSC	**>50 (>50) F (F)**	**>50 (>50) F (F)**	**>50 (>50) F (F)**	**>50 (>50) F (F)**	**>50 (>50) F (F)**	**>50 (>50) F (F)**
SR 28/ Reservoir Road	SSSC	17 (**>50**) C (**F**)	20 (**>50**) C (**F**)	**40 (>50) E (F)**	**--**	--	**50 (>50) E (F)**
SR28/ Wellness Way	SSSC	--	--	--	2 (22) A (C)	1 (15) A (B)	--
Reservoir Road/ Wassou Road	SSSC	1 (2) A (A)	4 (6) A (A)	**>50 (>50) F (F)**	--	--	1 (5) A (A)
Wellness Way/ Wassou Way	SSSC	--	--	--	1 (4) A (A)	1 (5) A (A)	--
SR 28/ Biltmore Driveway	SSSC	2 (22) A (C)	6 (**>50**) A (**F**)	19 (**>50**) C (**F**)	--	--	29 (**>50**) D (**F**)
SR 28/ Boulder Way	SSSC	--	--	--	--	5 (**43**) A (**E**)	--
SR 28/ Pedestrian Crossing	Signal	5 A	6 A	8 A	7 A	9 A	6 A

Table 4.8-22

Level of Service Results – 2030 Cumulative Conditions (Baseline Conditions Assume Optimum Operating Conditions and Full Occupancy of Existing Tahoe Biltmore)

Intersection	Control Type [1]	Cumulative Conditions	Baseline Cumulative Conditions (Alt. A)	Cumulative Plus Project Conditions			
				Alt. B	Alt. C	Alt. D	Alt. E
		Delay [2] LOS	Delay [2] LOS	Delay [2] LOS	Delay [2] LOS	Delay [2] LOS	Delay [2] LOS
SR 28/ Stateline Road	SSSC	4 (**>50**) A (**F**)	5 (**>50**) A (**F**)	12 (**>50**) B (**F**)	12 (**>50**) B (**F**)	7 (**>50**) A (**F**)	5 (**>50**) A (**F**)
Stateline Road/ Cove Street	SSSC	1 (4) A (A)	1 (4) A (A)	8 (15) A (B)	--	--	1 (3) A (A)
Stateline Road/ Cove Street/ Boulder Way	SSSC	--	--	--	17 (**45**) C (**E**)	2 (4) A (A)	--
SR 28/Cal Neva Driveway	SSSC	26 (**>50**) D (**F**)	32 (**>50**) D (**F**)	**>50 (>50)** **F (F)**	31 (**>50**) D (**F**)	32 (**>50**) D (**F**)	**>50 (>50)** **F (F)**
SR 28/Coon Street	Signal	12 B	13 B	14 B	13 B	13 B	14 B
SR 28/SR 267	Signal	**>80** **F**	**>80** **F**	**>80** **F**	**>80** **F**	**>80** **F**	**>80** **F**

Source: Fehr & Peers, 2009

Notes:
[1] SSSC = Side Street Stop Control
[2] Delay is report in seconds per vehicle for the overall intersection for signalized intersections, and for the overall intersection (worst movement) for unsignalized intersections.
-- Not applicable
Bold indicates deficient operations.

Analysis: *No Impact; Alternative A*

Alternative A will not include any changes to the existing land uses, densities, or roadway network; therefore, there are no impacts associated with this alternative. The baseline conditions assume that the Tahoe Biltmore is operating at optimum conditions and at full capacity.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Alternatives B, C, D and E*

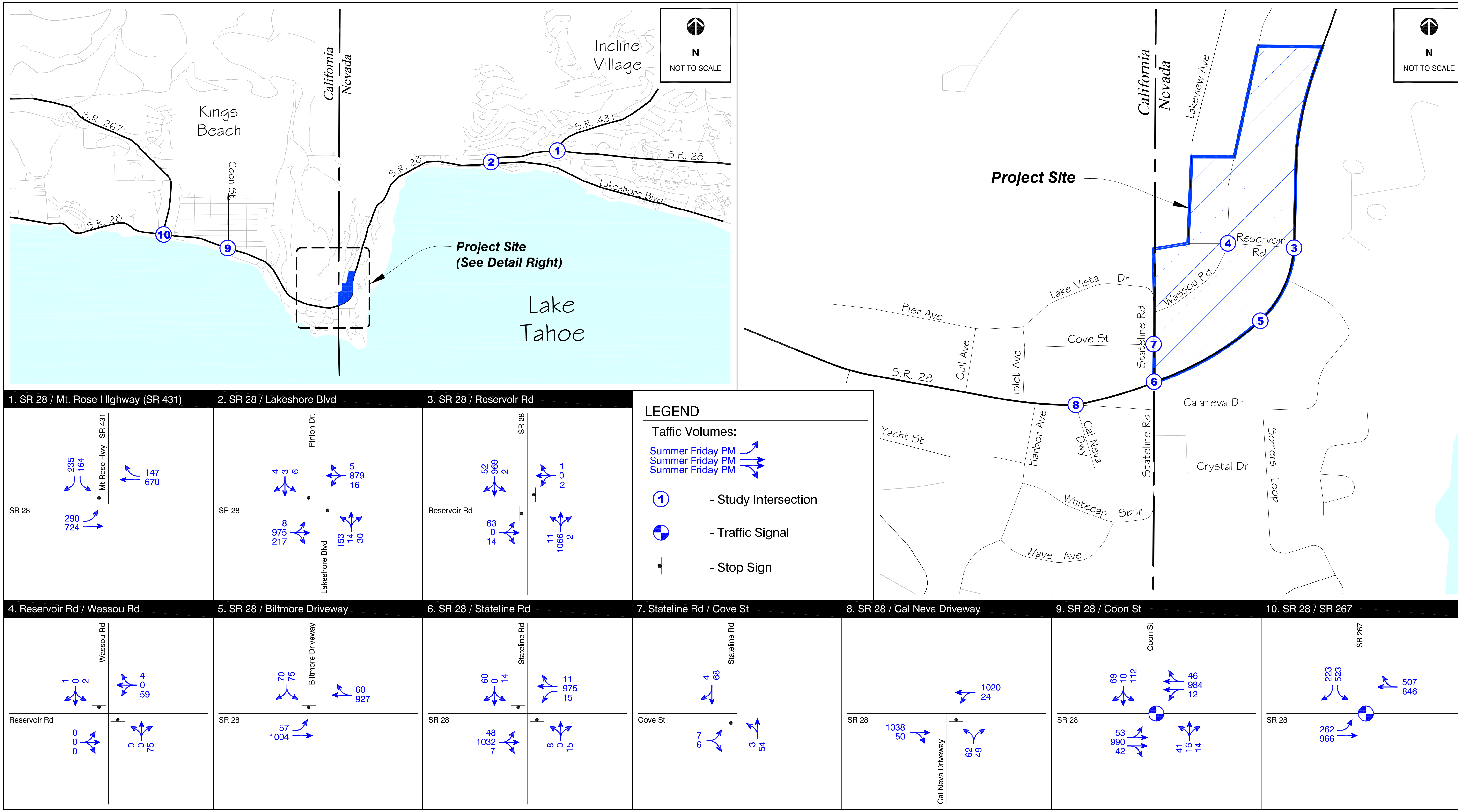
Alternative B. Table 4.8-22 shows the cumulative plus project level of service results at the study intersections for Alternative B. Cumulative plus Alternative B traffic volumes and lane configurations are shown on Figure 4.8-12.

As shown in Table 4.8-22, Alternative B will have a significant impact at the SR 28/Mount Rose Highway, SR 28/Lakeshore Boulevard, SR 28/Reservoir Road, Reservoir Road/Wassou Road, SR 28/Biltmore Driveway, SR 28/Stateline Road, SR 28/Cal Neva Drive, and SR 28/SR 267 intersections. The SR 28/Mount Rose Highway, SR 28/Lakeshore Boulevard, SR 28/Reservoir Road, SR 28/Stateline Road, SR 28/Cal Neva Drive, and SR 28/SR 267 intersections operate at unacceptable levels of service under cumulative conditions, however the delay at these intersections increases with the addition of the project, causing a significant impact.

Alternative C. Table 4.8-22 shows the cumulative plus project level of service results at the study intersections for Alternative C. Cumulative plus Alternative C traffic volumes and lane configurations are shown on Figure 4.8-13.

As shown in Table 4.8-22, the proposed project (Alternative C) will have a significant impact at the SR 28/Stateline Road and Stateline Road/Cove Street/Boulder Way intersections. Although these intersections operate at unacceptable levels of service under baseline cumulative conditions, the delay increases with Alternative C project traffic due to driveway locations and distribution of project generated traffic. The overall trip generation for Alternative C is less than the baseline cumulative conditions (Alternative A), however the internal roadway network and driveway locations are different, causing an increase in traffic volumes at some study locations.

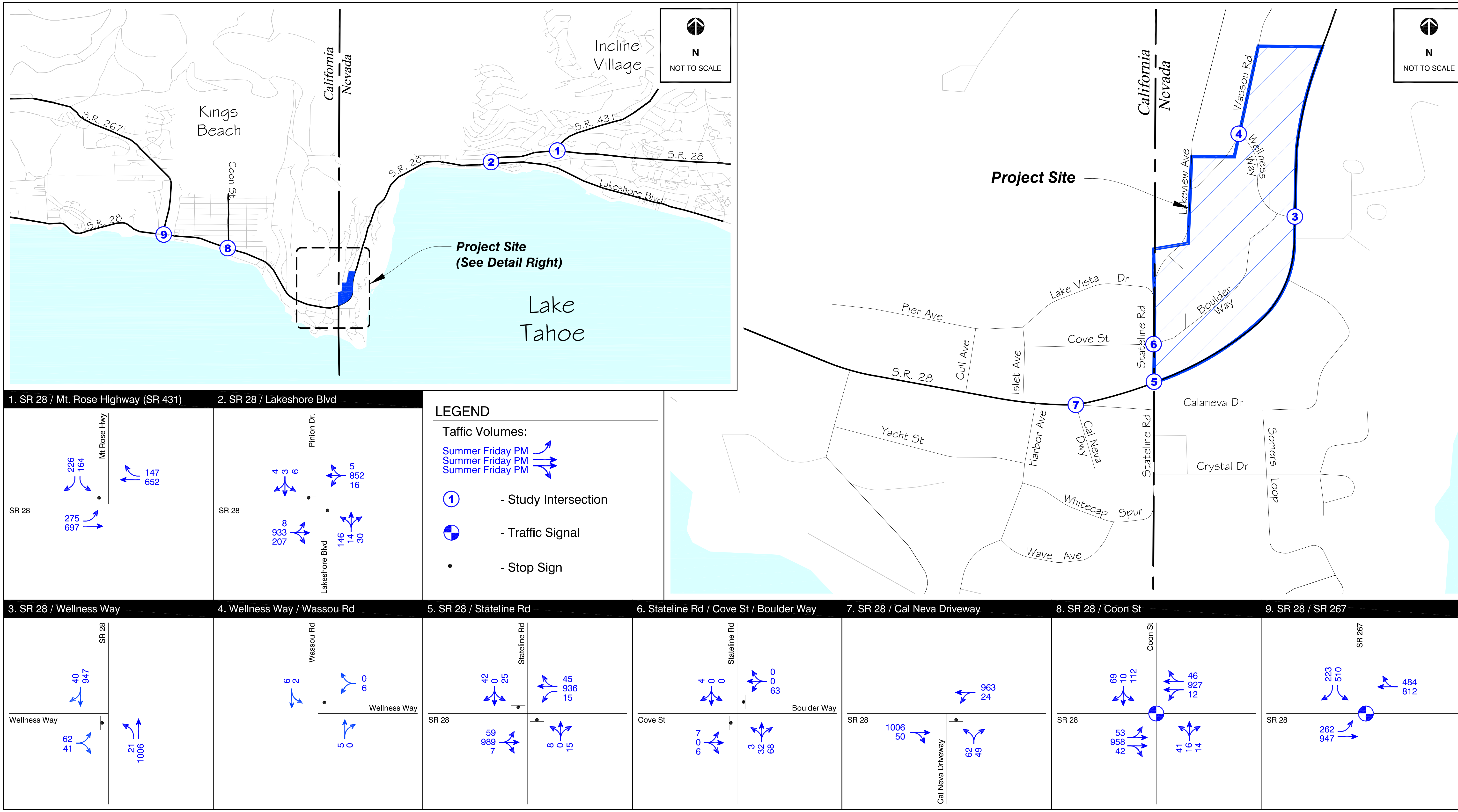
The SR 28/Mount Rose Highway, SR 28/Lakeshore Boulevard, SR 28/Cal Neva Drive, and SR 28/SR 267 intersections operate at unacceptable levels of service under cumulative plus project conditions, however the traffic volumes with Alternative C are less than baseline cumulative volumes at these intersections, resulting in a less than significant impact.



FEHR & PEERS
TRANSPORTATION CONSULTANTS

Jun 26, 2009 JM
N:\Reno Projects\2008\RN08-0396 (Boulder Bay EIS)\Graphics\396 Fig 2.dwg

Boulder Bay EIS
Cumulative Plus Alternative B Lane Configurations, Control Types, and Traffic Volumes
Figure 4.8-12



FEHR & PEERS
TRANSPORTATION CONSULTANTS

Jun 26, 2009 JM
N:\Reno Projects\2008\RN08-0396 (Boulder Bay EIS)\Graphics\396 Fig 6 – cumulative + project.dwg

Boulder Bay EIS
Cumulative Plus Alternative C Lane Configurations, Control Types, and Traffic Volumes
Figure 4.8-13

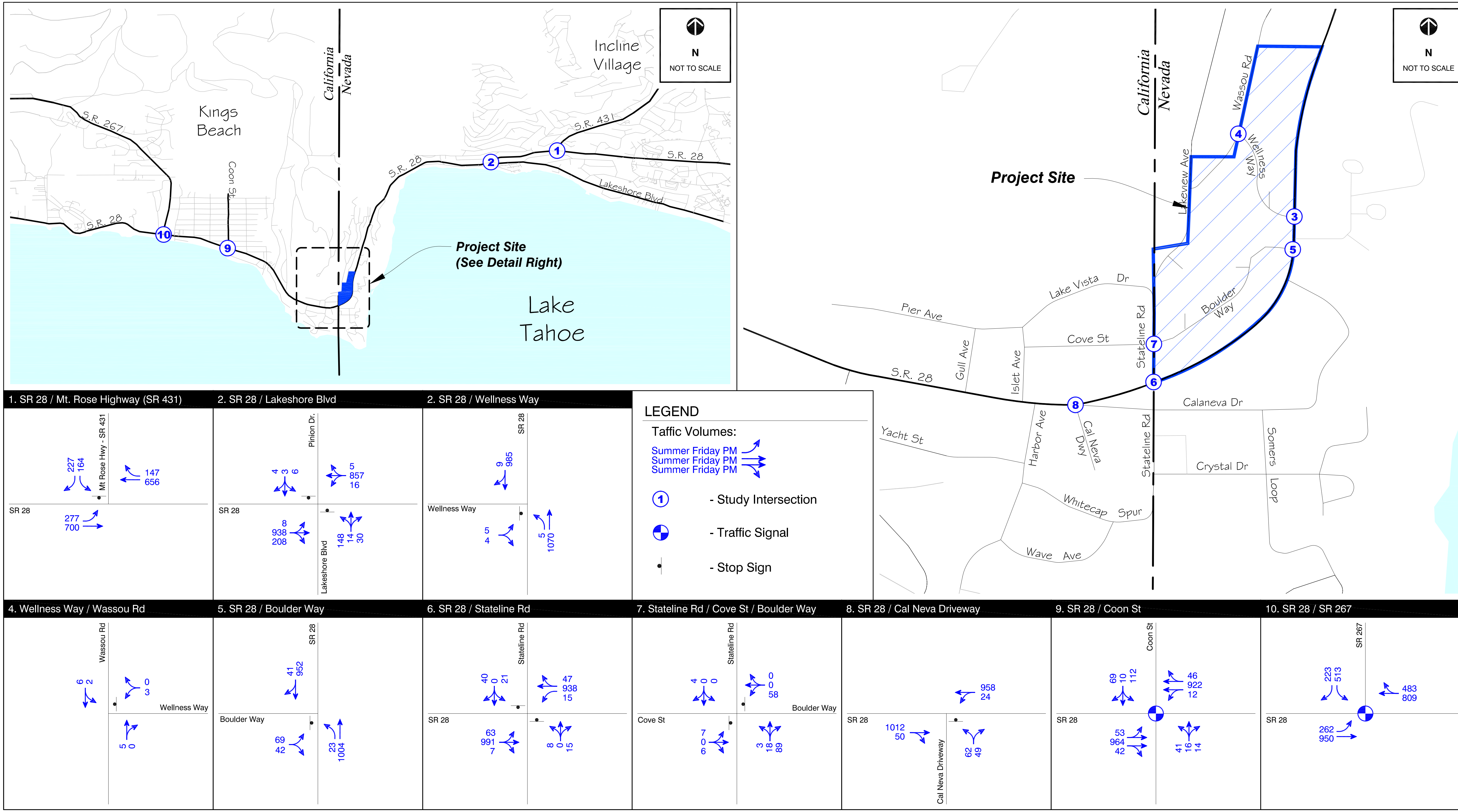
Alternative D. Table 4.8-22 shows the cumulative plus project level of service results at the study intersections for Alternative D. Figure 4.8-14 shows cumulative plus Alternative D traffic volumes and lane configurations.

As shown in Table 4.8-22, Alternative D will have a significant impact at the SR 28/Boulder Way and SR 28/Stateline Road intersections. Although the SR 28/Stateline Road intersection operates at an unacceptable level of service under baseline cumulative conditions, the delay increases with Alternative D project traffic due to driveway locations and distribution of project generated traffic. The overall trip generation for Alternative D is less than the baseline cumulative conditions (Alternative A), however the internal roadway network and driveway locations are different, causing an increase in traffic volumes at some study locations.

The SR 28/Mount Rose Highway, SR 28/Lakeshore Boulevard, SR 28/Cal Neva Drive, and SR 28/SR 267 intersections operate at unacceptable levels of service under cumulative plus project conditions, however the traffic volumes with Alternative D are less than baseline cumulative volumes at these intersections, resulting in a less than significant impact.

Alternative E. Table 4.8-22 shows the baseline cumulative plus project level of service results at the study intersections for Alternative E. Figure 4.8-15 shows baseline cumulative plus Alternative E traffic volumes and lane configurations.

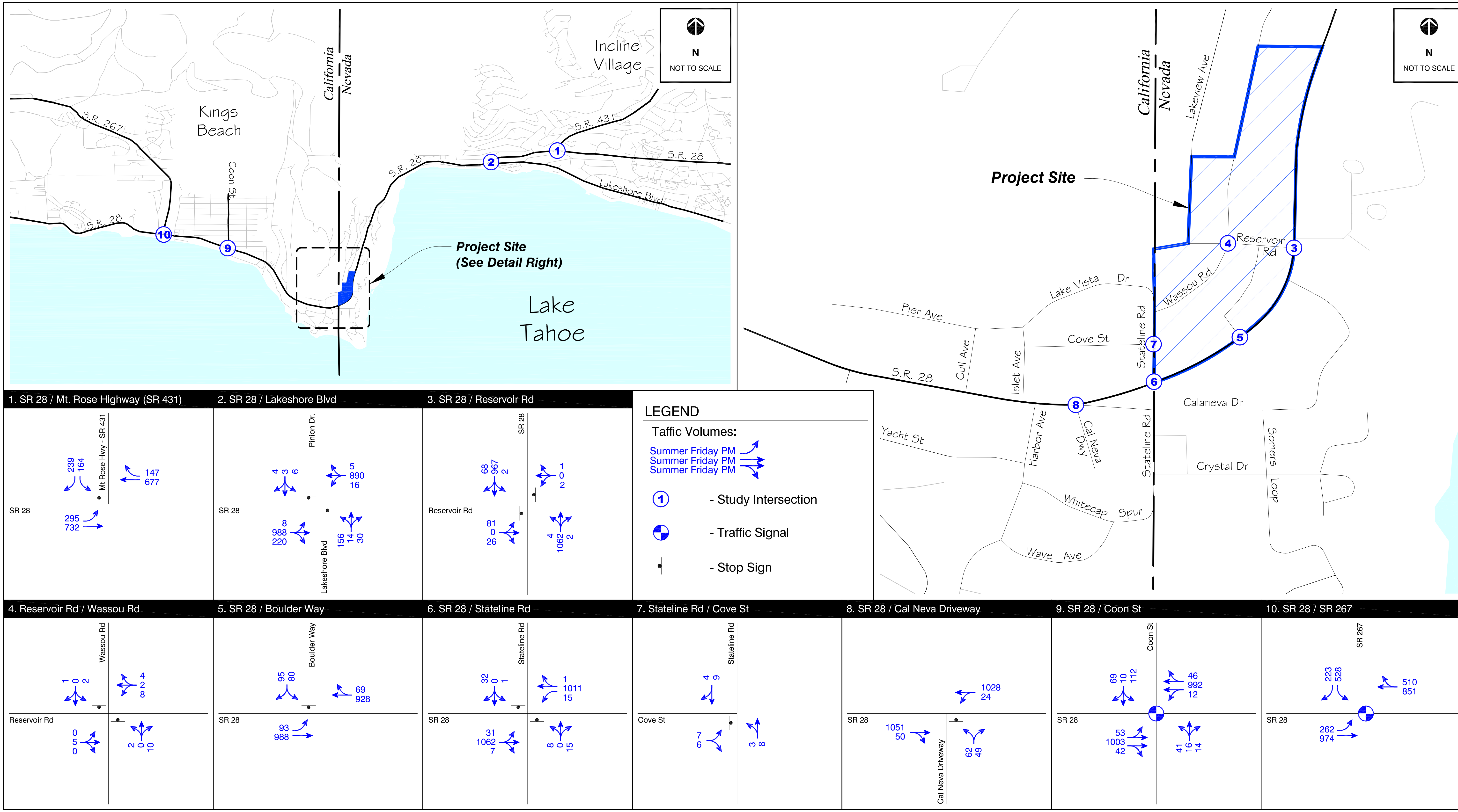
As shown in Table 4.8-22, Alternative E will have a significant impact at the SR 28/Mount Rose Highway, SR 28/Lakeshore Boulevard, SR 28/Reservoir Road, SR 28/Biltmore Driveway, SR 28/Stateline Road, SR 28/Cal Neva Drive, and SR 28/SR 267 intersections. The SR 28/Mount Rose Highway, SR 28/Lakeshore Boulevard, SR 28/Reservoir Road, SR 28/Stateline Road, SR 28/Cal Neva Drive, and SR 28/SR 267 intersections operate at unacceptable levels of service under cumulative conditions, however the delay at these intersections increases with the addition of the project, causing a significant impact.



Boulder Bay EIS
Cumulative Plus Alternative D Lane Configurations, Control Types, and Traffic Volumes
Figure 4.8-14

FEHR & PEERS
TRANSPORTATION CONSULTANTS

Jun 26, 2009 JM
N:\Reno Projects\2008\RN08-0396 (Boulder Bay EIS)\Graphics\396 Fig 10_11_12 - Alt D.dwg



FEHR & PEERS
TRANSPORTATION CONSULTANTS

May 20, 2009 JM
N:\Reno Projects\2008\RN08-0396 (Boulder Bay EIS)\Graphics\396 Fig 13_14_15 – Alt E.dwg

Boulder Bay EIS
Cumulative Plus Alternative E Lane Configurations, Control Types, and Traffic Volumes
Figure 4.8-15

Mitigation: **TRANS-C1: Implement Intersection Improvements.**

Alternative B

SR 28/Mount Rose Highway:

- Add an acceleration lane to SR 28 east of Mount Rose Highway, providing acceleration room for southbound left-turning vehicles.
  Delay: ***>50 (>50),*** *LOS:* ***F (F)***

  Note: This mitigation does not improve level of service to D or better, however it does improve intersection operations to better than cumulative conditions.

  NDOT and the Tahoe Transportation District are considering a roundabout at this intersection. A single-lane roundabout with right-turn pockets at the westbound and southbound approaches was analyzed with Alternative B volumes. The roundabout is expected to operate at LOS C with an overall intersection delay of 20 seconds; however, the eastbound approach has a v/c ratio of 0.987. Adding a bypass lane for the eastbound through movement would improve operations to LOS B with 14 seconds of delay and overall intersection v/c ratio of 0.792.

SR 28/Lakeshore Boulevard:

- Add an acceleration lane to SR 28 west of Lakeshore Boulevard.
  Delay: 14 ***(>50)****, LOS: B* ***(F)***

  Note: This mitigation recommendation does not improve level of service to D or better at the side-street approach, however it does improve intersection operations to better than cumulative conditions.

SR 28/Reservoir Road:

- Extend the two-way left-turn lane on SR 28, adjacent to the project site, to beyond Reservoir Road to the north.
  Delay: 2 ***(>50)****, LOS: A* ***(F)***

SR 28/Biltmore Driveway, SR 28/Pedestrian Signal, SR 28/Stateline Road, SR 28/Cal Neva Drive:

- In order to improve the "downtown" corridor as a whole, the following improvements are recommended: add a traffic signal to the SR 28/Stateline Road intersection, remove the existing pedestrian signal and move the pedestrian crossing to the SR 28/Stateline Road intersection, move access to the Cal Neva Resort to the SR 28/Stateline Road intersection via Stateline Road and remove Cal Neva Drive.
  SR 28/Biltmore Driveway - *Delay: 5* ***(44)****, LOS: A* ***(E)***
  SR 28/Pedestrian Signal – NA
  SR 28/Stateline Road - *Delay: 13, LOS: B*
  SR 28/Cal Neva Drive – NA

Note: Although no improvements were made to the SR 28/Biltmore Driveway intersection, the improvements at the intersections surrounding it improve operations through the corridor and therefore improve operations at the intersection. The level of service at the side-street approach does not improve to LOS D or better, however the overall intersection level of service is A and the side-street approach (Biltmore Driveway) only effects operations internal to the project site.

The overall corridor improvement will also improve operations at the Stateline Road/Cove Street intersection: *Delay: 1 (4), LOS: A (A)*

SR 28/SR 267:

- Add a right-turn pocket to the westbound approach.
  *Delay: **75**, LOS: **E***

  Note: This mitigation recommendation does not improve level of service to D or better, however it does improve intersection operations to better than cumulative conditions.

Alternative C

SR 28/Stateline Road and Stateline Road/Cove Street:

- Add a traffic signal to the SR 28/Stateline Road intersection, remove the existing pedestrian signal and move the pedestrian crossing to the SR 28/Stateline Road intersection.

  SR 28/Stateline Road - *Delay: 16, LOS: B*
  Stateline Road/Cove Street – *Delay: 2 (3), LOS: A (A)*

Alternative D

SR 28/Boulder Way and SR 28/Stateline Road:

Option 1

- Add a traffic signal to the SR 28/Stateline Road intersection, remove the existing pedestrian signal and move the pedestrian crossing to the SR 28/Stateline Road intersection.

  These modifications will improve operations at the SR 28/Stateline Road intersection. The analysis results show that these improvements will increase delay at the SR 28/Boulder Way intersection, due to queuing from the signal. The side-street approach of the SR 28/Boulder Way intersection will increase to LOS F.

  SR 28/Boulder Way – *Delay: 10 (**>50**), LOS: A (**F**)*
  SR 28/Stateline Road - *Delay: 17, LOS: B*

Note: Boulder Way serves as an access driveway providing access to the Boulder Bay Resort only. LOS F operations at the side-street approach of the SR 28/Boulder Way intersection will only effect traffic operations internal to the project site, and should not be considered a significant impact to the surrounding regional roadway system.

Option 2

- Option 2 includes all of the same intersection and roadway improvements as Option 1, but also limits access at the SR 28/Boulder Way driveway intersection to right-in/right-out/left-in only.

  The current circulation plan for Alternative D of the Boulder Bay Resort limits Boulder Way to one-way (north/northeast) between the two parking garage access points on the project site. In order to limit access at the SR 28/Boulder Way intersection, Boulder Way would need to allow two-way traffic. Two-way traffic on Boulder Way would change the pedestrian environment of the project; however, without the improvement, onsite vehicle queuing will occur as vehicles exit via Boulder Way.

  SR 28/Boulder Way – *Delay: 3* ***(42)****, LOS: A* ***(E)***
  SR 28/Stateline Road - *Delay: 18, LOS: B*

  Note: The level of service at the side-street approach of the SR 28/Boulder Way intersection does not improve to D or better, however the overall intersection level of service is A and the side-street approach (Boulder Way) only effects operations internal to the project site.

<u>Alternative E</u>

SR 28/Mount Rose Highway:

- Add a two-way left-turn lane to SR 28 east of Mount Rose Highway, providing acceleration room for southbound left-turning vehicles.
  Delay: ***>50 (>50),*** *LOS:* ***F (F)***

  Note: This mitigation recommendation does not improve level of service to D or better at the side-street approach, however it does improve intersection operations to better then existing conditions.

  NDOT and the Tahoe Transportation District are considering a roundabout at this intersection. A single-lane roundabout with right-turn pockets at the westbound and southbound approaches was analyzed with Alternative E volumes. The roundabout is expected to operate at LOS C with an overall intersection delay of 22 seconds; however, the eastbound approach will have a v/c ratio of 0.998. Adding a bypass lane for the eastbound through movement would improve operations to LOS B with 14 seconds of delay and overall intersection v/c ratio of 0.805.

SR 28/Lakeshore Boulevard:

- Add a two-way left-turn lane to SR 28 west of Lakeshore Boulevard.
  Delay: 5 ***(47)****, LOS: A* ***(E)***

  Note: This mitigation recommendation does not improve level of service to D or better at the side-street approach, however it does improve intersection operations to better than existing conditions.

SR 28/Reservoir Road, SR 28/Biltmore Driveway, SR 28/Pedestrian Crossing, SR 28/Stateline Road, SR 28/Cal Neva Drive:

- In order to improve the "downtown" corridor as a whole, the following improvements are recommended: add a traffic signal to the SR 28/Reservoir Road intersection, limit access to the Biltmore Driveway to right-in/right-out only from SR 28, add a traffic signal to the SR 28/Stateline Road intersection, remove the existing pedestrian signal and move the pedestrian crossing to the SR 28/Stateline Road intersection, move access to the Cal Neva Resort to the SR 28/Stateline Road intersection via Stateline Road and remove Cal Neva Drive.
  SR 28/Reservoir Road – *Delay: 13, LOS: B*
  SR 28/Biltmore Driveway - *Delay: 3* ***(36)****, LOS: A* ***(E)***
  SR 28/Pedestrian Signal – NA
  SR 28/Stateline Road - *Delay: 15, LOS: B*
  SR 28/Cal Neva Drive – NA

  Note: The level of service at the side-street approach of the SR 28/Biltmore Driveway intersection does not improve to LOS D or better, however the overall intersection level of service is A and the side-street approach (Biltmore Driveway) only effects operations internal to the project site.

SR 28/SR 267:

- Add a right-turn pocket to the westbound approach.
  Delay: ***78****, LOS:* ***E***

  Note: This mitigation recommendation does not improve level of service to D or better, however it does improve intersection operations to better then cumulative conditions.

After Mitigation: *Less than Significant Impact; Alternatives B, C, D and E*

Implementation of the mitigation measures listed in Mitigation Measure TRANS-C1 will improve the overall intersection level of service at the impacted intersections to either better than cumulative conditions or to within level of service policy.

Intersection Queuing at SR 28/SR 267

Analysis: *No Impact; Alternative A*

Alternative A will not include any changes to the existing land uses, densities, or roadway network; therefore, there are no impacts associated with this alternative.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Alternatives B and E*

A right-turn pocket is recommended at the westbound approach of the SR 28/SR 267 intersection based on the level of service analysis above for plus project conditions. Cumulative plus project queuing analysis was performed for Alternatives B and E assuming this mitigation measure is in place. Analysis results show that queuing will either be reduced or show a minimal (less than 1%) increase at all intersection approaches. Table 4.8-23 shows the queuing at each approach for Alternatives B and E.

Table 4.8-23

Maximum Queue Lengths at SR 28/SR 267 – Cumulative and Cumulative Plus Project Conditions

Intersection Approach	Baseline Cumulative Conditions	Baseline Cumulative Plus Alternative B Conditions	Baseline Cumulative Plus Alternative E Conditions
Southbound	3,200	3,200	3,195
Eastbound	3,575	1,080	1,170
Westbound	2,845	2,905	2,900

Source: Fehr & Peers, 2009

Notes:
Maximum queue lengths reported in feet from SimTraffic microsimulation results.
Alternatives were analyzed with a right-turn pocket at the westbound approach.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Alternatives C and D*

The trip generation and level of service at the SR 28/SR 267 intersection are less than for the cumulative conditions (Alternative A). Therefore, queuing at the intersection approaches would not be affected by Alternatives C and D.

Mitigation: No mitigation is required.

REFERENCES

Ackeret, Kenneth W., Hosea III, Robert C. 1992. *Trip Generation Rates for Las Vegas Area Hotel-Casinos*.

Boulder Bay LLC. 2009. *Crystal Bay Market Analysis*.

Box, Paul C., Bunte, William. 1998. *Gaming Casino Traffic*.

Caltrans. 2002. *Guide for the Preparation of Traffic Impact Studies.*

Caltrans. 2008. Caltrans Traffic and Vehicle Systems Unit Data.

Federal Highway Administration (FHWA). 2003. *Manual on Uniform Traffic Control Devices (MUTCD)*.

Fehr & Peers. 2009. *Fehr & Peers Mixed Use Trip Generation Equations.*

Institute of Transportation Engineers (ITE). 2008. *Trip Generation 8th Edition*.

Institute of Transportation Engineers (ITE). 2004. *Trip Generation Handbook*. Institute of Transportation Engineers (ITE). 2004. *Parking Generation 3rd Edition*.

Lake Tahoe Bicycle Coalition. *http://www.tahoebike.org*

LSC Transportation Consultants, Inc. 2008. *Boulder Bay Resort Transportation Study*.

LSC Transportation Consultants, Inc. 2007. *(Guest information surveys conducted at existing Tahoe Biltmore)*.

MRO Engineers, Inc. 2008. *Thunder Valley Casino Expansion Project – Placer County, California*.

Nevada Department of Transportation (NDOT). 2008. *Annual Traffic Report*.

Rowe, Curtis D., Kaseko, Mohamed S., Ackeret, Kenneth W. 2002. *Recalibration of Trip Generation Model for Las Vegas Hotel/Casinos*.

Tahoe Regional Planning Agency (TRPA). 1980. *Tahoe Regional Planning Compact*.

Tahoe Regional Planning Agengy (TRPA). 1986. *Regional Plan for the Lake Tahoe Basin: Goals and Policies*.

Tahoe Regional Planning Agency (TRPA). 1996. *North Stateline Community Plan*.

Tahoe Regional Planning Agency (TRPA). 1998. *Code of Ordinances: Chapter 93 Traffic and Air Quality Mitigation Program.*

Tahoe Regional Planning Agency (TRPA). 2004. *Trip Table*.

Tahoe Regional Planning Agency (TRPA). 2006. *2006 Threshold Evaluation Report*.

Tahoe Regional Planning Agency (TRPA). 2006. *Final Draft Lake Tahoe Regional Bicycle and Pedestrian Master Plan*.

Tahoe Regional Planning Agency (TRPA). 2008. *Mobility 2030: Lake Tahoe Basin Regional Transportation Plan*.

Tahoe Regional Planning Agency (TRPA). 2008. *Mitigation Fee Schedule*.

Transportation Research Board (TRB). 2000. *Highway Capacity Manual*

Truckee North Tahoe Transportation Management Association. http://www.laketahoetransit.com

Trueblood, Michael, Gude, Tara. *Trip Generation Characteristics of Small to Medium Sized Casinos*.

Urban Land Institute (ULI). 2005. *Shared Parking*

Washoe County. 1996. *Signage, Parking, and Design Standards and Guidelines.*

Washoe County. 2007. *Washoe County Development Code*.

Washoe County Regional Transportation Commission (RTC). 2008. *Regional Transportation Plan*.