4.3 TRAFFIC AND ACCESS

1. SUMMARY

This section presents an analysis of the potential impacts to traffic and circulation that would result with implementation of the proposed project, including an overview of the existing traffic and circulation system in and surrounding the proposed project area. The analysis presented in this section summarizes the findings of the Transportation Impact Study (May 2010) prepared for the proposed project by Fehr & Peers Transportation Consultants, which has been independently reviewed and approved by the City's Traffic Division. A complete copy of the traffic study is included as ***Appendix 4.3****.*

The proposed project would generate the following number of external daily vehicle trips by the various land uses:

- *Residential uses: 6,100 daily trips*
- *Non-residential uses: 15,300 daily trips*
- *Metrolink (auto travel to/from station): 1,430 daily trips*
- *Bus Transfer Station: 50 daily trips*

About two-thirds of trips to the office, retail, and entertainment uses in Vista Canyon are expected to come from locations within a 6-mile drive (i.e., from residences in the east side of the Valley). Many of these would be "replacement trips" otherwise made to other destinations in the west Valley or to the south. Additionally, the proposed project would alter travel patterns within the study area by virtue of adding new land uses, relocating the Metrolink station from the Via Princessa site to the project site, and creating several new roadway connections.

Impacts associated with the proposed project were analyzed under three different scenarios: Phase 1 (2012), Project Buildout (2015), and Long-Range Cumulative (2030). Impacts under each of these scenarios are summarized below.

Phase 1

Phase 1 of the project would cause significant impacts at five study intersections in 2012. Implementation of mitigation measures would reduce these impacts to less than significant levels at four of the five impacted intersections. Recommended improvements at one of the intersections (Sand Canyon Road/Lost Canyon Road) would not be completed until after Phase I, as a connection to Lost Canyon Road at La Veda Avenue is not proposed with Phase I and, therefore, the project would have a temporary significant and unavoidable impact. However, implementation of identified mitigation at this intersection as part of project buildout would reduce impacts to a less than significant level.

Project Buildout

Full buildout of the project in 2015 would cause significant impacts at eight study intersections (inclusive of the five intersections impacted by Phase I). Implementation of recommended feasible mitigation measures at these intersections would reduce impacts to less than significant levels.

One of the intersections significantly impacted under the Project Buildout scenario would be the Sand Canyon Road/Lost Canyon Road intersection. The proposed mitigation is to implement one of the three mitigation design options for the intersection, all of which are analyzed in this Section. Another design option would leave the intersection in its present condition – a four way stop, which would not mitigate project or cumulative impacts. The four options are:

- *Option 1 (Four-Way Stop)* – this d*esign option is presently in place at the intersection. The intersection is presently congested in the morning and afternoon when Pinecrest School and Sulphur Springs Elementary School are in session due to student drop-off and pick-up. Under this design option, the operation of this intersection in the future would worsen to a Level of Service (LOS) F with or without the Vista Canyon project. If this option is selected, the project would result in a significant unavoidable impact at the intersection.*

- *Option 2 (Signalized Intersection "Look Ahead Signal") – this design option would result in a signalized intersection, with a "look ahead" signal at the southwest corner to address northbound "line of sight" requirements. Minimal widening of the intersection would occur with this design option, with right-of-way necessary at the northwest and southeast corners. Encroachment within the protected zone of the heritage oak tree located along the eastern edge of Sand Canyon Road would remain similar to the existing condition. A fence, located within the right-of-way, would have to be removed to adhere to "line of sight" requirements. Option 2 would result in the improved operation of the intersection in the future (LOS D) even with future growth (including Vista Canyon), as compared to the existing four-way stop design.*

- *Option 3 (Roundabout) – this design option would include the installation of a "roundabout" or traffic circle at the intersection. This option would involve the relocation of the intersection to the north and west to adhere to northbound "line of sight" requirements. Right-of-way acquisition would be necessary on all four corners; most of it would come from the northwest corner (which is presently vacant). Encroachment within the protected zone of the heritage oak tree located along the eastern edge of Sand Canyon Road would still occur, consistent with the existing condition. From a traffic operational standpoint, this design option would be the best of the four, improving the future LOS F under the existing design to an LOS C in the AM peak hour and LOS B in the PM peak hour even with future growth (including the Vista Canyon project).*

- *Option 4 (Signalized Intersection - Standard Configuration) – this design option improves the intersection of Lost Canyon Road/Sand Canyon Road with a fully signalized intersection complying with all of the City's standard intersection design criteria. This option would require the acquisition of right-of-way on the northwest and southeast corner. A "line of sight" easement would be needed from three properties located east of Sand Canyon Road and south of the intersection. All vegetation and fencing within this easement would need to be removed, including the heritage oak tree located along the eastern edge of Sand Canyon Road. Similar to the "Look Ahead Signal" design option, this option would result in the improved operation of the intersection (LOS D), as compared to the existing design, even with future growth (including the Vista Canyon project).*

Buildout of the proposed project also would provide improvements to the segment of Lost Canyon Road between the project site and Sand Canyon Road. This segment presently has one lane in each direction with a posted speed limit of 30 miles per hour (mph) (25 mph when children are present). A continuous sidewalk is provided on the south side of the street, from the project site to Sand Canyon Road. Sulphur Springs Elementary School and Pinecrest School both take vehicular access from this segment of Lost Canyon Road. Presently, this segment of Lost Canyon Road is congested when school is in session during the morning when students are being dropped off and in the afternoon when students are being picked up. The proposed improvements to this segment of Lost Canyon Road include:

- *Pavement widening and striping to accommodate one travel lane in each direction with a median turn lane, a trail along the north side of the roadway, a roundabout at the intersection of La Veda Avenue and Lost Canyon Road, and parallel parking on the south side of Lost Canyon Road (these improvements would be completed within the existing right-of-way);*

- *Restricting the outbound-only driveways at each school to right-turns to minimize conflicting turning movements (provided that a roundabout is installed at the Sand Canyon Road/Lost Canyon Road intersection); and*

- *Construction of a narrow raised median at the easterly Pinecrest School driveway, including a sign prohibiting u-turns.*

With respect to State Route 14 (SR-14), project buildout also would increase traffic on SR-14 resulting in significant impacts to the segment from Sand Canyon Road to Soledad Canyon Road. It should be noted that this segment would operate at unacceptable levels of service even without the project as most of the additional vehicle trips would be generated by future growth occurring north and east of the Valley, primarily within the Antelope Valley.

There presently are no improvements for the SR-14 planned and programmed by Caltrans that would mitigate the identified impacts, nor is there an established funding program in place to collect developer fees to implement any such improvements. Notwithstanding, the project applicant and Caltrans have negotiated a Traffic Mitigation Agreement that would require the applicant to pay an in-lieu fee to Caltrans for future improvements to SR-14 based upon the project's fair share. The Traffic Mitigation Agreement would be signed by both parties upon project approval. However, because there are presently no planned and programmed improvements for SR-14, nor is there an established funding program, the project's payment of an in-lieu fee would not fully mitigate the identified significant impacts. Therefore, mitigation is considered infeasible and the identified impacts would remain significant and unavoidable.

Long-Range Cumulative

Under cumulative conditions, the project would cause significant impacts along Soledad Canyon Road between Sierra Highway and Golden Valley Road. No feasible improvements are available as this arterial is already

constructed to its ultimate width; the City General Plan Circulation Element recognizes that in some cases street improvements to accommodate additional traffic are not capable of being implemented due to right-of-way limitations and existing development. Therefore, these impacts would be significant and unavoidable. However, it is worth noting that the project is a transit-oriented development, and as such, would generate fewer vehicle trips and miles of travel than traditional developments. The project will also be paying Eastside Bridge and Major Thoroughfare District fees or constructing eligible improvements that serve to mitigate impacts within the District boundaries.

Project buildout also would increase traffic on SR-14 resulting in significant cumulative impacts during the P.M. peak hour (northbound direction) for the segment from Sand Canyon Road to Soledad Canyon Road. Project trips are estimated at 3.8 percent of future traffic growth for this segment. It should be noted that a majority of the future traffic growth on SR-14 comes from areas east and north of the Santa Clarita Valley.

As is the case with respect to SR-14 impacts under the Project Buildout 2015 scenario, there presently are no improvements for the SR-14 planned and programmed by Caltrans that would mitigate the identified impacts, nor is there an established funding program in place to collect developer fees to implement any such improvements. Notwithstanding, the project applicant and Caltrans have negotiated a Traffic Mitigation Agreement that would require the applicant to pay an in-lieu fee to Caltrans for future improvements to SR-14 based upon the project's fair share. The Traffic Mitigation Agreement would be signed by both parties upon project approval. However, because there are presently no planned and programmed improvements for SR-14, nor is there an established funding program, the project's payment of an in-lieu fee would not fully mitigate the identified significant impacts. Therefore, mitigation is considered infeasible and the identified impacts would remain significant and unavoidable.

Parking

The proposed project would not result in significant impacts to parking. The Parking Demand Analysis, Vista Canyon Transit-Oriented Development (Planning Area 1 and Planning Area 2), Willson 2010, analyzes parking demand and establishes parking requirements in Planning Area 1 (PA-1) and Planning Area 2 (PA-2) that take into account the availability of shared parking and the transit-oriented nature of the proposed project to ensure adequate parking capacity. A complete copy of the Parking Demand Analysis is included in ***Appendix 4.3****. Planning Areas 3 and 4 of the Vista Canyon project would comply with existing City of Santa Clarita Unified Development Code (UDC) parking requirements, which have been included in the Vista Canyon Specific Plan.*

Transit and Pedestrian Impacts

The proposed project would not result in significant impacts related to transit and the pedestrian/bicycle system, as the project would replace a temporary Metrolink rail station with a new permanent station, add a bus transfer center, and add new bicycle and pedestrian facilities.

Vehicle Miles Traveled

Finally, the Vista Canyon project is estimated to generate an average of 58 Vehicle Miles of Travel (VMT) per household per day. This is within the lower range of the estimated state-wide average of 55 to 65 daily VMT per household and likely much less than the VMT for most households in the Santa Clarita Valley.

2. METHODOLOGY

a. Study Approach

Fehr & Peers met with City of Santa Clarita staff in July 2008 to discuss the approach to the Vista Canyon Traffic Study. A detailed scope of work was developed by Fehr & Peers in October 2008. It was reviewed and approved by the City's Traffic Division. The scope of work was developed in consideration of the following important factors:

1. Operations should be analyzed at intersections using a methodology that produces results that match field observations.

2. The study should make appropriate assumptions regarding reductions in vehicle trips due to the mixed-use nature of the project and its immediate proximity to a new Metrolink station and bus transfer station.

3. Additional roadway and land use detail should be added to the Santa Clarita Valley Consolidated Travel Demand Model (SCVCTDM) to better predict traffic levels in the project vicinity.

4. Improvements to Lost Canyon Road west of Sand Canyon Road should be identified to improve access to the Sulphur Springs Community School and Pinecrest School, while also accommodating project traffic.

b. Analysis Scenarios

The following scenarios are analyzed in this study:

- Existing Conditions
- 2012 No Project Conditions
- 2012 Plus Phase 1 Project Conditions
- Interim (2015) No Project Conditions
- Interim (2015) Plus Project Buildout Conditions
- Cumulative (2030) No Project Conditions

- Cumulative (2030) Plus Project Buildout Conditions

The "2012 plus Phase 1 project" scenario evaluates the first phase of the project under assumptions that the Metrolink station is not built or operational, Vista Canyon Road is not extended across the Santa Clara River to Soledad Canyon Road and Lost Canyon Road is not extended easterly from the project to La Veda Avenue. The interim scenario is commonly analyzed for traffic studies in Santa Clarita. The cumulative scenario is required both by the City and the California Environmental Quality Act (CEQA). The existing, 2012, and 2015 scenarios focus on weekday AM and PM peak hour operations at intersections and freeways. The cumulative scenario focuses on average daily roadway operations on street segments and freeways.

c. Santa Clarita Valley Consolidated Travel Demand Model

A version of the Santa Clarita Valley Consolidated Travel Demand Model (SCVCTDM), enhanced to provide improved forecasting accuracy in the study area, was used to develop weekday AM and PM peak hour forecasts at the study locations for all scenarios. The detailed process undertaken to update the SCVCTDM's ability to produce improved peak hour and daily traffic forecasts in the study area is described in **Appendix 4.3**.

d. Intersections

For this study, the City of Santa Clarita Traffic Division required that all signalized and unsignalized intersections in the City or directly adjacent to the City be analyzed using Highway Capacity Manual (HCM, Transportation Research Board, 2000) procedures. This method assigns a Level of Service (LOS) grade to an intersection based on the average delay. LOS is a qualitative measure used to describe the condition of traffic flow, ranging from uncongested conditions at LOS A to over-saturated conditions at LOS F. All ramp terminal intersections maintained by Caltrans were also analyzed using the HCM methodology. The HCM procedures result in an analysis that utilizes field observations to assess the potential project impacts on the selected intersections within the project's study area. The SR-14/Via Princessa and SR-14/Sand Canyon Road interchange ramp intersections were analyzed using the SimTraffic micro-simulation program, which employs HCM procedures and also considers the effects of signal progression, lane utilization, and vehicle queuing.

For the remaining intersections, all of which are within the County, the intersection capacity utilization (ICU) method was selected consistent with County policy. The ICU method assigns a LOS grade to an intersection based on its volume-to-capacity (v/c) ratio. LOS descriptions and the associated v/c ratio and delay ranges for signalized and unsignalized intersections are provided in **Table 4.3-1, Level of Service Criteria – Roadways and Intersections**.

Table 4.3-1
Level of Service Criteria – Roadways and Intersections

	Signalized Intersections		Unsignalized Intersections	
LOS	V/C Ratio[1]	Average Delay[2]	Average Delay	Description
A	0.00–0.60	≤ 10 sec/veh	≤ 10 sec/veh	Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at signalized intersections is normal.
B	0.61–0.70	> 10 to 20 sec/veh	> 10 to 15 sec/veh	Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at signalized intersections is minimal.
C	0.71–0.80	> 20 to 35 sec/veh	> 15 to 25 sec/veh	Ability to maneuver and change lanes in midblock locations may be more restricted than at LOS "B," and longer queues, adverse signal coordination or both may contribute to lower average travel speeds.
D	0.81–0.90	> 35 to 55 sec/veh	> 25 to 35 sec/veh	LOS "D" borders on a range in which small increases in flow may cause substantial increases in delay and decreases in travel speed. LOS "D" may be due to adverse signal progression, inappropriate signal timing, high volumes, or a combination of these factors.
E	0.91–1.00	> 55 to 80 sec/veh	> 35 to 50 sec/veh	LOS "E" is characterized by significant delays. Such operations are caused by a combination of adverse progression, high signal density, high volumes, extensive delays at critical intersections, and inappropriate signal timing.
F	Above 1.00	> 80 sec/veh	> 50 sec/veh	LOS "F" is characterized by urban street flow at extremely low speeds. Intersection congestion is likely at critical signalized locations, with high delays, high volumes, and extensive queuing.

Source: Highway Capacity Manual, Transportation Research Board, 2000.
[1] ICU Method
[2] HCM Method
sec/veh = seconds per vehicle

e. Freeways

This study analyzes several mainline segments of SR-14 as well as ramp merge/diverge operations. These facilities are analyzed in accordance with procedures described in the HCM. The density in passenger

cars per hour per lane is calculated for the mainline and ramp junctions and then compared to thresholds in the HCM to identify the corresponding LOS.

Because the observed traffic volumes for a given freeway segment reflect traffic that is able to be served (not the demand), additional descriptions of travel times and congestion are provided to ensure that reported operations match field conditions.

f. Arterial Roads

The City of Santa Clarita Draft General Plan Circulation Element Update (2008) contains average daily traffic (ADT) volume LOS ranges for various roadway types. **Table 4.3-2, Arterial Roadway LOS Criteria,** shows the ADT range for each LOS grade for various roadway cross-sections.

Table 4.3-2
Arterial Roadway LOS Criteria

Facility Type	Number of Through Lanes	Maximum Average Daily Traffic (ADT)				
		LOS A	LOS B	LOS C	LOS D	LOS E
Limited Secondary Highway	2 lanes	12,000	13,500	15,000	16,500	18,000
Secondary Highway	4 lanes	24,000	27,000	30,000	33,000	36,000
Secondary Highway (Limited Access)	4 lanes	28,000	32,000	36,000	40,000	44,000
Major Highway	6 lanes	36,000	40,400	45,000	49,500	54,000
Major Highway	8 lanes	48,000	54,000	60,000	66,000	72,000

Source: City of Santa Clarita Draft General Plan Circulation Element Update (2008)

g. CMP Analysis

A Congestion Management Program (CMP) analysis was conducted in accordance with procedures described in the *2004 Congestion Management Program for Los Angeles County*. The program specifies the following analysis methods for qualifying intersections and freeways:

- Qualifying CMP arterial monitoring signalized intersections should be analyzed using the ICU methodology.
- Qualifying freeway mainline segments are to be analyzed using a simplified demand-to-capacity calculation, in which the freeway has a capacity of 2,000 vehicles per hour per lane.

The qualifying CMP intersections in the project study area are Sierra Highway/Sand Canyon Road, Sierra Highway/Soledad Canyon Road, and Sierra Highway/Placerita Canyon Road. The qualifying freeway segment in the study area is the segment of SR-14 north of Interstate 5 (I-5) to Newhall Avenue.

3. EXISTING CONDITIONS

a. Roadway System

This section describes the freeways, arterials, and local streets that would provide access to the proposed project and that serve as the study area. The study area is generally bounded by Sand Canyon Road on the east, Bouquet Canyon Road on the west, Sierra Highway on the north, and Placerita Canyon Road on the south. Three freeway interchanges on SR-14 are analyzed, as is SR-14 from Golden Valley Road to north of Sand Canyon Road. A total of 23 intersections were identified through traffic modeling for the analysis. These locations are shown on **Figure 4.3-1, Study Area**. Intersections No. 1, 11, 12, 15, 16, and 23 are presently located within unincorporated Los Angeles County (as described in **Section 3.0, Project Description**, the project also includes annexation of the properties surrounding Vista Canyon, which includes the County intersections referenced above). All other intersections are within the City of Santa Clarita. Intersections No. 3, 4, 14, 15, 22, and 23 are maintained by Caltrans.

The study area was selected based on the project's expected travel characteristics (i.e., location and number of project-added trips) as well as facilities susceptible to impact by the project. In addition, a project-only traffic assignment of the SCVCTDM was performed during the scoping phase to identify general directions of project-related travel and intersections that should be studied for potential impacts. A description of the study area roadways follows below.

(1) Antelope Valley Freeway

SR-14 (Antelope Valley Freeway) – is a north-south freeway that extends from I-5 in northern Los Angeles County through Santa Clarita and into the Antelope Valley. As noted below, traffic counts indicate that traffic levels on SR-14 diminish as the freeway extends north. Accordingly, the number of travel lanes is also reduced as it gradually narrows from 11 lanes just north of I-5 to 6 lanes north of Sand Canyon Road. It has a posted speed limit of 65 mph. SR-14 has a continuous High Occupancy Vehicle (HOV) lane in each direction throughout the study area. The HOV lane operates southbound from 5:00 to 9:00 AM and northbound from 3:00 to 7:00 PM. Outside of those hours, it functions as a general purpose lane. The following describes the cross-sections of SR-14 in the study area.

- North of I-5 – Northbound: five mixed-use and one HOV lane; Southbound: four mixed-use and one HOV lane. Average Annual Daily Traffic (AADT) is 169,000 vehicles.

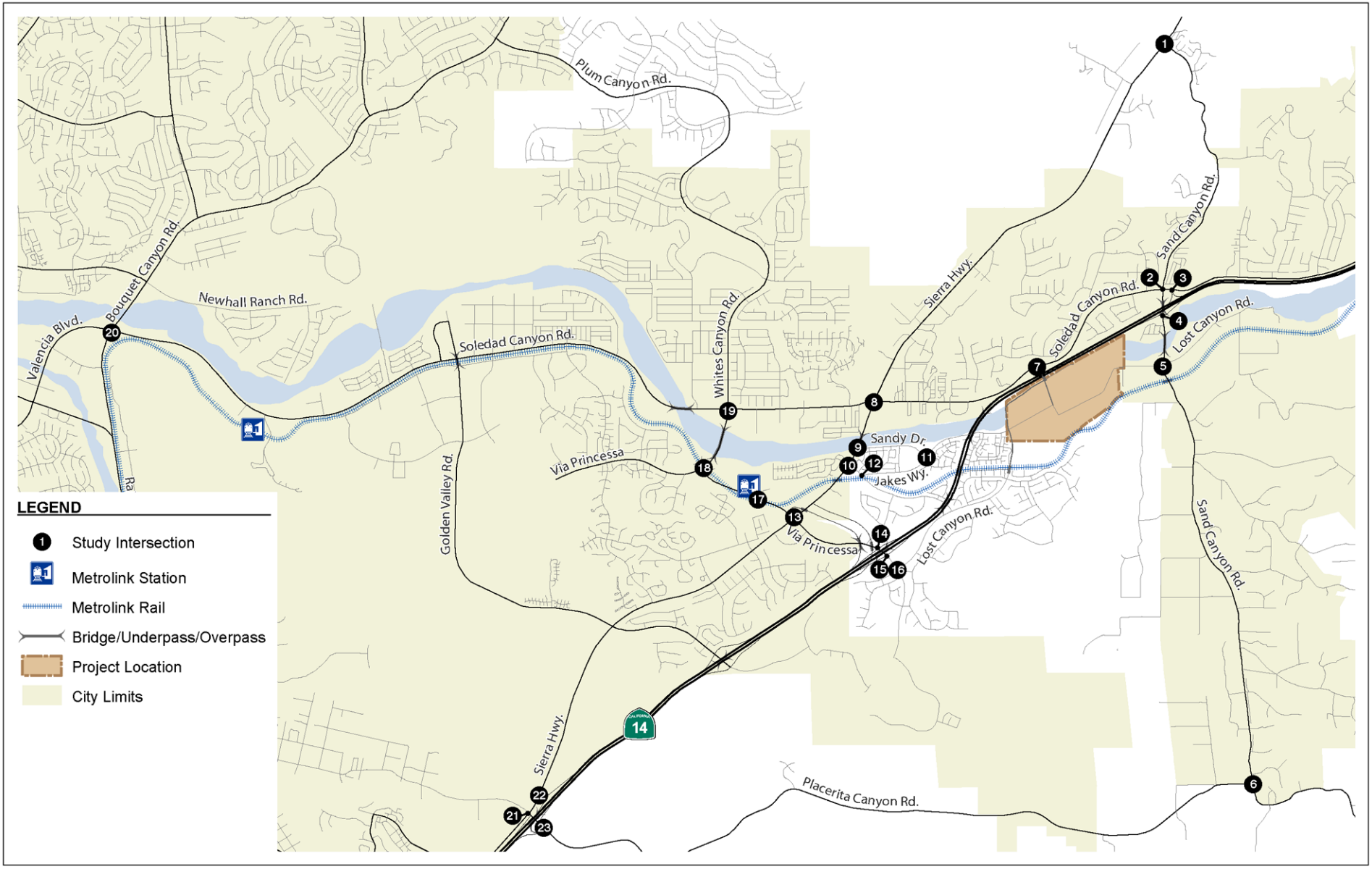
- North of Newhall Avenue (formerly San Fernando Road) – three mixed-use lanes and one HOV lane in each direction. AADT is 156,000 vehicles.
- Between Golden Valley Road and Via Princessa/Sierra Highway interchanges – three mixed-use lanes, one HOV lane, and one auxiliary lane in each direction. AADT is 148,000 vehicles.
- Between Via Princessa/Sierra Highway and Sand Canyon Road interchanges – three mixed-use lanes and one HOV lane in each direction. AADT is 118,000 vehicles.
- North of Sand Canyon Road interchange – two mixed-use lanes and one HOV lane in each direction. AADT is 107,000 vehicles.

The Caltrans 2007 Highway Congestion Monitoring Program (HICOMP) indicates that segments of SR-14 between I-5 and Via Princessa/Sierra Highway are congested (defined as travel speeds below 35 mph for at least 15 consecutive minutes) for multiple hours of the morning commute period in the southbound direction and for multiple hours of the evening commute period in the northbound direction.

(2) Major Highways

Major highways are six or more lane arterials designed for high mobility and limited vehicular access to driveways and cross streets. The following roadways within the study area are designated as major highways according to the City of Santa Clarita General Plan Update Draft Circulation Element (October, 2008):

- Soledad Canyon Road – parallels SR-14 in the eastern area of Santa Clarita as a four-lane major highway with a posted speed limit of 50 mph. It continues in a westerly direction into central Santa Clarita, widening to six lanes at Galeton Road with a posted speed limit of 45 to 50 mph. It continues as a six-lane arterial to Bouquet Canyon Road where it becomes Valencia Boulevard. The posted speed limit west of Sierra Highway ranges from 35 to 50 mph. The segment east of Galeton Road, which is closest to the project site, carried 24,500 ADT in November 2008.
- Lost Canyon Road (Via Princessa to Jakes Way) – is a four-lane divided major highway with a posted speed limit of 35 mph from Via Princessa to Medley Ridge Drive. East of this street, it has the same cross-section but is striped for only one lane in each direction. A bridge (of sufficient width to ultimately provide six lanes) across the Metrolink railroad tracks provides a temporary emergency access to the Colony Townhomes located on Jakes Way. This emergency access will be removed when Lost Canyon Road is extended. West of Via Princessa, it has a posted speed limit of 35 mph and extends in a southwesterly direction to connect with Golden Valley Road. In November 2008, Lost Canyon Road carried 8,900 ADT east of Via Princessa and 6,300 ADT east of Canyon Park Boulevard.



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SOURCE: Fehr & Peers - May 2010

FIGURE **4.3-1**

Study Area

112-024•09/10

- Sand Canyon Road (Soledad Canyon Road to Lost Canyon Road) – is a north-south major highway featuring two continuous travel lanes (plus turn lanes) in each direction south of Soledad Canyon Road and on the SR-14 overcrossing. South of the NB SR-14 ramp intersection, it gradually narrows to two lanes and is a two-lane bridge over the Santa Clara River. It has a posted speed limit of 45 mph. In November 2008, Sand Canyon Road carried 11,100 ADT north of Lost Canyon Road.

- Via Princessa (Lost Canyon Road to current western terminus) – is a four- to six-lane major highway. It is four lanes with a posted speed limit of 35 mph from Lost Canyon Road to Jason Drive, six lanes from north of Jason Drive to north of Sierra Highway, narrowing to four lanes as it continues in a northwesterly direction. It heads in a westerly direction west of Whites Canyon Road, terminating about 0.75 of a mile from Golden Valley Road. The posted speed limit ranges from 40 to 50 mph. In November 2008, Via Princessa carried 12,600 ADT south of SR-14.

- Sierra Highway – is a generally north-south regional travel route that parallels SR-14 from Palmdale/Lancaster southerly to I-5 where it becomes San Fernando Road. It is four lanes south of Via Princessa, six lanes between Via Princessa and Soledad Canyon Road, and four lanes north of Soledad Canyon Road, narrowing to two lanes north of Sand Canyon Road. Sections of Sierra Highway within the northerly portion of the study area are undivided (i.e., left-turns are made from the inside through lane). The posted speed limit is 45 mph. The segment south of Soledad Canyon Road carried 35,000 ADT in November 2008.

(3) Secondary Highways

Secondary highways are arterials planned for a maximum of four lanes and designed for high mobility and limited vehicular access to driveways and cross streets. The following roadways within the study area are designated as secondary highways:

- Sand Canyon Road (Soledad Canyon to Sierra Highway) – is a two-lane north-south arterial street. The southerly portion of this segment is separated by a two-way left-turn lane. The northerly portion is undivided. It has a posted speed limit of 45 mph. This segment carried 7,100 ADT in 2005.

- Canyon Park Boulevard – begins at Lost Canyon Road and extends under SR-14 to Sierra Highway. It is generally a four-lane divided arterial with a posted speed limit of 45 mph, with the exception of the segment between Sierra Highway and Jakes Way, which is two lanes with on-street parking. The Metrolink railroad tracks cross Canyon Park Boulevard at-grade less than 100 feet south of Jakes Way. This segment carries approximately 5,100 ADT (estimated from peak hour counts).

- Lost Canyon Road (west of Sand Canyon Road) – is a two-lane undivided roadway with a posted speed limit of 30 mph (25 mph when children are present). It currently terminates just west of La Veda Avenue. Sulphur Springs Community School and Pinecrest School are accessed from this street and described in more detail later in this chapter. This segment carries approximately 1,500 ADT (estimated from peak hour counts).

- Placerita Canyon Road (Sierra Highway to Sand Canyon Road) – is a four-lane divided arterial from Sierra Highway to just east of SR-14, where it becomes a two-lane undivided road. The segment east of SR-14 has a posted speed limit of 50 mph. This segment carries approximately 4,000 ADT (estimated from peak hour counts).

- Via Princessa (Lost Canyon Road to Golden Valley Road) – is a recently constructed four-lane arterial with a posted speed limit of 35 mph. This segment carries approximately 3,600 ADT (estimated from peak hour counts).

(4) Limited Secondary Highways

Limited secondary highways are two-lane streets with more limited mobility and greater access to adjacent land uses. These roadways are typically undivided and may include on-street parking. Limited secondary highways in the study area include:

- Jakes Way – extends easterly from Canyon Park Boulevard under SR-14 to provide access to the Colony Townhomes. It is a wide street with one lane in each direction (a center left-turn lane in some sections), and on-street parking. It has a posted speed limit of 40 mph. The segment east of Canyon Park Boulevard carried 5,500 ADT in November 2008.

- Sand Canyon Road (Lost Canyon Road to Placerita Canyon Road) – is a two-lane north-south undivided roadway. It has a posted speed limit of 45 mph. The northerly portion of this segment carried 9,300 ADT in November 2008.

b. Existing Levels of Service

(1) Intersections

Figures 4.3-2 and **4.3-3, Peak Hour Traffic Volumes and Lane Configurations – Existing Conditions** display the existing AM and PM peak hour traffic volumes at the 23 study intersections. Traffic counts were conducted at all study facilities in early to mid-November 2008. The figures also display the existing lane configurations and traffic control devices. As shown, 15 of the 23 study intersections are controlled by traffic signals. The study intersections were analyzed based on traffic volumes, lane configurations, and traffic control devices; existing traffic signal phasing and timings; and the presence of crosswalks, bicyclists, and pedestrians. **Table 4.3-3, Intersection Operations – Existing Conditions** displays the average delay and LOS for intersections analyzed using HCM procedures, and v/c ratio and LOS for intersections analyzed using the ICU methodology.

As shown in **Table 4.3-3**, the following intersections operate at LOS D or worse during one or both peak hours:

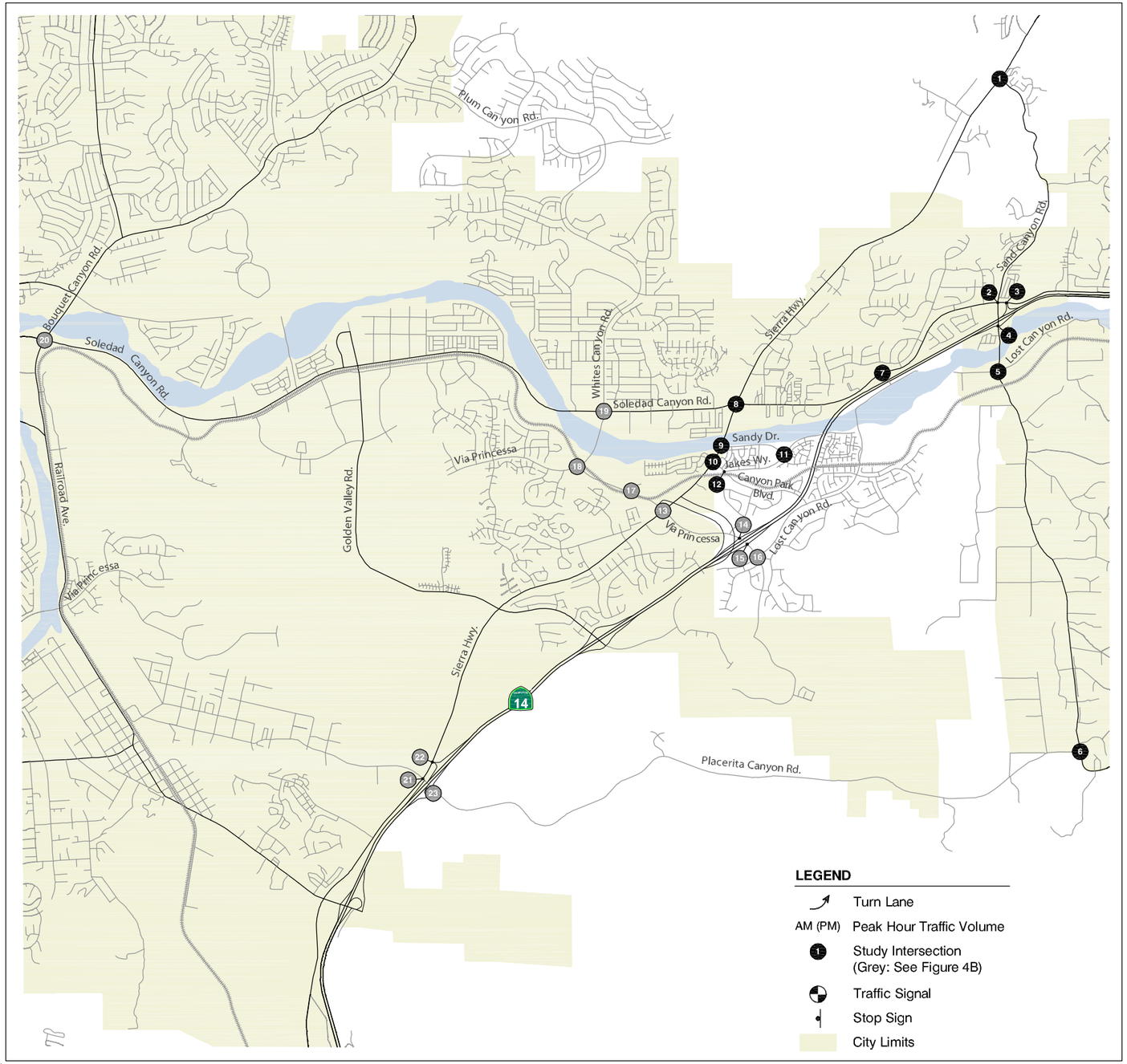
- No. 5, Sand Canyon Road/Lost Canyon Road (LOS D during AM peak hour)

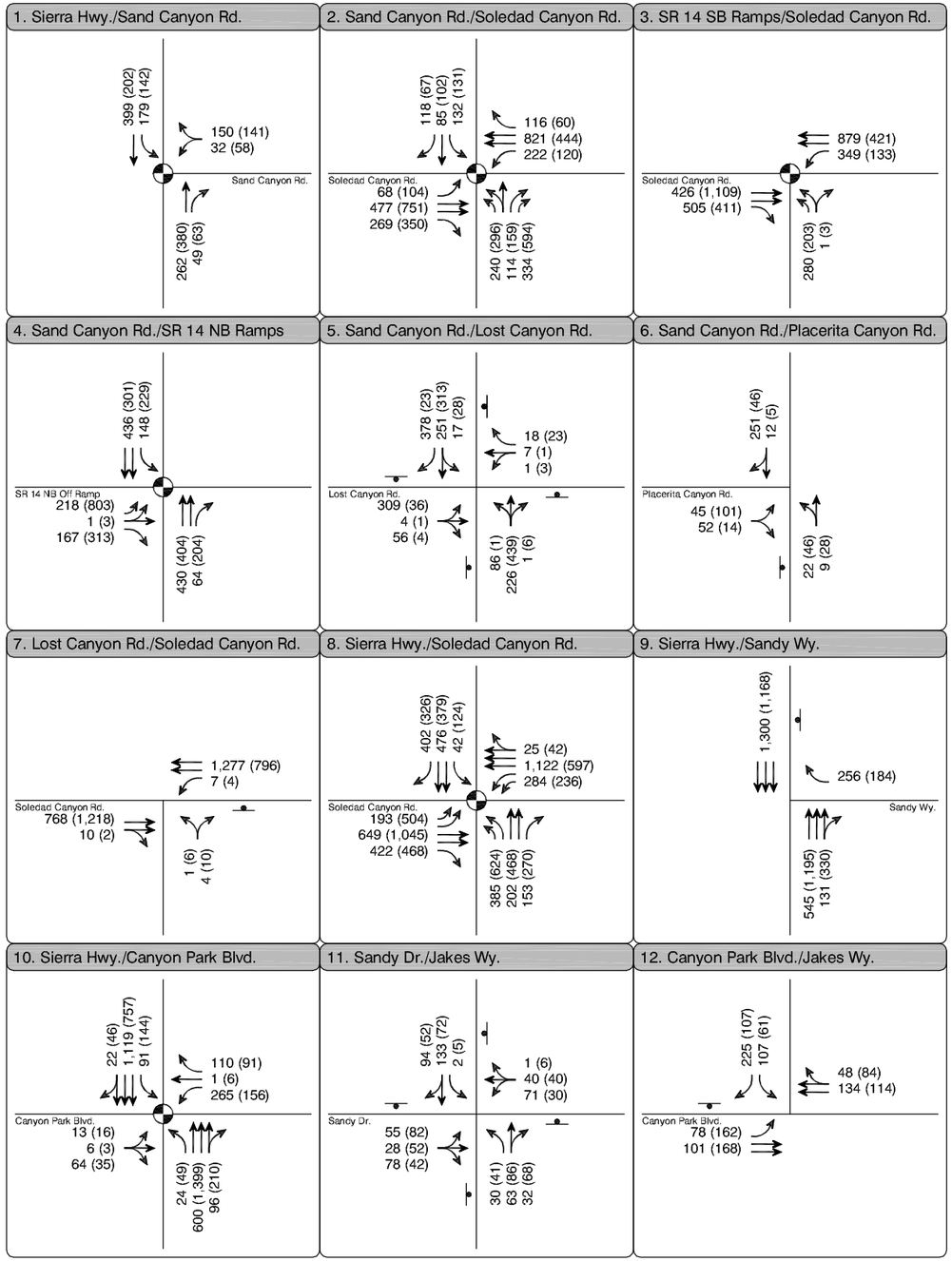
- No. 7, Soledad Canyon Road/Lost Canyon Road (LOS D during PM peak hour)

- No. 8, Sierra Highway/Soledad Canyon Road (LOS D during both peak hours)

- No. 13, Sierra Highway/Via Princessa (LOS D during PM peak hour)

- No. 19, Soledad Canyon Road/Whites Canyon Road (LOS D during both peak hours)





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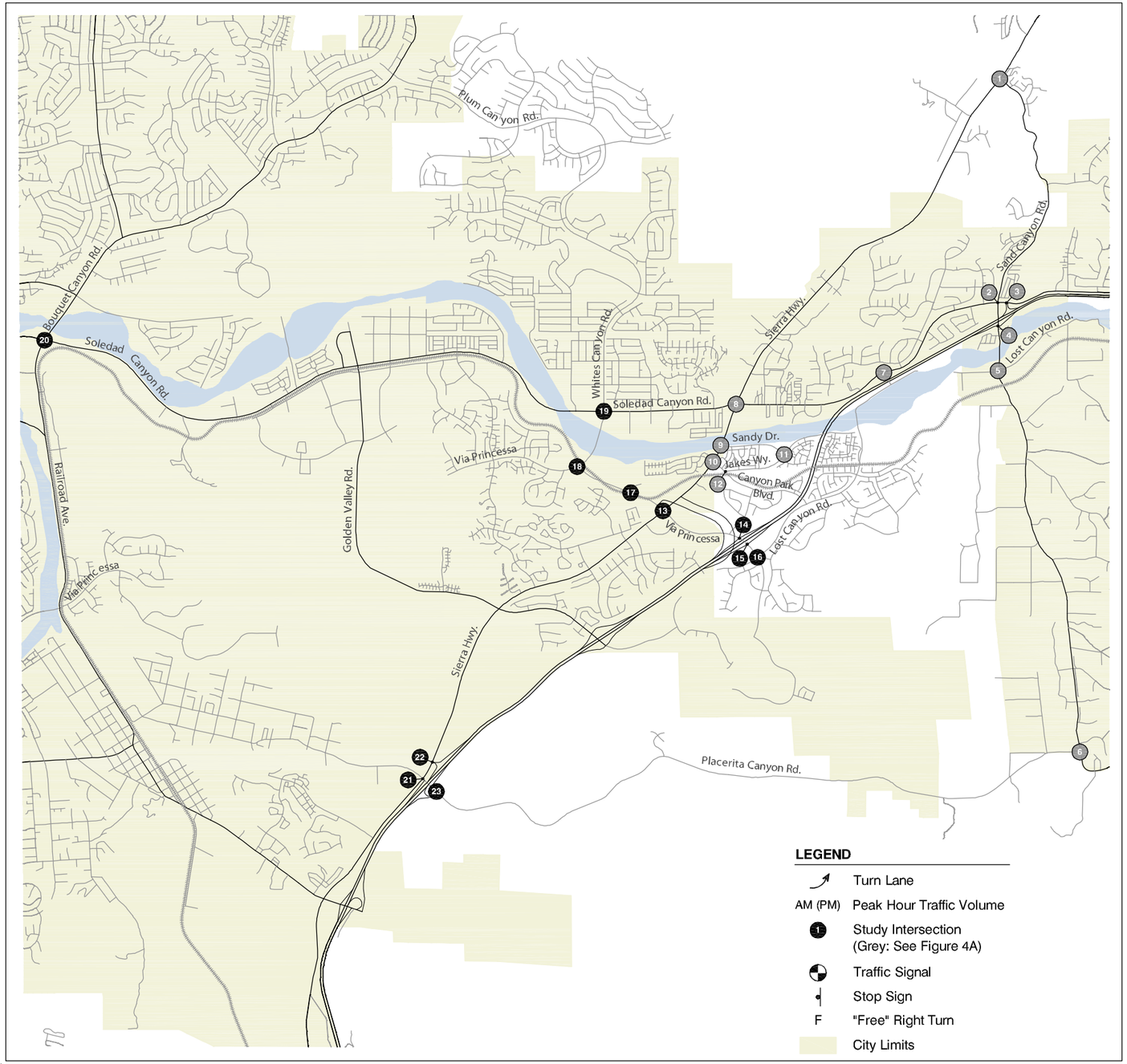
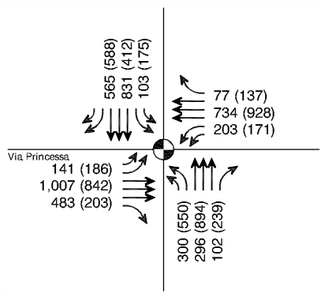
SOURCE: Fehr & Peers - May 2010

FIGURE **4.3-2**

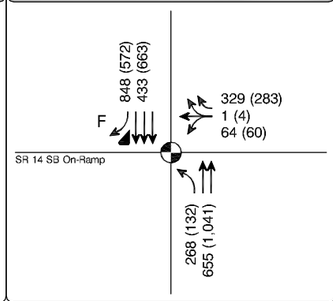
Peak Hour Traffic Volumes and Lane Configurations – Existing Conditions



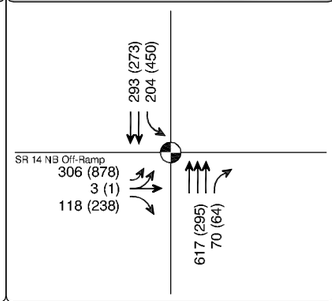
13. Sierra Hwy./Via Princessa



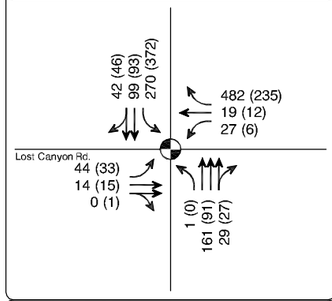
14. Via Princessa/SR 14 SB Ramps



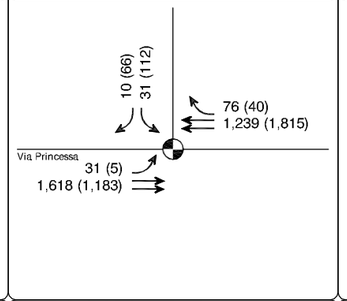
15. Via Princessa/SR 14 NB Ramps



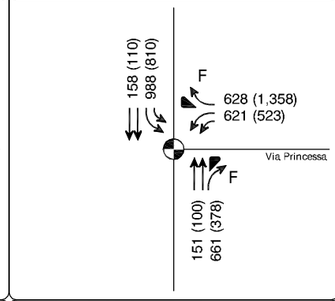
16. Via Princessa/Lost Canyon Rd.



17. Weyerhaeuser Rd./Via Princessa



18. Whites Canyon Rd./Via Princessa



19. Whites Canyon Rd./Soledad Canyon Rd.

20. Soledad Canyon Rd./Bouquet Canyon Rd.

21. Sierra Hwy./Placerita Canyon Rd.

22. Sierra Hwy./SR 14 SB Ramps

23. SR 14 NB Ramps/Placerita Canyon Rd.

NOT TO SCALE

SOURCE: Fehr & Peers - May 2010

FIGURE **4.3-3**

Peak Hour Traffic Volumes and Lane Configurations – Existing Conditions

- No. 20, Soledad Canyon Road/Bouquet Canyon Road (LOS D or E during both peak hours)
- No. 22, Placerita Canyon Road/SR-14 SB Ramps (LOS F during both peak hours)

All of the above intersections are located within the City of Santa Clarita; Intersection No. 22 is a Caltrans-maintained intersection.

The Sand Canyon Road/Lost Canyon Road intersection has been observed to operate in the LOS E/F range during the peak 15-minutes prior to classes starting at the Pinecrest and Sulphur Springs schools. However, when considering the entire peak hour, existing operations are at an acceptable LOS D.

Table 4.3-3
Intersection Operations – Existing Conditions

No.	Intersection	Traffic Control	AM Peak Hour Delay or V/C Ratio – LOS	PM Peak Hour Delay or V/C Ratio – LOS
1	Sand Canyon Road/Sierra Highway	Traffic Signal	0.49 - A	0.55 - A
2	Sand Canyon Road/Soledad Canyon Road	Traffic Signal	32 - C	34 - C
3	Soledad Canyon Road/SR-14 SB Ramps	Traffic Signal	23 - C	16 - B
4	Sand Canyon Road/SR-14 NB Ramps	Traffic Signal	12 - B	20 - C
5	Sand Canyon Road/Lost Canyon Road	All-Way Stop	27 - D	10 - A
6	Sand Canyon Rd./Placerita Canyon Road	Side-Street Stop	11 - B	11 - B
7	Soledad Canyon Road/Lost Canyon Road	Side-Street Stop	19 - C	33 - D
8	Sierra Highway/Soledad Canyon Road	Traffic Signal	37 - D	45 - D
9	Sierra Highway/Sandy Way	Side-Street Stop	17 - C	13 - B
10	Sierra Highway/Canyon Park Boulevard	Traffic Signal	21 - C	20 - C
11	Sandy Way/Jakes Way	All-Way Stop	11 - B	9 - A
12	Canyon Park Boulevard/Jakes Way	Side-Street Stop	14 - B	14 - B
13	Sierra Highway/Via Princessa	Traffic Signal	33 - C	38 - D
14	Via Princessa/SR-14 SB Ramps	Traffic Signal	18 - B	13 - B
15	Via Princessa/SR-14 NB Ramps	Traffic Signal	23 - C	28 - C
16	Via Princessa/Lost Canyon Road	Traffic Signal	0.64 - B	0.53 - A
17	Via Princessa/Weyerhaeuser Way	Traffic Signal	4 - A	16 - B
18	Via Princessa/Whites Canyon Road	Traffic Signal	8 - A	8 - A

No.	Intersection	Traffic Control	AM Peak Hour Delay or V/C Ratio – LOS	PM Peak Hour Delay or V/C Ratio – LOS
19	Soledad Canyon Road/Whites Canyon Road	Traffic Signal	40 - D	51 - D
20	Soledad Canyon Road/Bouquet Canyon Road	Traffic Signal	38 - D	70 - E
21	Placerita Canyon Road/Sierra Highway	Traffic Signal	20 - B	16 - B
22	Placerita Canyon Road/SR-14 SB Ramps	Side-Street Stop	>50 - F	>50 - F
23	Placerita Canyon Road/SR-14 NB Ramps	Side-Street Stop	11 - B	10 - B

Source: Fehr & Peers, Inc., 2010.
Note: ICU methodology was used for signalized intersections that are located in Los Angeles County, not directly adjacent to the City, pursuant to County requirements. HCM methodology was used for all unsignalized intersections and signalized intersections maintained by City of Santa Clarita or directly adjacent to the City and all Caltrans maintained signalized intersections.

(2) Two-Lane Roadways

Los Angeles County Traffic Impact Analysis Report Guidelines (Los Angeles County Department of Public Works, 1997) specifies that project impacts be evaluated on two-lane roadways. Thus, the following two-lane roadway segments were evaluated in accordance with standards and methodologies set forth in the guidelines:

- Sand Canyon Road south of Sierra Highway
- Lost Canyon Road east of Medley Ridge Drive
- Jakes Way east of Canyon Park Boulevard
- Sandy Drive east of Sierra Highway
- Placerita Canyon Road east of SR-14

Each of these segments currently operates at LOS C or better, according to the methodology described in the *Los Angeles County Traffic Impact Analysis Report Guidelines*.

(3) Freeways

Existing freeway mainline and ramp merge/diverge (ramp junction) operations were analyzed; the results are shown in **Table 4.3-4, SR-14 Operations – Existing Conditions.** The basic freeway segment analysis does not take into account demand conditions in excess of capacity or the influence of downstream queuing, which occurs on SR-14. Therefore, field observations and results of two travel time surveys were used to describe operations in the peak-direction for each peak hour. Average passenger car speeds of

less than 35 mph are associated with LOS F operations on a freeway segment. As shown in **Table 4.3-4,** the southbound direction of SR-14 between Sand Canyon Road and Golden Valley Road is reported as operating at LOS F during the AM peak hour (observed travel speed on this segment was less than 20 mph).

Table 4.3-4
SR-14 Operations – Existing Conditions

Freeway Facility	Analysis Method	AM Peak Hour Density – LOS	PM Peak Hour Density – LOS
Freeway Mainline Sections			
NB SR-14: Between Golden Valley Road and Via Princessa/Sierra Highway (Weave)	HCM	A	E
NB SR-14: Between Via Princessa/Sierra Highway and Sand Canyon Road		8 - A	24 - C
NB SR-14: Between Sand Canyon Road and Soledad Canyon Road		10 - A	33 - D
SB SR-14: Between Soledad Canyon Road and Sand Canyon Road	AM Peak Hour: HI-Comp Report and average of two travel time surveys PM Peak Hour: HCM	24 - C	10 - A
SB SR-14: Between Sand Canyon Road and Via Princessa		F	9 - A
SB SR-14: Between Via Princessa/Sierra Highway and Golden Valley Road (Weave)		F	B
Freeway Ramps			
SR-14 NB Off-Ramp/Sand Canyon Road	HCM (Lane Drop)	10 - B	28 - C
SR-14 NB On-Ramp/Sand Canyon Road	HCM	12 - B	34 - D
SR-14 SB Off-Ramp/Sand Canyon Road/Soledad Canyon Road	HCM	27 - C	13 - B
SR-14 SB On-Ramp/Sand Canyon Road/Soledad Canyon Road	HCM	24 - C	8 - A
SR-14 NB Off-Ramp/Via Princessa	HCM	11 - B	30 - D
SR-14 SB On-Ramp/Via Princessa	HCM	> 43 – F	14 - B

Source: Fehr & Peers, Inc., 2010.
Note: Ramps selected for analysis limited to those that would be used by the project to a significant degree.

c. Transit System

This section describes existing public transportation services (transit) in the study area. Transit consists primarily of the Metrolink commuter rail line and City of Santa Clarita bus service.

(1) Metrolink

Metrolink is a commuter rail service that operates in Southern California. The major hub is Union Station in downtown Los Angeles, where seven lines radiate outward from this terminus station. Metrolink provides service between Lancaster and Union Station on the Antelope Valley line, with three stops in the Santa Clarita area, including the Via Princessa station.

The Antelope Valley line primarily runs a peak period schedule with limited midday and evening service. On weekdays, the Via Princessa Station receives 11 Union Station–bound and 11 Lancaster–bound trains. For trains to Los Angeles, service spans from 4:52 AM (first train to stop at Via Princessa) to 6:49 PM (last train to stop at Via Princessa). For trains to Lancaster, service spans from 7:35 AM to 9:54 PM. Weekend service is less frequent. During the peak weekday periods, five Union Station–bound trains stop at Via Princessa in the AM compared to one in the PM. Two Lancaster bound trains stop at Via Princessa in the AM peak period while three stop in the PM peak period. Headways vary, but trains can be as frequent as every 30 minutes in the AM hours and every 40 minutes in the PM hours (peak direction only).

(a) Via Princessa Metrolink Station

The Via Princessa station provides commuter rail access to the eastern and northeastern portions of the Santa Clarita Valley; the Santa Clarita and Newhall stations serve the western, southern, and northern areas of the City. This station preference was determined based on surveys taken in November 2008 of Metrolink riders boarding trains at the Via Princessa station during the AM peak period. The survey found that over 80 percent of surveyed riders reside in ZIP codes located north or east of the station and typically come from nearby residential locations. Long distance commuting to the station, except in isolated cases, was not observed. The survey also determined that downtown Los Angeles and its environs (54 percent) were the most common work destinations, followed by Burbank (38 percent) and Glendale (8 percent).

With respect to parking, the Via Princessa station has 392 parking spaces (378 regular, 14 disabled). Parking is free. Based on November 2008 surveys, the number of occupied parking spaces at the station was 302 at 7:00 AM, 338 at 8:00 AM, and 362 at 9:00 AM.

As to ridership numbers, Via Princessa ridership data was obtained from Metrolink for June, July, and August 2008. Because of the functionality of Metrolink service, only AM peak period boardings and alightings are recorded on a station-by-station basis. Southbound trains depart the Via Princessa station at 4:52, 6:02, 6:42, 7:15, 7:47, and 8:47 AM. As noted above, by 9:00 AM the majority of the parking lot is

full. During the weekday AM peak period, an average of 359 boardings and 16 alightings occur at the station.

During the AM peak period, southbound trains pick up a significant number of additional passengers at the Santa Clarita (531), Newhall (389), and Sylmar (361) stations. These three downstream stations all add riders that cause certain trains to be at or near capacity. Metrolink has indicated that three AM trains (the 6:02 AM, 6:42 AM, and 7:15 AM trains that stop at Via Princessa) and two PM trains currently are nearing or reaching ridership capacity. In the AM peak period, alightings are greater than boardings at the Burbank station, where capacity limitations are alleviated. There are no issues regarding weekend capacity.

Metrolink ridership capacity varies, but it is typically between 405 and 685 seated passengers. According to Metrolink, during the weekday AM peak period, the first southbound train to stop at Via Princessa has a seated capacity of 405 passengers, the next three trains have seated capacities of between 545 and 560 passengers, and the final train has a seated capacity of 685 passengers.

Reverse rider capacity (trains traveling opposite the peak direction) is not measured by Metrolink. Accordingly, it is assumed that sufficient reverse rider capacity is available during both the AM and PM peak periods.

(b) Metrolink Versus Auto Travel Time Comparison

GPS auto travel time runs were conducted on SR-14 on two weekdays (in the peak-period, peak-travel direction) in November 2008 for the purpose of comparing auto and Metrolink travel times. No unusual traffic incidents were reported during any of the surveys. The following summarizes each route and the findings:

- Route #1: Southbound SR-14 beginning at the Palmdale Metrolink station at 6:30 AM, stopping at the SR-14/Sand Canyon Road interchange (Vista Canyon vicinity), and then continuing to the Burbank Metrolink station.

  Finding: The 25-mile first leg of this trip took an average of 32 minutes, while the 28-mile second leg took an average of 66 minutes.

- Route #2: Northbound SR-14 beginning at the Burbank Metrolink station at 5:00 PM, stopping at the SR-14/Sand Canyon Road interchange (Vista Canyon vicinity), and then continuing to the Palmdale Metrolink station.

  Finding: The first leg of this trip took an average of 57 minutes, while the second leg took an average of 31 minutes.

In comparison, a Metrolink train would take 42 minutes to travel between the Burbank station and the proposed Vista Canyon station. Travel from the proposed station to the Palmdale station would take about 44 minutes.

Based on these findings, Metrolink would provide a 15 to 25 minute travel time savings compared to travel by auto during the peak hour of the peak travel direction between the proposed station and the Burbank station. The time required to travel to/from the station and wait for the train would consume a portion of this travel time savings. Nonetheless, the Metrolink transit service would provide a time-competitive alternative to the automobile for peak-period, peak-direction commuting to/from the south on SR-14.

The above conclusion does not presently hold for travel between the proposed station and the Palmdale station given the lack of freeway congestion that would otherwise increase travel times. Although relative travel time savings is an important factor in the decision to select transit over the automobile, other factors such as cost, convenience, and free time during ride also influence the mode selection and therefore it is anticipated that the Metrolink system would be utilized by some Antelope Valley residents employed in the Santa Clarita Valley, including the Vista Canyon office uses. It is also worth noting that under cumulative conditions, the segment of SR-14 between Palmdale and Vista Canyon will become more congested, making travel via Metrolink more time-competitive.

(c) Future Rail Service

The State of California has been studying the feasibility of a statewide intercity high speed rail network since the early 1990s. Various alignments have been reviewed by the California High Speed Rail Authority for the proposed 700-mile route linking the cities of Sacramento, San Francisco, Los Angeles, and San Diego. A preliminary alignment could impact a portion of the project site; an EIR for the rail project is being prepared that will analyze any related potentially significant impacts. The proposed rail system would use steel wheels on steel rails and be powered by electricity, with top speeds of over 200 miles per hour. One segment of the proposed route would extend from Union Station in Los Angeles to Bakersfield, through the San Fernando Valley, Santa Clarita, the Antelope Valley, and Tehachapi Pass. Under this scenario, the closest station serving Santa Clarita would likely be in Sylmar.

(2) City of Santa Clarita Bus Service

Santa Clarita Transit provides fixed route transit bus service throughout the City and in adjacent unincorporated areas. The system encompasses eight local-serving routes as well as four "Station Link" routes that serve the Santa Clarita Metrolink station. Commuter express bus service to Los Angeles employment destinations is also provided.

As shown on **Figure 4.3-4, Existing Transit Facilities,** Routes 1, 2, 5, and 6 operate in the vicinity of the project site. Currently, no bus stops exist within 0.25 mile of the project site. The closest existing stop (Route 6) is at the Soledad Canyon Road/Lost Canyon Road intersection. Routes 1, 2, and 5 stop at the Sierra Highway/Soledad Canyon Road intersection. The following describes each of these transit routes:

- Routes 1 and 2 offer a connection to the Via Princessa Metrolink station. This dual route provides service every 20 to 30 minutes along Sierra Highway in the vicinity of the Via Princessa Metrolink station from approximately 4:00 AM to 11:00 PM on weekdays; 30-minute service from approximately 7:00 AM to 11:00 PM on Saturdays; and 30 minute service from approximately 8:00 AM to 9:00 PM on Sundays and holidays. These routes serve McBean Regional Transit Center, Industrial Center, Commerce Center, Newhall Metrolink, City Hall, Valencia Town Center, River Oaks Shopping Center, Canyon High School, Sierra Vista Jr. High, and Plum Canyon. For the period of October through December 2007, average weekday ridership on these combined routes was about 3,100 boardings.

- Route 5 offers a schedule and route structure similar to Route 6 except for a split in the eastern portion of the service area. In this area, Route 5 travels along Sierra Highway instead of Soledad Canyon Road and also serves the College of the Canyons Canyon Country Campus. From October through December 2007, average weekday ridership on this route was about 1,025 boardings.

- Route 6 provides service closest to the project site along Soledad Canyon Road. This route provides 30- to 40-minute peak and 40- to 50-minute off-peak service from approximately 4:30 AM to 11:00 PM on weekdays; 30- to 60-minute service from approximately 7:00 AM to 10:30 PM on Saturdays; and 30- to 60-minute service from 7:00 AM to 8:30 PM on Sundays. The route serves Shadow Pines, Aquatics Center, Bowman High School, Santa Clarita Metrolink, McBean Regional Transit Center, Valencia Town Center, Henry Mayo Newhall Memorial Hospital, Hart High School, Placerita Junior High, Newhall Metrolink, Valencia Market Place, Stevenson Ranch, and Sunset Pointe. From October through December 2007, average weekday ridership on this route was about 2,370 boardings.

(3) General Travel Behavior of Transit-Oriented Developments

A substantial amount of research has been conducted on the topic of transit-oriented development (TOD) travel behavior. This section highlights the key findings of several recent research studies that are applicable to the proposed project's travel characteristics. Although a substantial amount of analysis at TODs has been conducted, this review focuses on those TODs located on transit lines similar to Metrolink in terms of transit service headways and land uses at nearby stations. The findings summarized by topic area are below.

(a) Transit Mode Share by User

A 2004 research paper entitled "*Travel Characteristics of Transit-Oriented Development in California*" by Cervero, Lund, and Willson, incorporated here by reference, analyzed travel behavior of TOD residents,

employees, and retail patrons at various TODs located on rail transit lines in Northern and Southern California. The following summarizes some key findings from that research:

- Of residents surveyed on the Metrolink, Coaster, and Caltrain commuter rail lines (5 different locations), approximately 16 percent took rail transit and 2 percent took the bus for their work trip.
- Of workers at office buildings near rail stations, 12 percent traveled to work by rail transit.
- Of hotel workers at two hotels near rail stations, 41 percent traveled to work by rail transit, whereas no hotel guests did.
- Of 1,259 retail patrons surveyed at three shopping facilities near rail stations in California, 13 percent had arrived by rail transit.

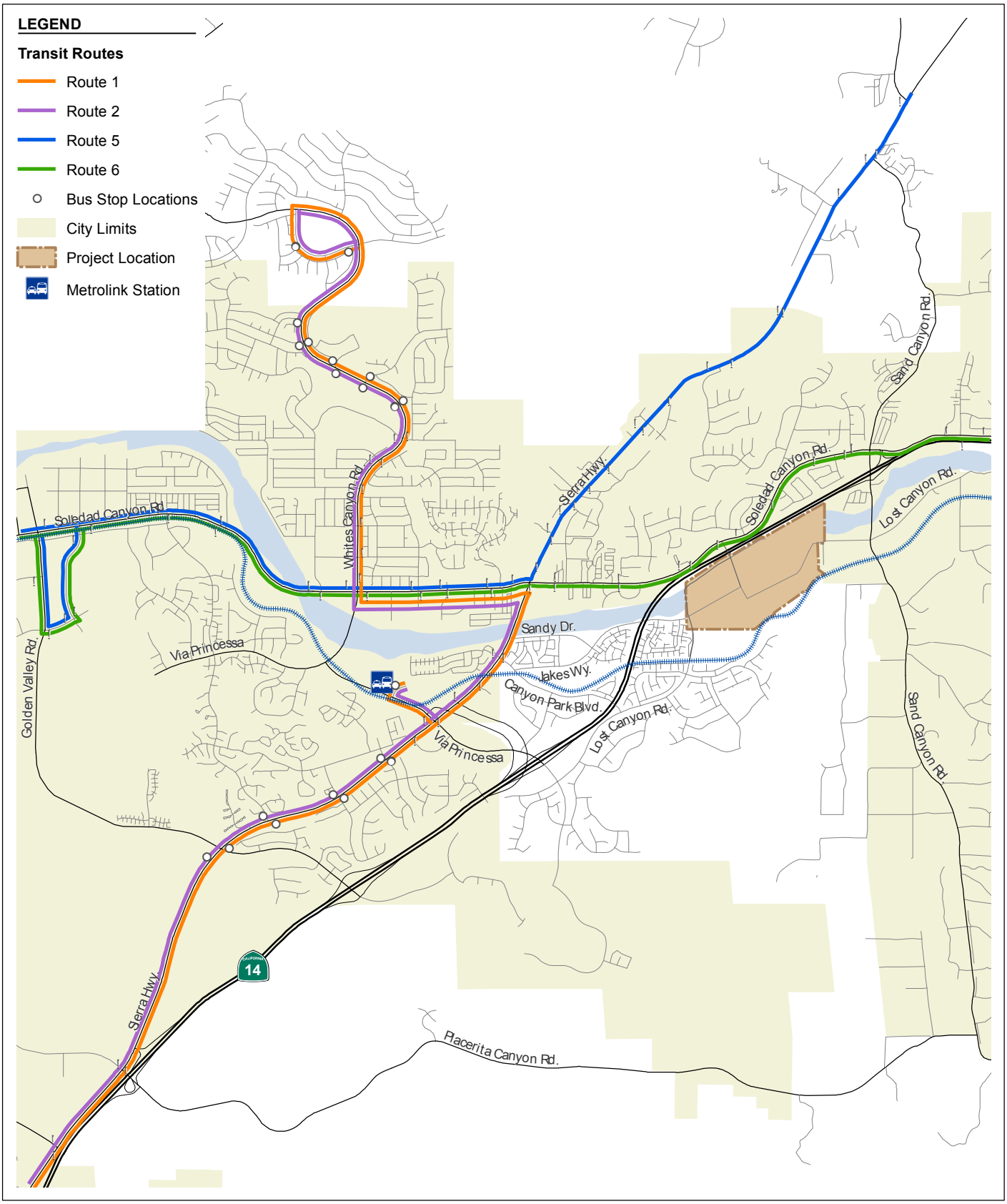
The research also found that levels of transit usage varied significantly by region and rail type. In general, TODs located closer to central business districts or adjacent to rail systems with more frequent headways tended to have greater levels of ridership.

A 2004 study entitled *Reconnecting America's Center for Transit-Oriented Development,* by the Center for Transit Oriented Development, incorporated here by reference, found that commuters in transit zones are much more likely to use alternative forms of transportation, and the size and speed of the rail systems is a significant determinant of whether TOD households use cars or transit. In Southern California, 16 percent of work trips in transit zones were made by transit, whereas 5 percent of work trips were made by transit in the metro area.

(b) Effects of Transit Service Headways

Many researchers believe that transit service headways (i.e., the time between trains) of 10 to 15 minutes during most of the day are ideal to support a transit lifestyle. However, in recognition of capital and operating costs associated with such frequencies, peak headways of 20 minutes and off-peak headways of 30 minutes are often recommended.

Current Metrolink service frequencies will support moderate levels of ridership during peak periods (12 to 18 percent for TOD residents, employees, and retail patrons), but lower levels during off-peak periods. A study entitled *Peak and Off-Peak Frequencies, Out of Pocket Costs* (EcoNorthwest, 1991) estimated that a 10 percent increase in off-peak transit frequencies would cause an average increase in ridership of 7 percent.



NOT TO SCALE

SOURCE: Fehr & Peers - May 2010

FIGURE **4.3-4**

Existing Transit Facilities

(c) Importance of Travel Times on TOD Commuting Habits

Not surprisingly, a number of different studies have concluded that the relative travel time provided by transit versus auto is a significant factor in the mode share decision. This travel time comparison is more important than other measures such as system connectivity, "track miles," and number of stations.

In this case, Metrolink will provide a time-competitive alternative to the automobile for peak hour (directional) travel between the project site and destinations in Burbank, Glendale, and Union Station. Based on calculated auto versus transit travel times, Metrolink would provide a 15- to 25-minute travel time savings during the peak hour of the peak travel direction between the proposed station and the Burbank station.

(d) Benefits of Connecting Bus Service

Thompson & Matoff (2000) concluded that TODs with robust connecting bus service improves ridership; the provision of connecting bus service enlarges a rail system's catchment area. In this case, the project includes a City bus transfer station, which will tend to increase rail ridership at the proposed station and decrease external vehicle trips.

(e) Changes in Travel Patterns over Time Within TODs

According to the Cervero, Lund, & Willson research paper, those that live in TODs longer tend to use transit most often. Of those living in TODs for 10 or more years, 29 percent used transit for their "main" home-based work trip; residents living in TODs less than 5 years used transit only 17 percent for their "main" home-based work trip. Thus, higher levels of transit usage by project residents are expected 10 or more years after the project is constructed versus opening day.

(f) TOD Household Sizes

TODs often have smaller household sizes and fewer children than comparable developments in the same region. The Center for Transit-Oriented Development reports that in 2025, about 32 percent of households will have one or more children. However, in TODs this proportion will be closer to 21 percent. As evidence, a CTOD study of 5,304 residents in 26 housing projects near rail stations found that 83 percent of respondents lived in one- or two-person households. Fewer persons means fewer vehicle trips.

(g) Effects of Built Environment Variables on Trip Generation

A number of research efforts over the past decade have sought to quantify the effects of the built environment "D"s on travel behavior. The "D"s are:

- Density – measured in terms of persons, dwelling, or jobs per acre.
- Diversity – refers to the land use mix and the degree to which they are "balanced."
- Design – includes street network characteristics, sidewalk coverage street widths, block size, number of intersections per square mile, and other physical variables.
- Destination Accessibility – refers to the number of jobs or other attractions reachable in a given travel time.
- Distance to Transit – is the distance between a home or job and the nearest rail station or bus stop via the shortest street, bicycle, or pedestrian route.

Research by Ewing and Cervero (2001) developed generalized elasticities that quantified the effects of local density, diversity, and design on vehicle trips.[1] In this case, even if bus or rail service was not provided to the project site, the proposed project's density, diversity of land uses, and design (to accommodate non-auto travel modes) will result in reductions in vehicle trips when compared to the "standard trip rates" used in the SCVCTDM and *Trip Generation* (ITE, 2003).

(h) Observed Trip Rates at TODs

A published paper entitled *"Effects of TOD on Housing, Parking, and Travel"* (Transit Cooperative Research Program 128, Arrington and Cervero, 2008), presents trip generation studies at two apartment TODs in lower-density settings in the Pennsylvania (Philadelphia) and New Jersey (Newark) regions. Both apartment complexes are located within 0.25 mile of a commuter rail line and varied in height from two to four stories; much more similar to what is proposed with the project. These multi-family complexes were observed to generate an average of five auto trips per day per dwelling unit, with 0.38 trips per unit during the AM peak hour and 0.51 trips per unit during the PM peak hour. These rates are 25 percent lower than the ITE (LU Category 220 Low Rise Apartments) rate for daily and AM peak hour conditions, and 18 percent lower than the corresponding PM peak hour rate used in this analysis.

Lastly, a June 2009 article in the ITE Journal entitled *New Transit Cooperative Research Program Research Confirms Transit-Oriented Developments Produce Fewer Auto Trips* (Arrington & Sloop), concluded that existing TODs generate approximately 50 percent fewer automobile trips than conventional developments. People living and working in TODs were found to walk and use transit more and own fewer cars.

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1 A negative 5 percent density elasticity would mean that a doubling of a neighborhood's density would result in a 5 percent reduction in vehicle trips, all other things being equal.

d. Bicycle/Pedestrian System

The City of Santa Clarita is an active promoter of non-motorized transportation modes, as is evidenced by its adoption in June 2008 of a Non-Motorized Transportation Plan. Bicycle and pedestrian facilities are part of the existing transportation environment and continue to play a key role in future development. **Figure 4.3-5, Existing Bicycle Facilities and Trails,** shows the existing bicycle facilities in the vicinity of the project site.

The following describes the different classifications of bicycle facilities:

- Class I Bike Path – an exclusive, two-way path for bicycles that is completely separated from a street or highway.
- Class II Bicycle Lane – signed and striped one-way lanes on streets or highways, typically at the edge of the pavement. Bike lanes provide a demarcated space for bicyclists within the roadway right-of-way.
- Class III Bike Route – bicycles share the right-of-way with vehicles; the routes may be signed, but they are not exclusively striped for use by cyclists.

The Santa Clara River Trail Class I bike path begins at the northern boundary of the project and parallels the Santa Clara River westerly to Whites Canyon Road and beyond. Class I paths are also provided along segments of Soledad Canyon Road, Golden Valley Road, and Sand Canyon Road. Class II bicycle lanes are present on Soledad Canyon Road west of Sand Canyon Road.

Santa Clarita's existing pedestrian network is comprised of sidewalks, paseos, and multi-use trails. Within the immediate project vicinity, pedestrian facilities are limited to sidewalks on portions of streets and crosswalks at intersections.

4. REGULATORY SETTING

a. County

(1) Congestion Management Program

The CMP was enacted by the California Legislature in 1989 to improve traffic congestion in urban areas. The program became effective with the passage of Proposition 111 in 1990, which also increased the State gas tax. Funds generated by Proposition 111 are available to cities and counties for regional road improvements, provided these agencies are in compliance with CMP requirements. The intent of the legislation was to link transportation, land use, and air quality decisions by addressing the impact of local growth on the regional transportation system. State statute requires that a congestion management

program be developed, adopted, and updated biennially for every county that includes an urbanized area, which shall include every city and county government within that county. Therefore, the City of Santa Clarita and County of Los Angeles must comply with CMP requirements in developing a circulation plan for the Santa Clarita Valley.

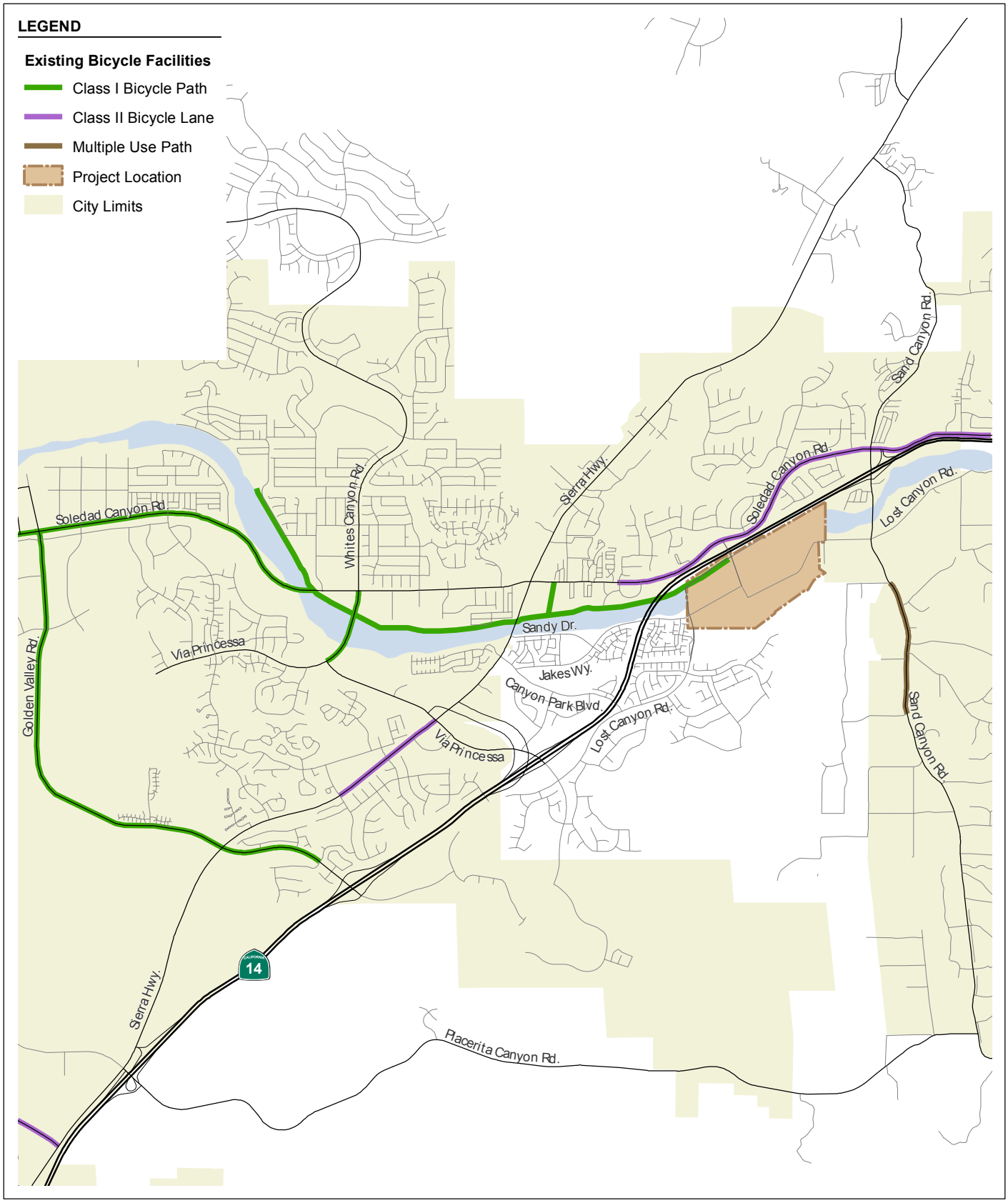
Under this legislation, regional agencies are designated within each county to prepare and administer the CMP for agencies within that county. Each local planning agency included in the CMP has the following responsibilities:

- Assisting in monitoring the roadways designated within the CMP system
- Adopting and implementing a trip reduction and travel demand ordinance
- Analyzing the impacts of local land use decisions on the regional transportation system
- Preparing annual deficiency plans for portions of the CMP system where LOS standards are not maintained

Los Angeles County Metropolitan Transportation Authority (Metro) is the CMP agency for Los Angeles County. Metro has the responsibility to review compliance with the CMP by agencies under its jurisdiction. For any agency out of compliance, after receiving notice and after a correction period, a portion of state gas tax funds may be withheld if compliance is not achieved. In addition, compliance with the CMP is necessary to preserve eligibility for state and federal funding of transportation projects.

Metro adopted the County's first CMP in 1992, and completed its most recent update in 2004. The statute requires that all state highways and principal arterials be included within the CMP roadway system. Within the Santa Clarita Valley, the following roadways are designated as CMP roadways:

- I-5 Freeway
- SR-14 Freeway
- Sierra Highway from Newhall Avenue (formerly San Fernando Road) to SR-14 at Red Rover Mine Road
- Magic Mountain Parkway from I-5 to Railroad Avenue (formerly San Fernando Road)
- Railroad Avenue/Newhall Avenue (formerly San Fernando Road) from Magic Mountain Parkway to SR-14
- SR-126 west of the I-5 freeway



NOT TO SCALE

SOURCE: Fehr & Peers - May 2010

FIGURE **4.3-5**

Existing Bicycle Facilities and Trails

The 2004 CMP noted that both the I-5 and SR-14 freeways within the Santa Clarita Valley demonstrate traditional commute patterns, with congestion flowing into Los Angeles and the San Fernando Valley in the morning and a reverse flow in the afternoon. Various strategies are available to local jurisdictions to mitigate CMP traffic impacts, including constructing new roadway improvements, managing traffic flow through signal improvements and trip reduction measures, and land use strategies such as locating higher density uses in proximity to public transit.

(2) Metro Bicycle Transportation Strategic Plan

The Metro Board adopted the Metro Bicycle Transportation Strategic Plan in 2006 to promote bicycle use throughout Los Angeles County. The Plan's vision is to make cycling a viable travel choice by promoting links between bicycle facilities and the transit network. The plan identifies four "bike-transit" hubs within the Santa Clarita Valley: the three Metrolink commuter rail stations, and the McBean Transfer Station. The Metro Bicycle Transportation Strategic Plan evaluated gaps in the inter-jurisdictional bikeway network connecting cities and unincorporated areas to destinations and transit stops. Within the Santa Clarita Valley, four gaps in the inter-jurisdictional bikeway network were identified with the Old Road, SR-126, Castaic/San Francisquito Creek, and Sierra Highway corridors.

b. City

(1) 2006 Transportation Development Plan

The City of Santa Clarita Transit's 2006 Transportation Development Plan (TDP) outlines a 58 percent expansion of transit services in the Santa Clarita Valley over the next several years. The TDP identifies major employers and other activity centers that are served by transit, including Six Flags Magic Mountain, Henry Mayo Newhall Memorial Hospital, the Valencia Industrial Center, the Valencia Commerce Center, and the Valencia Town Center. The Plan also identifies employers and destinations that are not yet served. According to the Plan, transit service is desirable at locations where very large employers or clusters of employment operate, or at locations that attract large numbers of visitors, students, children, the elderly, or the disabled. Under the proposed expansion of services, planned transit improvements include automated vehicle location equipment, passenger information systems, and automated ridership count equipment. Signage would be posted throughout the community to highlight bus arrival and departure times, which would also be accessible through personal computers and hand held computer devices.

A significant need identified in the TDP is improving the accessibility, convenience, and safety for bus stops. Some existing stops have no paved waiting areas for transit riders to stand while waiting for the bus, causing them to stand on unpaved shoulders of busy streets, or in landscaped areas where sprinklers

spray intermittently. The TDP recommends retrofitting bus waiting areas to provide pavement and connections to walkways, and ensuring that new development provides or contributes to adequate transit stop facilities as a condition of approval, where appropriate.

Additionally, the TDP identifies a need for development of a major (500+ spaces) park-and-ride lot at the intersection of Newhall Avenue and Sierra Highway. In addition to improving service at that location, a larger lot would increase parking capacity at the Newhall and Santa Clarita Metrolink Stations by diverting some bus riders from parking at the Metrolink stations. A second park-and-ride lot is also needed near the McBean Transfer Station, according to the plan. Funding sources for these improvements are being evaluated. The TDP also recommends the development of a permanent Metrolink station with transfer facilities to accommodate bus service, and increased park-and-ride spaces, and identifies a need for a future fourth station on the east side of the Santa Clarita Valley.

(2) 2008 Non-Motorized Transportation Plan

The City of Santa Clarita initiated preparation of a Non-Motorized Transportation Plan in 2006, with the general goal of reducing the number and length of vehicle trips through promotion of walking and biking as alternate modes of transportation. In undertaking a plan to increase non-motorized transportation, the City identified quality of life benefits such as reduced noise from traffic, better air quality, reduced fuel costs, and less time spent in traffic congestion. The City found that generally people are willing to walk to destinations within 0.25 mile, and bike to destinations within 0.5 mile. Other studies have found that people routinely walk 0.5 mile to access rail transit and surveys of bicycle commuters indicate that average bicycle commute distance can vary from approximately 4.5 miles to 7.5 miles.

The City's Non-Motorized Transportation Plan was adopted in June 2008. The Plan developed connected, safe, and convenient routes for cyclists and pedestrians. Policies and programs in the plan were designed to identify and prioritize bikeway needs; provide a plan for needed facilities and services; contribute to the quality of life through trail development; improve safety for cyclists and pedestrians; identify land use patterns that promote walking and cycling; improve access to transit; maximize funding opportunities for trails; and provide educational and incentive programs. The Non-Motorized Transportation Plan identified a need to accommodate on-street bicyclists through designation of bike lanes on arterials, wide curb lanes, loop detectors at signals, direct commuter routes, and protected intersection crossing locations. In addition, connections between residential areas and bikeways are needed to facilitate increased bicycle use for both recreational and commuting purposes. The Non-Motorized Transportation Plan identified the various needs for pedestrians, including sufficient crossing time at signalized intersection, visibility at crossings, continuity of walkways, adequate walkway

width, removing obstructions in the walkway, and providing buffer or separation from travel lanes. The Plan also included a Safe Routes to Schools Program for three elementary schools.

(3) Bridge & Major Thoroughfare Fee Districts

The City of Santa Clarita and County of Los Angeles have established a fee program to fund construction of new significant transportation infrastructure improvements. This program consists of six Bridge & Major Thoroughfare (B&T) Fee Districts, which provide an equitable financing mechanism by which new development within an identified area will share the cost of providing full mitigation improvements by payment of appropriate fees or construction of eligible improvements. Each of the B&T Districts within the study area is considered a full-improvement district, meaning that the collected fees, combined with other sources have been calculated to cover all needed improvements.

The proposed project is located within the Eastside B&T District. The Eastside and Via Princessa B&T Districts include a number of major infrastructure improvements within the study area. Specific improvements are listed during the discussion of impacts and mitigations. If a developer constructs District-identified improvements, that developer becomes eligible for District credit, which can be used to offset District fee payments.

5. PROJECT IMPACTS

a. Significance Threshold Criteria

In order to assist in determining whether a project will have a significant effect on the environment, the *State CEQA Guidelines*, Appendix G, identifies criteria for conditions that may be deemed to constitute a significant or potentially significant impact relative to transportation/traffic.

The City of Santa Clarita's Draft General Plan Update EIR (OVOV) incorporates essentially the same criteria; where different, City text is noted in [brackets]. According to Appendix G, potentially significant impacts on transportation and circulation would occur if the proposed project would:

- conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;

- conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways;

- result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- result in inadequate emergency access;
- result in inadequate parking capacity [generate a parking demand that exceeds municipal code–required parking capacity]; or
- conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities [cause a hazard or barrier for pedestrians or bicyclists].

Recent revisions to the *State CEQA Guidelines*, Appendix G, have removed from the above criteria the inquiry whether a project would result in inadequate parking capacity. Notwithstanding, the analysis presented herein considers the proposed projects impacts relative to parking capacity.

Additionally, based on policies contained in the City of Santa Clarita Local CEQA Guidelines (2005), the following thresholds should be used for determining the significance of impacts related to traffic and access:

(1) Roadway System[2]

Impacts to the roadway system are considered significant if the proposed project would:

a. Worsen an intersection maintained by the City of Santa Clarita from LOS D or better to LOS E or F.

b. Cause the following increase in delay at an intersection maintained by the City of Santa Clarita that operates (with the project) at LOS D or worse:
   - LOS D with the project: more than 4-second increase in delay is significant.
   - LOS E or F with the project: more than 2-second increase in delay is significant.

c. Cause the following increase in volume-to-capacity (v/c) ratio under cumulative conditions on a roadway in the City of Santa Clarita:
   - LOS D with the project: more than 0.02 increase in v/c ratio is significant.
   - LOS E or F with the project: more than 0.01 increase in v/c ratio is significant.

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2 Delay thresholds for impacts under LOS D or worse conditions calculated by converting the City's v/c ratio threshold into a corresponding delay threshold based on HCM delay range for given LOS category.

d. Cause the following increase in volume-to-capacity (v/c) ratio at an intersection or two-lane roadway in unincorporated Los Angeles County:

- LOS C pre-project: 0.04 or greater increase in v/c ratio is significant.
- LOS D pre-project: 0.02 or greater increase in v/c ratio is significant.
- LOS E or F pre-project: 0.01 or greater increase in v/c ratio is significant.

e. Cause a facility maintained by Caltrans to worsen from LOS E or better to LOS F.

f. Exacerbate LOS F operations on a facility maintained by Caltrans, causing the traffic demand to increase by 2 percent of capacity or more.[3]

g. Cause an intersection or two-lane roadway maintained by Los Angeles County to be significantly impacted in accordance with analysis procedures and thresholds set forth by the County.

(2) Transit System

Impacts to the transit system are considered significant if the proposed project would:

a. Interfere with existing or planned transit system service or facilities.

b. Cause an inconsistency with a policy related to transit in the City's Transportation Development Plan (adopted in 2006).

(3) Bicycle/Pedestrian System

Impacts to the bicycle and pedestrian system are considered significant if the proposed project would:

a. Eliminate or adversely affect an existing bikeway or pedestrian facility in a way that would discourage its use.

b. Cause an inconsistency with a relevant policy in the City's Non-Motorized Transportation Plan (adopted in 2008).

(4) Congestion Management Program

Impacts to CMP facilities are considered significant if the proposed project would increase the traffic demand by 2 percent of capacity at a CMP intersection or freeway facility, thereby resulting in or exacerbating LOS F conditions.

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[3] Based on the Congestion Management Program threshold of increased traffic demand by two percent of capacity.

b. Proposed Improvements

Full buildout of the project, which is estimated in 2015, would include the following land uses:

- 1,021 attached, condominium units (579 units would be for rent or for lease)
- 96 single-family dwelling units
- 646,000-square-feet of office space
- 164,000-square-feet of general retail space (including 10-screen theatre)
- 200-room hotel (140,000 square feet)

The project also includes annexation by the City of the Vista Canyon project site and other, mostly developed, properties surrounding the project site. In addition, the project would include a new Metrolink rail station, an adjacent bus transfer center, and a water reclamation plant. Class I bicycle/pedestrian/equestrian trails would be provided along the Santa Clara River, the southern project boundary, and at various locations within the project. Parks, paseos, open space areas, and other amenities would also be provided. **Figure 1.0-5, Vista Canyon Tentative Tract Map No. 69164** in **Section 1.0, Project Description**, shows the proposed roadway system that would serve the project. As shown, access would be provided by the following four routes:

- Lost Canyon Road (to Via Princessa);
- Jakes Way (to Canyon Park Boulevard);
- Vista Canyon Road (to Soledad Canyon Road)-including the Vista Canyon Road Bridge; and
- Lost Canyon Road (to Sand Canyon Road).

Lost Canyon Road would be a four- to six-lane major highway south of Jakes Way, a four-lane secondary highway between Jakes Way and Vista Canyon Road, and a two-lane residential collector street between Vista Canyon Road and Sand Canyon Road. Vista Canyon Road Bridge would be a two-lane limited secondary highway with an emergency lane, adjacent trail and sidewalk.

c. Trip Generation

Trip generation rates were obtained from *Trip Generation, 8th Edition* (Institute of Transportation Engineers, 2008). The resulting trip generation totals were then adjusted to account for the fact that a certain percentage of project residents will work and shop within the project community (i.e., take "internal" trips), rather than travel outside the community for these services (i.e., "external" trips). This is

a direct result of the diversity of land uses (i.e., residential, neighborhood retail, office) that will be developed as part of the project. The following shows how the project compares to two land use diversity ratios often recommended by economists:

- The project provides about 120 square feet of retail space per dwelling unit, with much of this retail being local-serving, such as a market, restaurants, and banks. This ratio is within the generally accepted "balanced" amount of 60 to 125 square feet of retail space per household. This suggests that much of the retail will serve the local area, but that some patrons will also come from the surrounding area.

- The project is likely to have a ratio of at least 2.5 jobs per household due to the substantial amount of office space on site. The professional office space is intended to satisfy many Santa Clarita residents' desire for locally based management, professional, sales, and related occupations. However, since a regionally balanced ratio is about 1.2 jobs per household, while a number of home-to-work trips will be internal, a substantial percentage of office trips are expected to be external as well.

To estimate the number of internal trips, adjustments of internally paired trips for complementary land uses were made. (See **Appendix 4.3**, Appendix C.) However, no pass-by trips reductions were taken for the retail uses; this is because the majority of the retail uses will be "local-serving" and are not located on existing streets from which "pass-by" can be taken.

(1) Phase 1

Phase 1 of the project would consist of the construction of 680 multi-family units, 25,000 square feet of retail, and the water reclamation plant. The proposed Metrolink Station, the extension of Vista Canyon Road over the Santa Clara River to Soledad Canyon Road, and the easterly extension of Lost Canyon Road from the project to La Veda Avenue would not be constructed or operational with Phase I. Phase 1 is estimated to be complete in 2012.

Table 4.3-5, Project Trip Generation – Phase 1 (Year 2012) displays the expected trip generation of Phase 1 of the project, and provides a summary of the gross trips, internal trips, and external vehicle trips. As shown, the internalized trips would cause the gross trip generation estimate to be reduced by about 15 percent under the Phase 1 (Year 2012) scenario. Please note that no reductions were taken under this scenario for transit since the proposed Metrolink station is not expected to be operational with Phase 1. As shown on **Table 4.3-5**, Phase 1 would generate approximately 350 external AM peak hour vehicle trips and 500 external PM peak hour vehicle trips.

Table 4.3-5
Project Trip Generation – Phase 1 (Year 2012)

		Trip Rate			Trips		
Land Use	**Units**	**Daily**	**AM Peak Hour**	**PM Peak Hour**	**Daily**	**AM Peak Hour**	**PM Peak Hour**
Condominiums/Townhomes	250 du	5.81	0.44	0.52	1,453	110	130
Apartments	430 du	6.65	0.51	0.62	2,860	219	267
Retail	25 tsf	61.46	1.37	5.79	1,536	34	145
			Gross External Trips		5,849	363	542
			Less Internal Trips[1]		461	10	44
			Net External Trips[2]		5,388	353	498

Source: Fehr and Peers, Inc., 2010.
du = dwelling unit; tsf = thousand square feet
[1] *Assumes that 15 percent of retail trips will be internal to project site.*
[2] *Since Phase I of the project does not include the Metrolink station or bus transfer center, all external trips are assumed to be made by vehicle.*

(2) Project Buildout

Table 4.3-6, Project Trip Generation – Buildout (Year 2015) provides the trip generation and a summary of the gross trips, internal trips, transit trips, and external vehicle trips at project buildout in 2015. At project buildout, the on-site Metrolink station is expected to be operational. The combined effects of internalized trips and transit trips would cause the gross trip generation estimate to be reduced by about 17 percent. As shown in **Table 4.3-6**, the project would generate approximately 1,540 external AM peak hour vehicle trips and 2,150 external PM peak hour vehicle trips at buildout.

In addition to the vehicle trips that would be generated by the residential and commercial components of the proposed project, the project also includes the construction of a new Metrolink commuter rail station and City bus transfer station, which would generate additional vehicle traffic. To estimate the number of additional vehicle trips that would be generated, data was obtained from the existing Via Princessa Metrolink station and other relevant data sources.

Table 4.3-6
Project Trip Generation – Buildout of the Vista Canyon Project (Year 2015)

		Trip Rate			Trips		
Land Use	**Units**	**Daily**	**AM Peak Hour**	**PM Peak Hour**	**Daily**	**AM Peak Hour**	**PM Peak Hour**
Condominiums/Townhomes	442 du	5.81	0.44	0.52	2,568	194	230
Apartments	579 du	6.65	0.51	0.62	3,850	295	359
Single-family dwelling units	96 du	9.57	0.75	1.01	919	72	97
Business Professional	646 tsf	11.05	1.56	1.37	7,140	1,009	884
Retail	131 tsf	61.46	1.37	5.79	8,174	182	770
Multiplex Movie Theater	10 screens	150	0	13.6	1,500	0	136
Hotel	200 rooms	8.17	0.48	0.59	1,634	97	118
				Gross External Trips	25,785	1,849	2,594
				Less Internal Trips	2,544	170	259
				External Trips – All Modes	23,241	1,679	2,335
				Less External Transit Trips – Metrolink/Bus	1,859	144	182
				Net External Trips – Vehicle	21,382	1,535	2,153

Source: Fehr and Peers, Inc., 2010.
du = dwelling unit; tsf = thousand square feet
*Note: The project includes a residential overlay zone, which could replace up to 250,000 square feet of office space with 233 multi-family residential units. With the overlay in place, the project would generate 15 percent fewer AM peak hour trips, 8 percent fewer PM peak hour trips, and 5 percent fewer daily trips. (See **Appendix 4.3**, Appendix C.)*
*See **Appendix 4.3**, Appendix C, for further details regarding methodological calculations.*

The Via Princessa station is estimated to currently generate approximately 70 vehicle trips during the AM peak hour, with approximately 80 percent of those trips inbound trips. Based on a number of factors, including projected household growth, the proximity of the proposed Vista Canyon station to regional travel routes, and worsening congestion on SR-14 and I-5, it is estimated the proposed station will have a 50 percent increase in transit demand and would generate approximately 110 vehicle trips during the AM peak hour. (See **Appendix 4.3** for additional information.)

With respect to PM peak hour trips, the existing Via Princessa station is estimated to currently generate approximately 200 vehicle trips during the PM peak hour, with approximately 85 percent of those trips outbound trips. Based on the estimated 50 percent increase in transit demand that would occur at the proposed Vista Canyon station, it is estimated the new station would generate approximately 300 PM peak hour vehicle trips.

As to total daily trips, based on parking occupancy and AM peak period boardings/alightings, it is estimated the Via Princessa station currently facilitates approximately 800 daily combined boardings/alightings, 750 of which arrived by vehicle and the remainder by bus. Of those arriving by vehicle, approximately 75 percent drove to the station (562.5) and 25 percent were dropped-off/picked-up (187.5). Therefore, these two trip types are estimated to generate approximately 940 daily trips (562.5 + 187.5 x 2 = 937.5). Adding 10 inbound and 10 outbound connecting City bus trips, the existing Via Princessa station is estimated to generate approximately 960 daily trips. Based on the estimated 50 percent increase in demand that would occur at the proposed Vista Canyon station, it is estimated the new station would generate approximately 1,430 external vehicle trips per day.

The following is a breakdown of the number of external daily vehicle trips that would be generated by the proposed project's various land uses:

- Residential uses: 6,100 daily trips
- Non-residential uses: 15,300 daily trips
- Metrolink (auto travel to/from station): 1,430 daily trips
- Bus Transfer Station: 50 daily trips

About two-thirds of trips to the office, retail, and entertainment uses in Vista Canyon are expected to come from locations within a 6-mile drive (i.e., from residences in the east side of the Valley). Many of these would be "replacement trips" otherwise made to other destinations in the west Valley or to the south.

The project's external vehicular trip generation depicted in **Table 4.3-6** is considered a conservative assessment (i.e., an overstatement of net external vehicle trips) due to the following reasons:

- The analysis assumed that 10 percent of the PM peak hour trips would remain internal to the site. In comparison, based on traffic counts conducted in September 2008, the Valencia Town Center, which is a mixed-use project similar in land use mix to the proposed project, is estimated to have a PM peak hour internalization percentage of 15 to 20 percent.
- Based on traffic counts conducted at Newhall Creekside, a mix of single-family and attached homes located in Valencia, the PM peak hour trip rate was 10 percent lower than the ITE rate utilized in the analysis.
- The Vista Canyon Parking Demand Analysis includes mode share data at residential projects located in commuter rail TODs. The rail/bus mode share for the Wilshire Promenade Apartments, which are located at a Metrolink station in Fullerton, was 16.7 percent. This study assumed 11 percent transit mode share for the residential uses.

- A mixed-use trip generation spreadsheet, prepared by the EIR traffic engineer in conjunction with several academic researchers and based on surveys of residents and employees in 240 mixed-use projects in six major metropolitan areas (Sacramento, Houston, Boston, Atlanta, Portland, and Seattle), estimates that trip reductions (through internal trips, walk trips, and transit trips) will reduce the gross trip generation by 25 percent.

- The level of internalization and mode share (20 percent) is lower than the observed trip rate reductions of 25 percent for two apartment TODs located on commuter rail lines in the Philadelphia, PA and Newark, NJ regions.

- According to information developed in conjunction with the City's draft General Plan Update Land Use Element, over half of employed Santa Clarita Valley residents travel out of the Valley to work, with the majority of those trips to the south. However, the jobs-to-household ratio in the Valley has steadily increased from 0.88 in 2000 to a current ratio of 1.3 to 1.5 jobs per household. The City and County plan to adopt a goal of achieving at least 1.5 jobs per household to reduce the total number of vehicle trips on the road network. An increase in the jobs per household ratio would further reduce total vehicle miles traveled.

(3) Cumulative Conditions

Table 4.3-7, Project Trip Generation – Cumulative Conditions (Year 2030) provides the project's trip generation and a summary of the gross trips, internal trips, transit trips, and external vehicle trips in 2030, the cumulative horizon year. The only difference between the project's trip generation in 2015, as shown in **Table 4.3-6**, and its trip generation in 2030 is that the percentage of external project trips made by transit under cumulative conditions is increased by 25 percent over the 2015 assumption. This is due to the expectation that transit trips will represent a greater percentage of trips for the cumulative year scenario due to greater transit patronage among 10-year or longer residents, likely increases in Metrolink service frequency, and increasing congestion on regional freeways. Research shows that of those persons living in TODs for 10 or more years, 29 percent used transit for their "main" home based work trip; residents living in TODs less than 5 years used transit only 17 percent for their "main" home-based work trips. As a result, the project's external vehicle trip generation would decrease by approximately 2 percent between 2015 and 2030 due to greater levels of transit (bus/rail) usage.

Table 4.3-7
Project Trip Generation – Cumulative Conditions (Year 2030)

		Trip Rate			Trips		
Land Use	Units	Daily	AM Peak Hour	PM Peak Hour	Daily	AM Peak Hour	PM Peak Hour
Condominiums/Townhomes	442 du	5.81	0.44	0.52	2,568	194	230
Apartments	579 du	6.65	0.51	0.62	3,850	295	359
Single-family dwelling units	96 du	9.57	0.75	1.01	919	72	97
Business Professional	646 tsf	11.05	1.56	1.37	7,140	1,009	884
Retail	131 tsf	61.46	1.37	5.79	8,174	182	770
Multiplex Movie Theater	10 screens	150	0	13.6	1,500	0	136
Hotel	200 rooms	8.17	0.48	0.59	1,634	97	118
				Gross External Trips	25,785	1,849	2,594
				Less Internal Trips	2,544	170	259
				External Trips – All Modes	23,241	1,679	2,335
				Less External Transit Trips – Metrolink/Bus	2,323	180	228
				Net External Trips – Vehicle	20,918	1,499	2,107

Source: Fehr and Peers, Inc., 2010.
du = dwelling unit; tsf = thousand square feet
*See **Appendix 4.3**, Appendix C, for further details regarding methodological calculations*

(4) Vehicle Miles of Travel

In conjunction with analysis of the project's potential effects on climate change and greenhouse gas emissions, the average weekday daily Vehicle Miles of Travel (VMT) associated with the residential portion of the project was calculated.

The VMT associated with residents of Vista Canyon can be broadly classified into three groups:

- Home-Based trips by project residents
- Non-Home-Based trips by project residents[4]
- Trips attracted to residential units[5]

4 As an example, a trip made by a resident from an off-site employment center to an off-site deli would be a non-home-based trip.

5 An example of this type of trip is a truck delivery to a project residence.

To estimate VMT, a spreadsheet was developed that utilizes data from various resources, including the SCVCTDM, NCHRP Report 365, the One Valley One Vision (OVOV) Land Use Element update, and the project's trip generation estimate. (See **Appendix 4.3**, Appendix G.) The calculations determined that each household in Vista Canyon is expected to generate an average of 58 VMT per day. Importantly, this estimate includes VMT associated with both home-based and non-home-based travel by Vista Canyon residents; this distinction is important because some VMT estimates in other studies and documents consider only home-based trips.

The following information provides perspective of the 58 VMT estimate:

- If the project site were developed consistent with the Draft OVOV residential land use designations, the residential units would generate an average of 71 VMT per day per household. This calculation assumes the site would yield up to 700 dwelling units with the same mix of single-family, condominiums, and apartment units as that of the proposed project. However, the site would not include non-residential uses, nor would it provide a Metrolink Station or bus transfer center on site.

- According to data obtained from the Metropolitan Transportation Commission, the nine-county San Francisco Bay Area generated an average of 58 VMT per household per day in 2006. The Sacramento Area Council of Governments estimates that the seven-county Sacramento region has an average daily VMT of about 52 miles per household. Comparable data for the Southern California region was not available.

- Given the above data and the fact that rural areas are known to generate greater VMT per household than urban areas, the statewide average VMT per household is estimated to range from 55 to 65 miles per day; an exact average is not known because it is difficult to measure directly.

The project's estimated average daily VMT of 58 miles per household does not consider the following factors, which tend to reduce VMT; as a result, the VMT estimate for the proposed project is considered conservative.

- Research shows that auto ownership levels in TODs are lower than region-wide averages; fewer vehicles/drivers per household are linked to reduced levels of VMT.

- TODs often have smaller household sizes and fewer children than comparable developments in the same region. Again, these factors are linked to reduced VMT.

- Research suggests that developments that are dense and have supportive non-motorized design elements (e.g., connections to bicycle paths, grid streets, etc.) generate less VMT per household than traditional low-density projects.

As previously noted, the analysis presented in this section assumes fairly low levels of transit use and internal trip-capture to ensure that project impacts on the surrounding roadways are not understated. These assumptions result in greater numbers of off-site vehicle trips per day, which translate into higher VMT.

d. Trip Distribution and Assignment

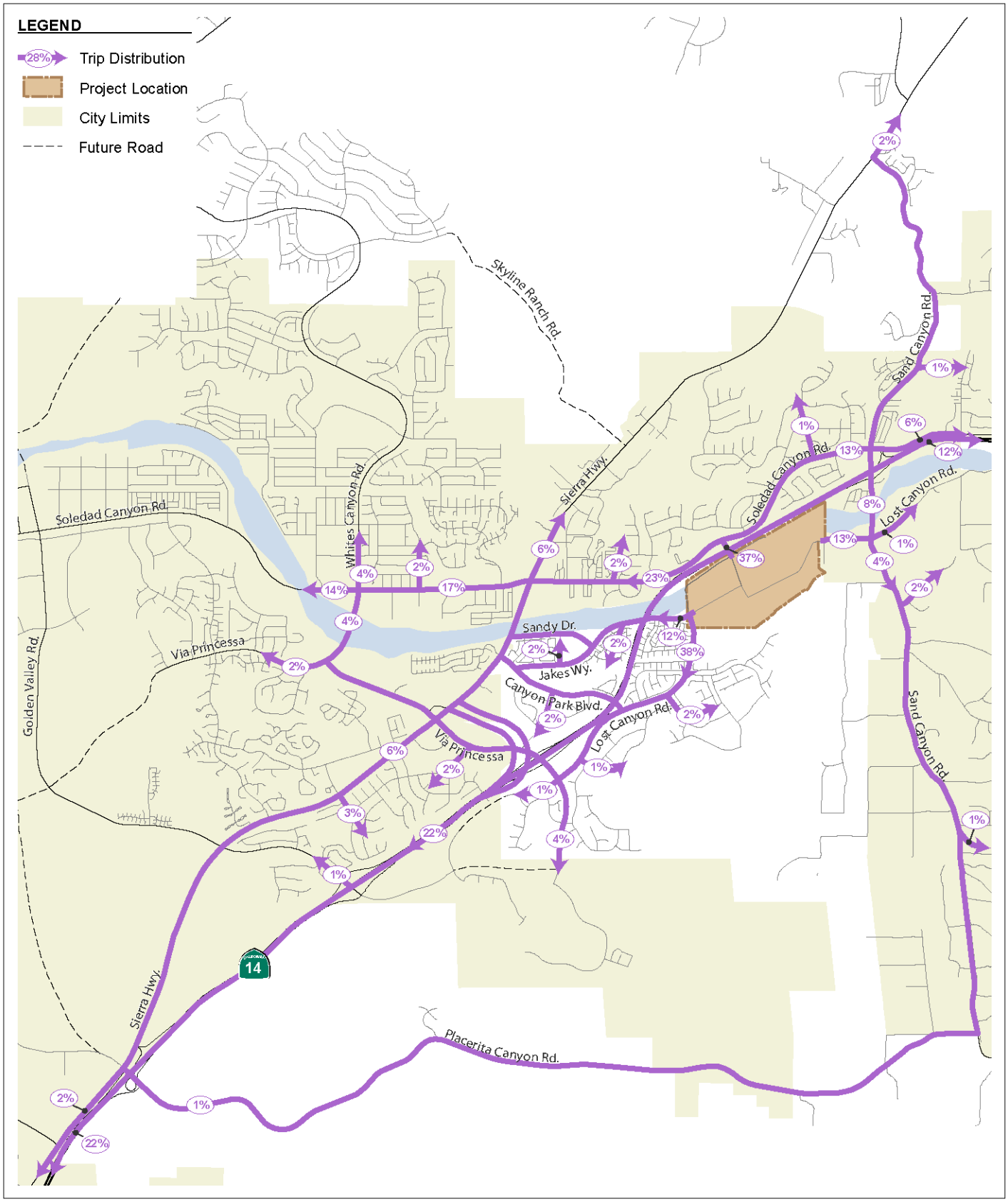
The distribution of project trips was estimated for years 2012 and 2015 based on project-only traffic assignments from the SCVCTDM, travel time survey results, review of existing travel patterns, and locations of complementary land uses. The project-only SCVCTDM traffic assignment predicts that approximately 20 percent of external project trips will have one trip end (either origin or destination) within a couple of miles of the project. The remainder will be medium to longer distance trips, with commute trips being the most lengthy.

Figure 4.3-6, Project Trip Distribution – 2015 illustrates the expected distribution of external project trips in 2015. The forecast trip distribution takes into account the modest amount of traffic that would be redistributed as a result of the street connections that would be constructed as part of the project (e.g., Lost Canyon Road), and also accounts for the redistribution of traffic related to the future relocation of students from the existing Sulphur Springs Elementary School to the new Spring Canyon Elementary School. It is estimated that approximately 50 percent of the students attending Sulphur Springs Elementary School come from residential neighborhoods north of SR-14. Upon completion of Spring Canyon Elementary School, future students located in residential neighborhoods north of SR-14 would attend Spring Canyon Elementary School and students generated in Vista Canyon would attend Sulphur Springs Elementary School (see **Section 4.10, Education**). Of the four project access roads, the Lost Canyon Road access (to/from Via Princessa) and Vista Canyon Road access (to/from Soledad Canyon Road) are each expected to be used by 37 and 38 percent of project trips, respectively. Jakes Way and Lost Canyon Road (to/from Sand Canyon Road) would each serve 12 and 13 percent of project trips, respectively.

e. Impacts Analysis

(1) Roadway System

The proposed project's potential impacts on the study area roadways were assessed under two different scenarios: Phase 1 (Year 2012) and project buildout (Year 2015). Under each scenario, impacts were assessed and appropriate mitigation is recommended; a long-term cumulative analysis follows thereafter. As previously described, Phase 1 of the project would include 680 multi-family dwelling units and 25,000 square feet of retail space. Phase 1 would not include the proposed Metrolink Station, the extension of Vista Canyon Road over the Santa Clara River to Soledad Canyon Road, or the easterly extension of Lost Canyon Road from the project to La Veda Avenue. **Figures 4.3-7** and **4.3-8** depict Peak Hour Traffic Volumes and Lane Configurations – 2012 without Project.



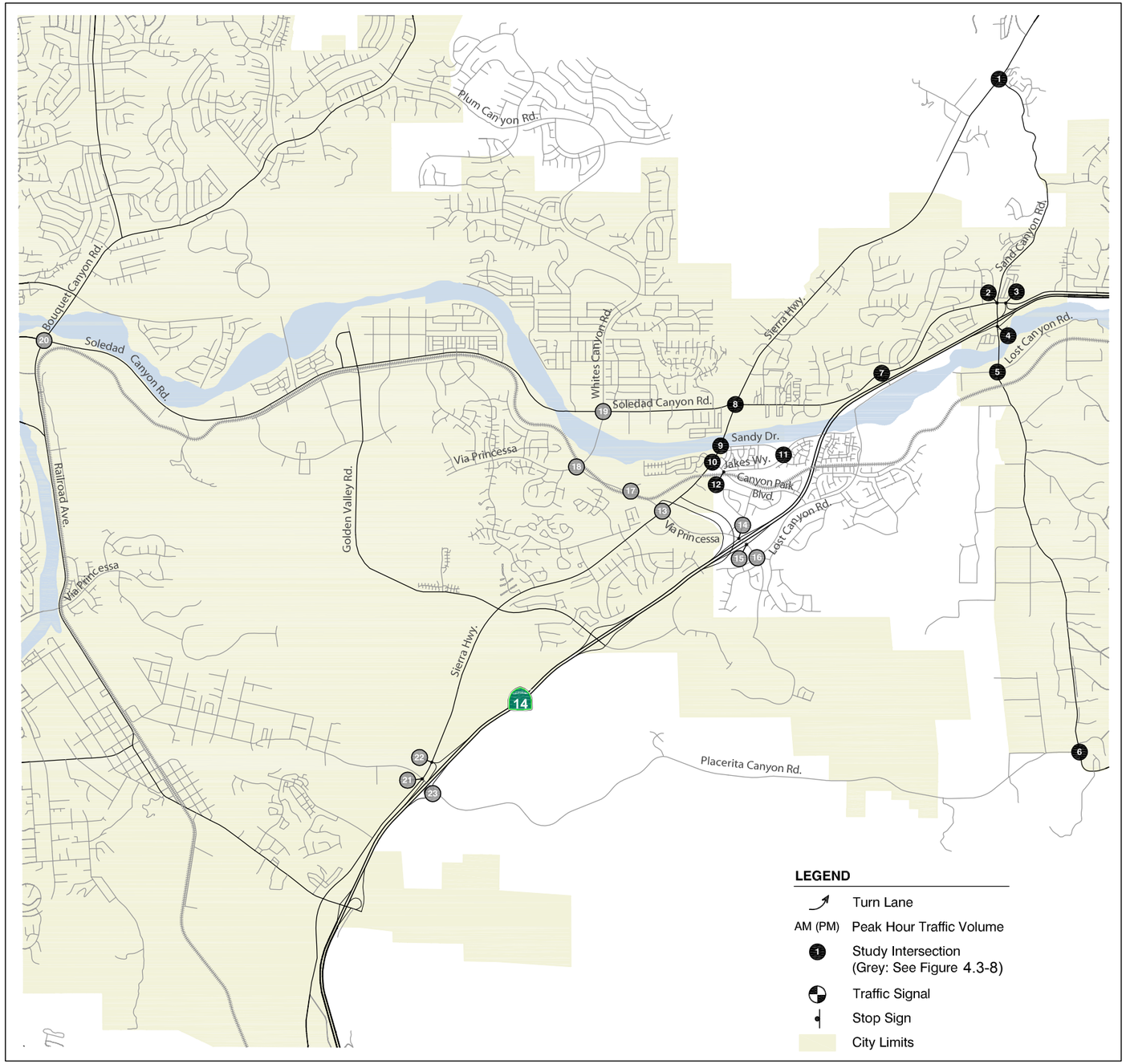
NOT TO SCALE

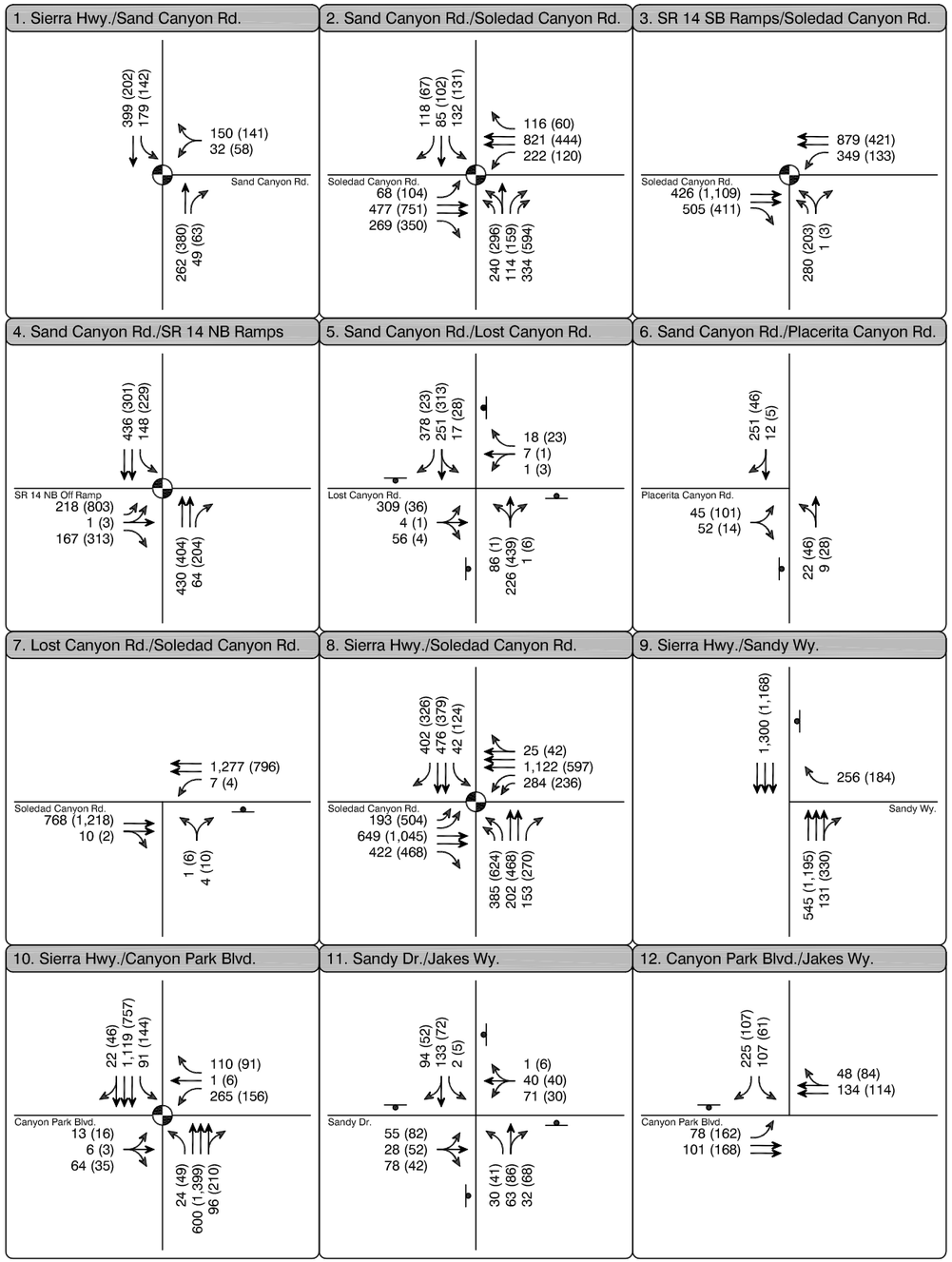
SOURCE: Fehr & Peers - May 2010

FIGURE **4.3-6**

Project Trip Distribution - 2015

112-024•09/10





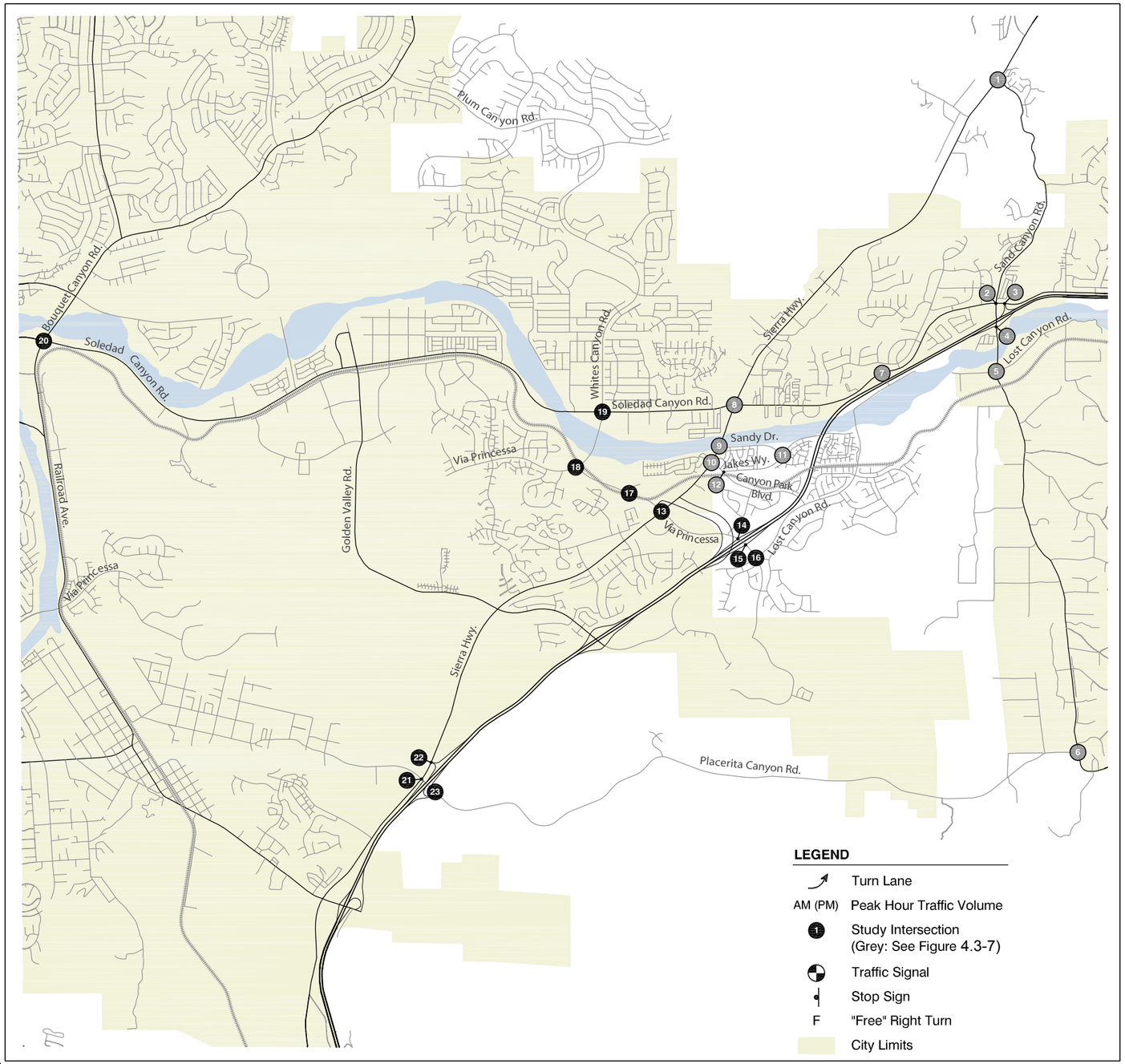
NOT TO SCALE

SOURCE: Fehr & Peers - May 2010

FIGURE **4.3-7**

Peak Hour Traffic Volumes and Lane Configurations – 2012 without Project

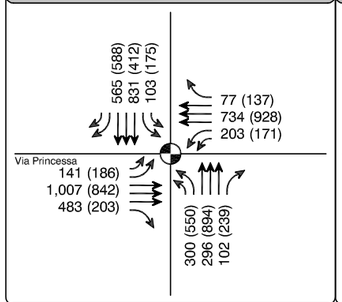
112-024•09/10



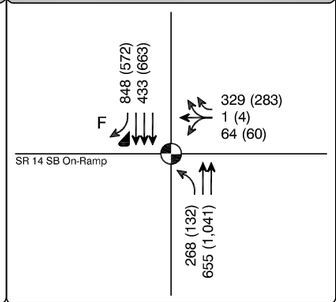
NOT TO SCALE

SOURCE: Fehr & Peers - May 2009

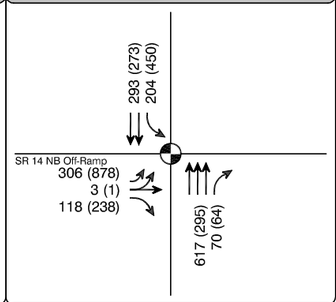
13. Sierra Hwy./Via Princessa



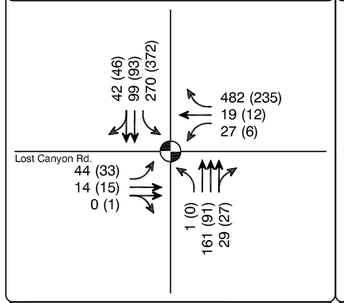
14. Via Princessa/SR 14 SB Ramps



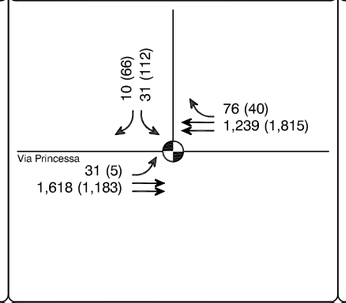
15. Via Princessa/SR 14 NB Ramps



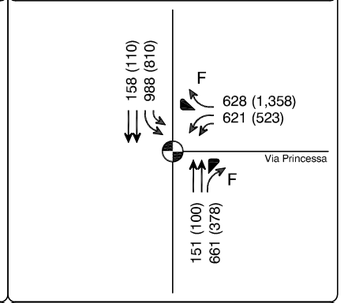
16. Via Princessa/Lost Canyon Rd.



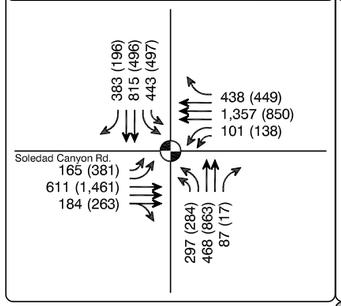
17. Weyerhaeuser Rd./Via Princessa



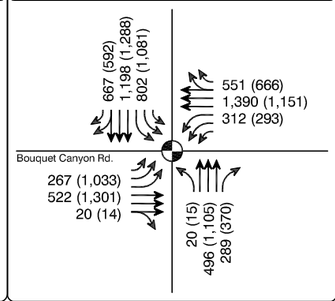
18. Whites Canyon Rd./Via Princessa



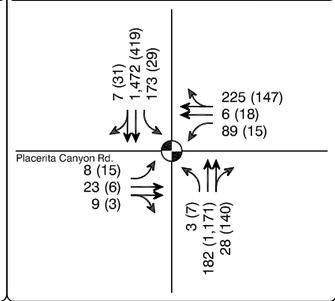
19. Whites Canyon Rd./Soledad Canyon Rd.



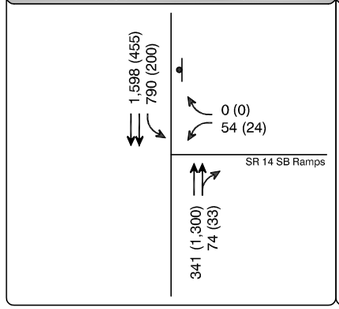
20. Soledad Canyon Rd./Bouquet Canyon Rd.



21. Sierra Hwy./Placerita Canyon Rd.



22. Sierra Hwy./SR 14 SB Ramps



23. SR 14 NB Ramps/Placerita Canyon Rd.

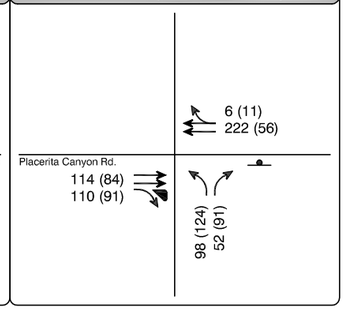


FIGURE **4.3-8**

Peak Hour Traffic Volumes and Lane Configurations – 2012 without Project

112-024•07/09

(a) 2012 (Phase I)

(1) Intersections

Expected travel conditions in the study area were assessed under 2012 conditions assuming the proposed project is not constructed. **Table 4.3-8, Intersection Operations – 2012 Conditions,** shows that five of the 23 study intersections would operate at unacceptable levels of service under No Project conditions in 2012.

To assess the project's impacts, the Phase 1 project trips were added to the Year 2012 without project background volumes to yield the Phase 1 forecasts. Year 2012 background volumes were determined based on Interim Year forecasts adjusted to reflect projected 2012 conditions.

As mentioned above, for those intersections located within the jurisdiction of the City of Santa Clarita, the project would have a significant impact if it would:

- Worsen an intersection from LOS D or better to LOS E or F.
- Cause the following increase in delay at an intersection that operates (with the project) at LOS D or worse:
  - LOS D with the project: more than 4-second increase in delay is significant.
  - LOS E or F with the project: more than 2-second increase in delay is significant.

Table 4.3-8
Intersection Operations – 2012 Conditions

			AM (PM) Peak Hour	
No.	Intersection	Traffic Control	2012 without Phase 1 Delay or V/C Ratio – LOS	2012 with Phase 1 Delay or V/C Ratio - LOS
1	Sand Canyon Road/Sierra Highway	Traffic Signal	0.55 - A (0.61 - B)	0.56 - A (0.62 - B)
2	Sand Canyon Road/Soledad Canyon Road	Traffic Signal	33 - C (37 - D)	33 - C (38 - D)
3	Soledad Canyon Road/SR-14 SB Ramps	Traffic Signal	51 - D (48 - D)	**57 - E (64 - E)**
4	Sand Canyon Road/SR-14 NB Ramps	Traffic Signal	13 - B (21 - C)	14 - B (22 - C)
5	Sand Canyon Road/Lost Canyon Road	All-Way Stop	76 - F (19 - C)	**96 - F (18 - C)**
6	Sand Canyon Rd./Placerita Canyon Road	Side-Street Stop	11 - B (13 - B)	11 - B (13 - B)
7	Soledad Canyon Road/Lost Canyon Road	Side-Street Stop	32 - D (45 - E)	33 - D (47 - E)
8	Sierra Highway/Soledad Canyon Road	Traffic Signal	40 - D (56 - E)	41 - D (58 - E)
9	Sierra Highway/Sandy Way	Side-Street Stop	16 - C (11 - B)	19 - C (12 - B)

No.	Intersection	Traffic Control	AM (PM) Peak Hour 2012 without Phase 1 Delay or V/C Ratio – LOS	AM (PM) Peak Hour 2012 with Phase 1 Delay or V/C Ratio - LOS
10	Sierra Highway/Canyon Park Boulevard	Traffic Signal	23 - C (25 - C)	24 - C (29 - C)
11	Sandy Way/Jakes Way	All-Way Stop	10 - B (9 - A)	13 - B (10 - B)
12	Canyon Park Boulevard/Jakes Way	Side-Street Stop	16 - C (16 - C)	18 - C (21 - C)
13	Sierra Highway/Via Princessa	Traffic Signal	31 - C (37 - D)	31 - C (38 - D)
14	Via Princessa/SR-14 SB Ramps	Traffic Signal	15 - B (18 - B)	**47 - D (140 - F)**
15	Via Princessa/SR-14 NB Ramps	Traffic Signal	21 - C (27 - C)	**85 - F (>180 - F)**
16	Via Princessa/Lost Canyon Road	Traffic Signal	0.60 - B (0.65 - B)	**0.72 - C (0.84 - D)**
17	Via Princessa/Weyerhaeuser Way	Traffic Signal	4 - A (19 - B)	4 - A (19 - B)
18	Via Princessa/Whites Canyon Road	Traffic Signal	8 - A (6 - A)	8 - A (6 - A)
19	Soledad Canyon Road/Whites Canyon Road	Traffic Signal	40 - D (49 - D)	41 - D (50 - D)
20	Soledad Canyon Road/Bouquet Canyon Road	Traffic Signal	45 – D (66 - E)	45 - D (66 - E)
21	Placerita Canyon Road/Sierra Highway	Traffic Signal	39 – D (41 - D)	39 - D (42 - D)
22	Placerita Canyon Road/SR-14 SB Ramps	Side-Street Stop	>50 – F (>50 - F)	>50 - F (>50 - F)
23	Placerita Canyon Road/SR-14 NB Ramps	Side-Street Stop	15 - C (18 - C)	15 - C (18 - C)

Source: Fehr & Peers, Inc., 2010.
Note: Delay at Intersection 22 is shown as "> 50" because volume inputs exceed the modeling software program's ability to produce reasonable delay estimates. Bolded entries indicate a significant impact.

For those intersections located within the County of Los Angeles, the project would have a significant impact if it would:

- Cause the following increase in volume-to-capacity (v/c) ratio at an intersection or two-lane roadway:
  - LOS C pre-project: 0.04 or greater increase in v/c ratio
  - LOS D pre-project: 0.02 or greater increase in v/c ratio
  - LOS E or F pre-project: 0.01 or greater increase in v/c ratio; or
- Cause an intersection or two-lane roadway to be significantly impacted in accordance with analysis procedures and thresholds set forth by the County.

Caltrans maintains the freeway ramp terminal intersections, which are Intersections No. 3, 4, 14, 15, 22, and 23 within the project study area. For these intersections, the project would have a significant impact if it would:

- Cause a facility maintained by Caltrans to worsen from LOS E or better to LOS F; or

- Exacerbate LOS F operations on a facility maintained by Caltrans, causing the traffic demand to increase by 2 percent of capacity or more.

Figure 4.3-9 and **4.3-10, Peak Hour Traffic Volumes and Lane Configurations – 2012 with Phase 1,** illustrate the 2012 turning movement forecasts at the study intersections with Phase 1 buildout. As shown on **Table 4.3-8, Intersection Operations - 2012 Conditions**, based on the application of the above significance criteria, Phase 1 of the project would cause significant impacts at the following five study intersections:

- No. 3 – Soledad Canyon Road/SR-14 SB Ramps (Caltrans Intersection): Phase 1 would worsen AM and PM peak hour operations at the intersection from LOS D to E.

- No. 5 – Sand Canyon Road/Lost Canyon Road (City Intersection): Phase 1 would increase the delay by more than 2 seconds during the AM peak hour at the intersection, which would operate at LOS F without and with Phase 1.

- No. 14 – Via Princessa/SR-14 SB Ramps (Caltrans Intersection): Phase 1 would worsen PM peak hour operations at the intersection from LOS B to LOS F, and would increase the delay by more than 4 seconds during the AM peak hour at the intersection, which would operate at LOS D.

- No. 15 – Via Princessa/SR-14 NB Ramps (Caltrans Intersection): Phase 1 would worsen AM and PM peak hour operations at the intersection from LOS C to LOS F.

- No. 16 – Via Princessa/Lost Canyon Road (County Intersection): Phase 1 would worsen PM peak hour operations at the intersection from LOS B to LOS D, and increase the v/c ratio by 0.19.

Mitigation Measures 4.3-1 through **4.3-4** have been developed in order to reduce the impacts to these intersections. Recommended mitigation at the Soledad Canyon Road/SR-14 SB Ramps intersection (No. 3) consists of converting the westbound left-turn lane onto the SB SR-14 on-ramp from a permitted to protected signal phase, and retiming this signal and the adjacent Sand Canyon Road/Soledad Canyon Road signal. The recommended improvement at the Sand Canyon/Lost Canyon Road intersection (No. 5) is to install a signal or single-lane roundabout (Intersection Design Options Nos. 2, 3 or 4). However, implementation of one of the Intersection Design Options would not be completed as part of Phase 1, as a connection to Lost Canyon Road at La Veda Avenue is not proposed with Phase I. Recommended improvements at the Via Princessa/SR-14 ramp intersections (Nos. 14 and 15) consist of traffic signal timing modifications. The recommended improvement at the Via Princessa/Lost Canyon Road intersection (No. 16) is to install a right-turn overlap arrow on the westbound Lost Canyon Road approach to the intersection. As shown in **Table 4.3-9, Intersection Operations – 2012 Conditions with Mitigation**, with implementation of this mitigation, impacts to Intersection Nos. 3, 5, 14, 15, and 16 would be less than significant under Phase 1 conditions.

Table 4.3-9
Intersection Operations – 2012 Conditions with Mitigation

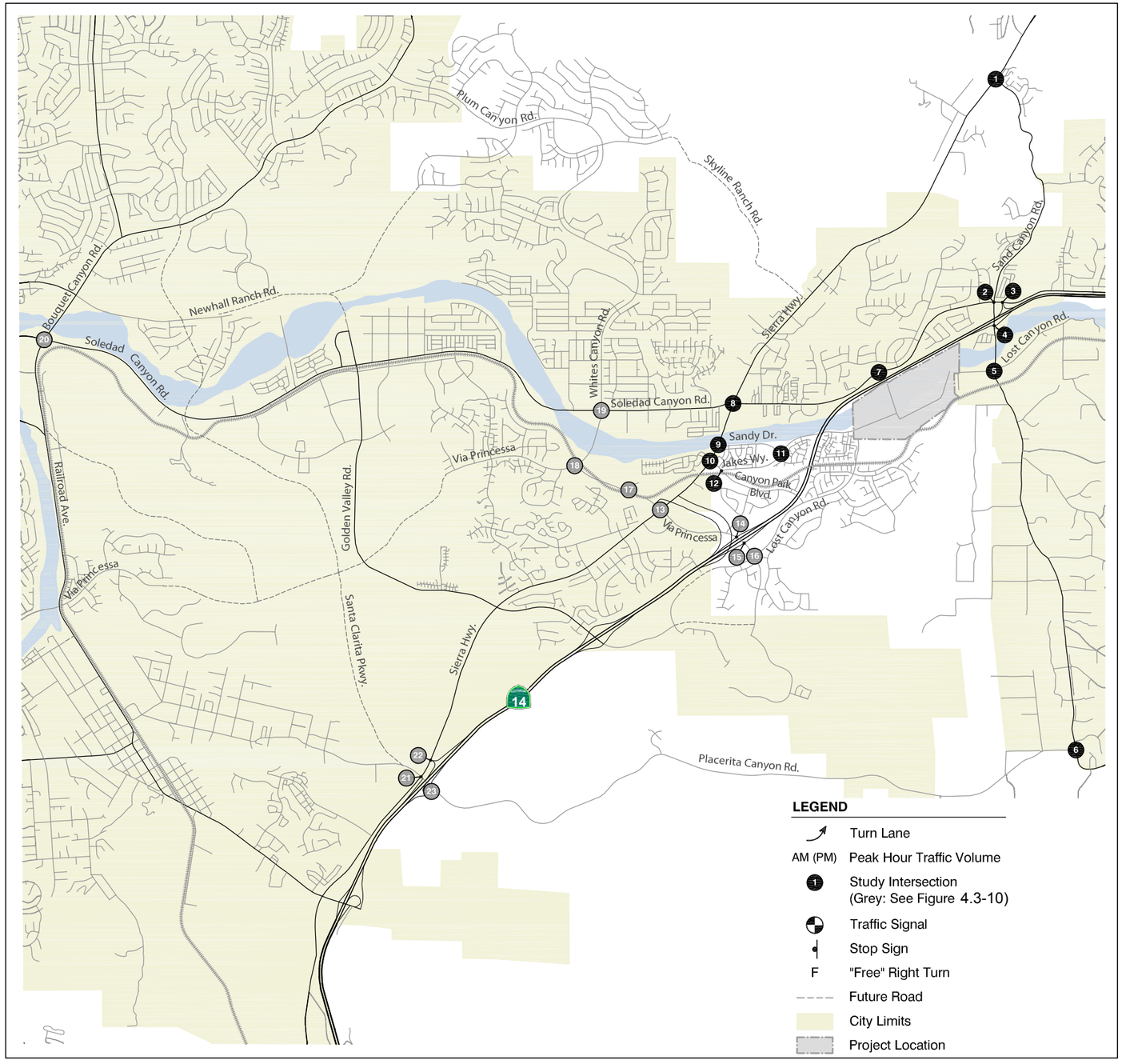
No.	Intersection	Mitigation	AM (PM) Peak Hour Delay or V/C Ratio – LOS 2012 without Project Conditions	2012 with Phase 1 – Unmitigated Conditions	2012 with Phase 1 – Mitigated Conditions
3	Soledad Canyon Road/SR-14 SB Ramps	Convert WB left-turn onto SR-14 to a protected phase and retime signal to optimize traffic flow	51 - D (48 - D)	57 - E (64 - E)	45 – D (24 - C)
14	Via Princessa/SR-14 SB Ramps	Retime traffic signals	15 - B (18 - B)	47 - D (140- F)	13 - B (15 - B)
15	Via Princessa/SR-14 NB Ramps	Retime traffic signals	21 - C (27 - C)	85 - F (>180- F)	16 - B (23 - C)
16	Via Princessa/Lost Canyon Road (Unincorporated Los Angeles County Roadway)	Install right-turn overlap arrow	0.60 – B (0.65 - B)	0.72 - C (0.84 - D)	0.55 – B (0.63 - B)

Source: Fehr & Peers, Inc., 2010.
SB= Southbound; NB= Northbound

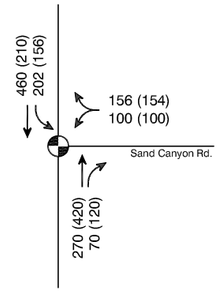
With respect to the Sand Canyon/Lost Canyon Road intersection (No. 5), as noted above, Phase 1 of the project would further degrade LOS F operations at the intersection, thereby resulting in significant impacts. However, Phase 1 does not include a connection to Lost Canyon Road at La Veda Avenue. This connection would be completed as part of project buildout. Therefore, the project would have a "temporary" significant unavoidable impact. It should be noted that Phase 1 would have a minimal contribution of traffic to the intersection (15 AM peak hour trips, which is a 1 percent increase).

(2) Freeways

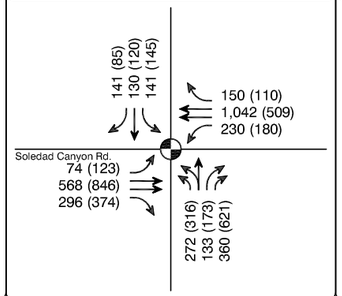
Freeway segments and ramps within the study area also were analyzed. As shown on **Table 4.3-10, SR-14 Operations – 2012 Conditions**, with the exception of northbound SR-14 between Via Princessa/Sierra Highway and Sand Canyon Road, all segments of SR-14 would operate at unacceptable levels of service in 2012 under no project conditions.



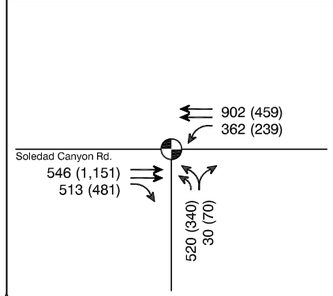
1. Sierra Hwy./Sand Canyon Rd.



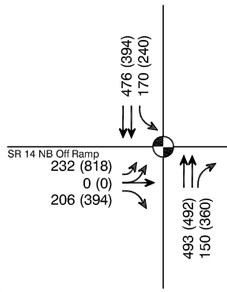
2. Sand Canyon Rd./Soledad Canyon Rd.



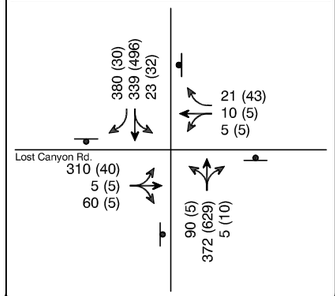
3. SR 14 SB Ramps/Soledad Canyon Rd.



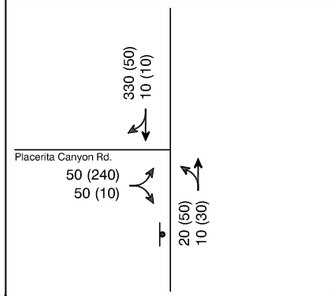
4. Sand Canyon Rd./SR 14 NB Ramps



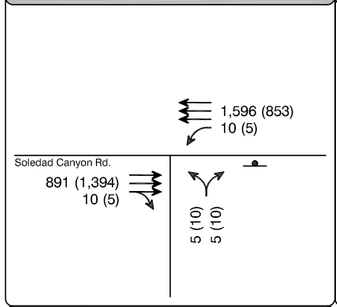
5. Sand Canyon Rd./Lost Canyon Rd.



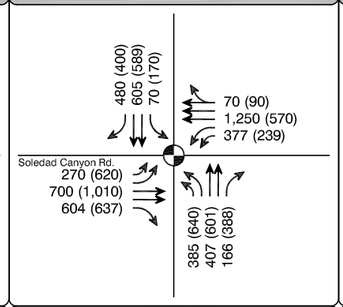
6. Sand Canyon Rd./Placerita Canyon Rd.



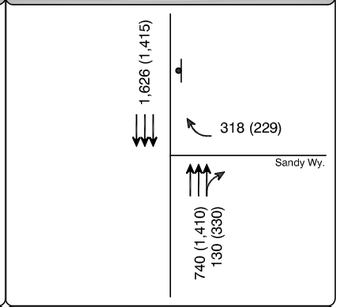
7. Lost Canyon Rd./Soledad Canyon Rd.



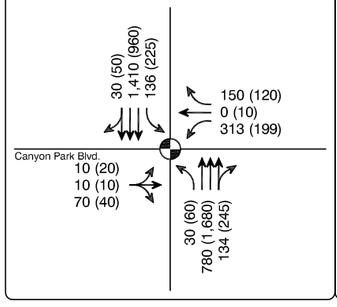
8. Sierra Hwy./Soledad Canyon Rd.



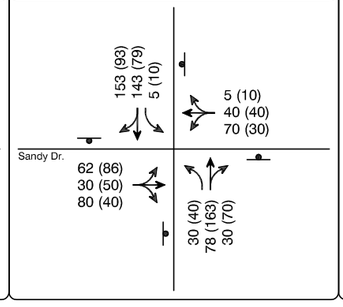
9. Sierra Hwy./Sandy Wy.



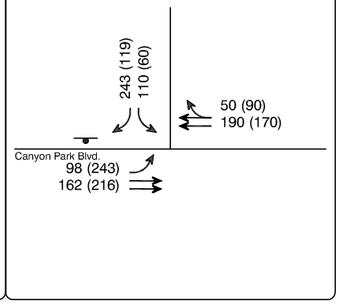
10. Sierra Hwy./Canyon Park Blvd.



11. Sandy Dr./Jakes Wy.



12. Canyon Park Blvd./Jakes Wy.

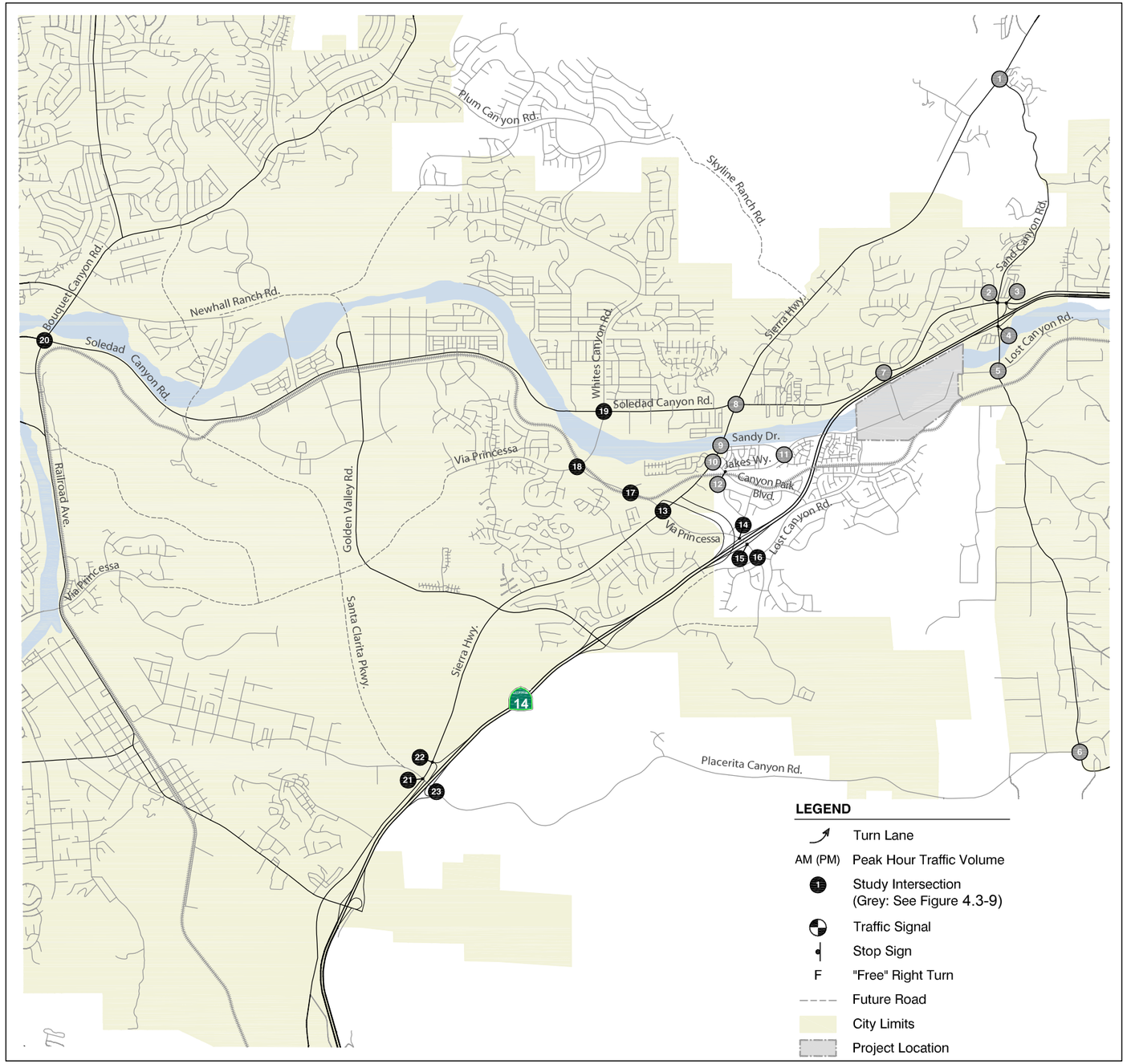


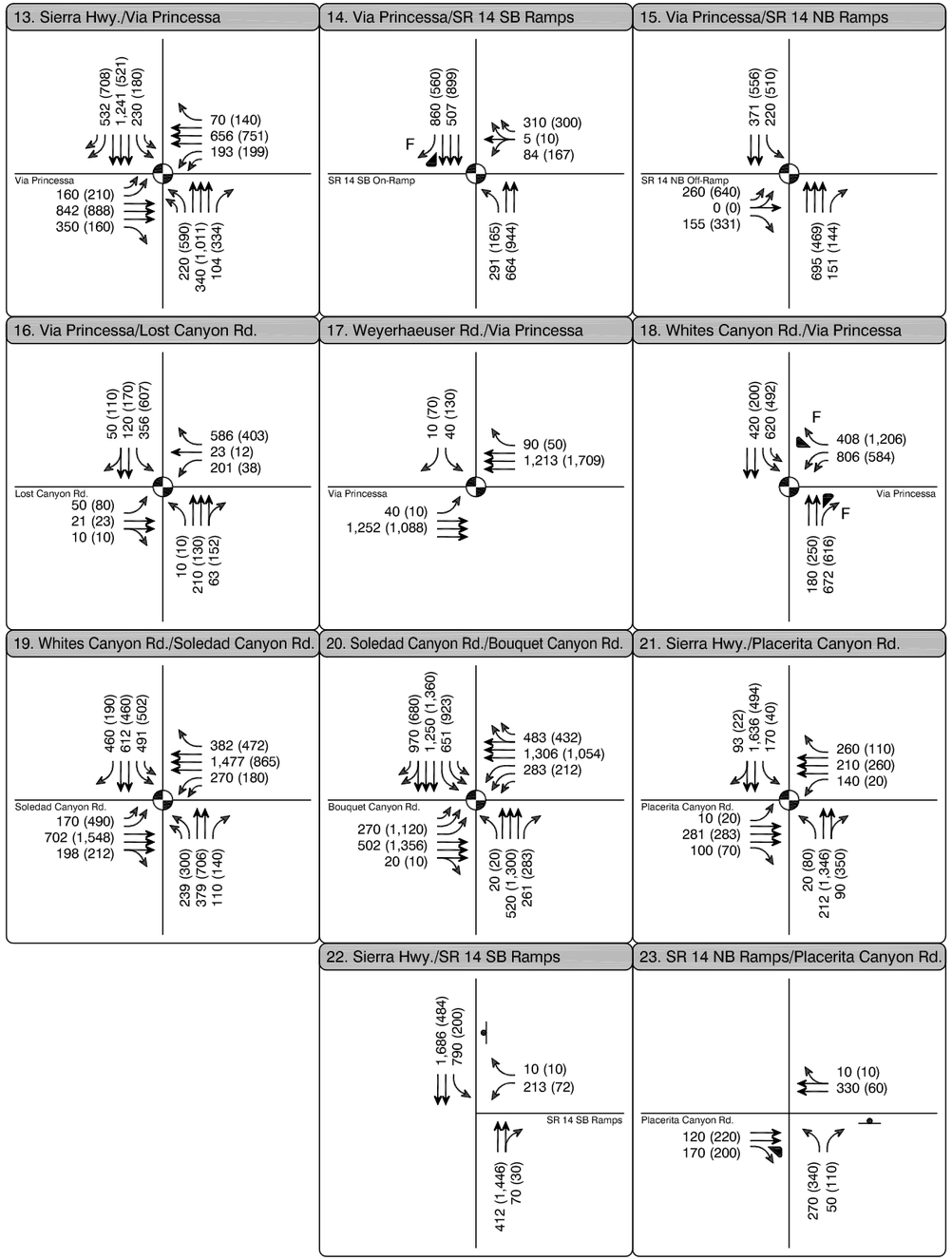
NOT TO SCALE

SOURCE: Fehr & Peers - May 2010

FIGURE **4.3-9**

Peak Hour Traffic Volumes and Lane Configurations – 2012 with Phase 1





NOT TO SCALE

SOURCE: Fehr & Peers - May 2010

FIGURE **4.3-10**

Peak Hour Traffic Volumes and Lane Configurations – 2012 with Phase 1

112-024•09/10

Table 4.3-10
SR-14 Operations – 2012 Conditions

Freeway Facility	AM (PM) Peak Hour Density - LOS	
	2012 without Phase 1	2012 with Phase 1
Freeway Mainline Sections		
NB SR-14: Between Golden Valley Road and Via Princessa/Sierra Highway (Weave)	A (F)	A (F)
NB SR-14: Between Via Princessa/Sierra Highway and Sand Canyon Road	9-A (31-D)	9-A (31-D)
NB SR-14: Between Sand Canyon Road and Soledad Canyon Road	12-B (F)	12-B (F)
SB SR-14: Between Soledad Canyon Road and Sand Canyon Road	F (14-B)	F (14-B)
SB SR-14: Between Sand Canyon Road and Via Princessa	F (11-B)	F (12-B)
SB SR-14: Between Via Princessa/Sierra Highway and Golden Valley Road (Weave)	F (B)	F (B)
Freeway Ramps		
SR-14 NB Off-Ramp/Sand Canyon Road	11 - B (33 – D)	11 - B (33 - D)
SR-14 NB On-Ramp/Sand Canyon Road	14 - B (43 - F)	14 - B (43 - F)
SR-14 SB Off-Ramp/Sand Canyon Road/Soledad Canyon Road	32 - D (17 – B)	32 - D (17 - B)
SR-14 SB On-Ramp/Sand Canyon Road/Soledad Canyon Road	28 - C (12 - B)	28 - C (12 - B)
SR-14 NB Off-Ramp/Via Princessa	11 - B (33 – D)	11 - B (33 - D)
SR-14 SB On-Ramp/Via Princessa	28 - C (16 - B)	28 - C (16 - B)

Source: Fehr & Peers, Inc., 2010.
Notes: Ramps selected for analysis limited to those that would be used by the project to a significant degree.
SB= Southbound; NB= Northbound

As noted above, a significant impact would occur if freeway segment or ramp operations would decrease from LOS E or better to LOS F, or if the project would exacerbate LOS F operations causing the traffic demand to increase by 2 percent of capacity or more. As shown in **Table 4.3-10, SR-14 Operations – 2012 Conditions**, Phase 1 of the project would further degrade unacceptable operations at several mainline segments and ramps of SR-14. However, no freeway facilities would degrade from an acceptable to unacceptable level. Additionally, Phase 1 of the project would add fewer than 100 new peak hour trips to any particular segment of SR-14. Since this level of added traffic represents less than a 2 percent increase in capacity, impacts to SR-14 with Phase 1 of the project would be less than significant.

(b) 2015 (Project Buildout)

(1) Lost Canyon Road Improvements (Project Site to Sand Canyon Road)

As part of the proposed project, improvements will be made to the segment of Lost Canyon Road between the project site and the Sand Canyon Road intersection. The specific improvements were determined based on an analysis which: (1) describes the traffic circulation on the roadway segment; (2) estimates travel changes in travel patterns due to development of the proposed project; and, (3) identifies recommendations to improve circulation and access. (Please see *Lost Canyon Road School Access Memo*, Appendix H to the Vista Canyon Transportation Impact Study.)

This segment of Lost Canyon Road presently has one lane in each direction with a posted speed limit of 30 mph (25 mph when children are present). A continuous sidewalk is provided on the south side of the street, from the project site to Sand Canyon Road. Sulphur Springs Elementary School and Pinecrest School both take vehicular access from this segment of Lost Canyon Road, which presently, is congested when school is in session during the morning (when students are being dropped off) and in the afternoon (when students are being picked up).

All trips accessing the two schools must pass through the Lost Canyon Road/Sand Canyon Road intersection. Field observations disclose that vehicle queues on Lost Canyon Road approaching this intersection spill back a considerable distance blocking inbound and outbound traffic to the Pinecrest School and hindering vehicles exiting the Sulphur Springs Elementary School's drop off driveway. Since exclusive left-turn pockets are not provided on Lost Canyon Road, queued vehicles waiting to enter the two school driveways frequently block through vehicles on Lost Canyon Road, impacting La Veda Avenue and Sand Canyon Road.

Traffic counts conducted during a school day morning (8:00-9:00 AM) and afternoon (2:00-3:00 PM) peak hours determined that this segment of Lost Canyon Road carried approximately 850 morning peak hour vehicles and 550 afternoon peak hour vehicles. Thus, the roadway was busiest during the morning peak hour. Traffic counts also were conducted during a weekday evening before and after the Sulphur Springs Elementary School open-house; the peak hour occurred from 6:45 to 7:45 PM. During this hour, the two-way volume on Lost Canyon Road was 585 vehicles. Thus, the peak hour volume was lower than the typical morning peak hour volumes (approximately 850 vehicles) and comparable to the typical afternoon peak hour volumes (approximately 550). Therefore, improvements to accommodate daily school traffic would also accommodate traffic generated from school related special events, such as an open house.

Based on the results of the study, to alleviate existing congestion on this roadway and to accommodate project generated traffic, the following improvements will be implemented as part of the project:

- Pavement widening and striping of this segment of Lost Canyon Road to accommodate one travel lane in each direction with a median turn lane, a trail along the north side of the roadway, a roundabout at the intersection of La Veda Avenue and Lost Canyon Road, and parallel parking on the south side of Lost Canyon Road. These improvements would be completed within the existing right-of-way.

- Under the roundabout design option, restricting the outbound-only driveways at each school to right-turns to minimize conflicting turning movements.

- Construction of a narrow raised median at the easterly Pinecrest School driveway and include a sign in the median prohibiting u-turns.

In addition to the above improvements, it is recommended that the City and project applicant work with the Sulphur Springs School District on potentially creating an on-site pick-up/drop-off area in the parking area directly east of the School buildings, which would, if implemented, further alleviate congestion on this roadway during the peak hours.

(2) Intersections

Expected travel conditions in the study area were assessed under 2015 conditions assuming the proposed project is not constructed. **Table 4.3-11, Intersection Operations - 2015 Conditions**, shows that eight of the 23 study intersections would operate at unacceptable levels of service under No Project conditions in 2015. **Figure 4.3-11** and **4.3-12, Peak Hour Traffic Volumes and Lane Configurations – 2015 without Project,** illustrate the 2015 turning movement forecasts at the study intersections without the project.

Table 4.3-11
Intersection Operations – 2015 Conditions

			AM (PM) Peak Hour		
No.	**Intersection**	**Traffic Control**	**2015 without Project Delay or V/C Ratio - LOS**	**2015 with Project Delay or V/C Ratio - LOS**	**Percent Increase in Traffic Due to Project**
1	Sand Canyon Road/Sierra Highway	Traffic Signal	0.60 - A (0.67 - B)	0.61 - B (0.70 - C)	3% (4%)
2	Sand Canyon Road/Soledad Canyon Road	Traffic Signal	**36 - D** **(68 - E)**	**38 - D** **(140 - F)**	9% (13%)
3	Soledad Canyon Road/SR-14 SB Ramps	Traffic Signal	**151 - F** **(132 - F)**	**347 - F** **(350 - F)**	8% (9%)

No.	Intersection	Traffic Control	AM (PM) Peak Hour 2015 without Project Delay or V/C Ratio - LOS	2015 with Project Delay or V/C Ratio - LOS	Percent Increase in Traffic Due to Project
4	Sand Canyon Road/SR-14 NB Ramps	Traffic Signal	14 - B (20 - C)	**26 - C** **(62 - E)**	10% (12%)
5	Sand Canyon Road/Lost Canyon Road	All-Way Stop	**209 - F** **(64 - F)**	**470 - F** **(404 - F)**	15% (23%)
6	Sand Canyon Rd./Placerita Canyon Road	Side-Street Stop	11 - B (15 - C)	12 - B (16 - C)	8% (5%)
7	Soledad Canyon Road/Lost Canyon Road	Side-Street Stop	**42 - E** **(59 - F)**	**>50 - F** **(>50 - F)**	24% (41%)
8	Sierra Highway/Soledad Canyon Road	Traffic Signal	**44 - D** **(73 - E)**	**50 - D** **(82 - F)**	7% (10%)
9	Sierra Highway/Sandy Way	Side-Street Stop	16 - C (12 - B)	15 - C (14 - B)	4% (5%)
10	Sierra Highway/Canyon Park Boulevard	Traffic Signal	25 - C (28 - C)	27 - C (35 - C)	5% (6%)
11	Sandy Way/Jakes Way	All-Way Stop	10 - B (9 - A)	13 - B (12 - B)	27% (44%)
12	Canyon Park Boulevard/Jakes Way	Side-Street Stop	18 - C (18 - C)	33 - D (33 - D)	12% (16%)
13	Sierra Highway/Via Princessa	Traffic Signal	30 - C (39 - D)	30 - C (40 - D)	5% (7%)
14	Via Princessa/SR-14 SB Ramps	Traffic Signal	19 - B (23 - C)	**>180 - F** **(>180- F)**	11% (19%)
15	Via Princessa/SR-14 NB Ramps	Traffic Signal	34 - C (30 - C)	**>180 - F** **(>180- F)**	28% (29%)
16	Via Princessa/Lost Canyon Road	Traffic Signal	0.62 - B (0.77 - C)	**0.90 – E** **(1.19 - F)**	34% (48%)
17	Via Princessa/Weyerhaeuser Way	Traffic Signal	5 - A (22 - C)	5 - A (19 - B)	4% (6%)
18	Via Princessa/Whites Canyon Road	Traffic Signal	9 - A (6 - A)	9 - A (6 - A)	3% (5%)
19	Soledad Canyon Road/Whites Canyon Road	Traffic Signal	42 - D (48 - D)	45 - D (51 - D)	6% (8%)
20	Soledad Canyon Road/Bouquet Canyon Road	Traffic Signal	**65 - E** **(71 - E)**	**65 - E** **(72 - E)**	1% (1%)
21	Placerita Canyon Road/Sierra Highway	Traffic Signal	48 - D (50 - D)	49 - D (52 - D)	2% (2%)

No.	Intersection	Traffic Control	AM (PM) Peak Hour 2015 without Project Delay or V/C Ratio - LOS	AM (PM) Peak Hour 2015 with Project Delay or V/C Ratio - LOS	AM (PM) Peak Hour Percent Increase in Traffic Due to Project
22	Placerita Canyon Road/SR-14 SB Ramps	Side-Street Stop	**>50 - F** **(>50 - F)**	**>50 - F** **(>50 - F)**	2% (2%)
23	Placerita Canyon Road/SR-14 NB Ramps	Side-Street Stop	**29 - D** **(63 - F)**	**34 - D** **(71 - F)**	3% (2%)
24	Lost Canyon Road/Jakes Way	Roundabout	Does not exist.	5 - A (9 - A)	100% (100%)
25	Lost Canyon Road/Vista Canyon Rd.	Roundabout	Does not exist.	5 - A (7 - A)	100% (100%)

Source: Fehr & Peers, Inc., 2010.
Note: Bolded entries indicate a significant impact.
SB= Southbound; NB= Northbound

To assess project impacts, trips associated with project buildout were assigned to the study area locations; project-only trips include traffic entering/existing the project site to access the new Metrolink station. The project trips were added to the interim (2015) background volumes to yield project buildout forecasts. Impacts were assessed based on the significance threshold criteria described above in **subsection 5.a**. **Figure 4.3-13** and **4.3-14, Peak Hour Traffic Volumes and Lane Configurations – 2015 with Project,** illustrate the 2015 turning movement forecasts at the study intersections with project buildout.

As shown on **Table 4.3-11, Intersection Operations - 2015 Conditions**, based on the application of the above significance criteria, the project would cause significant impacts at the following eight study area intersections (five of which would be impacted by Phase 1):

- No. 2 – Sand Canyon Road/Soledad Canyon Road (City Intersection): The project would worsen PM peak hour operations from LOS E to LOS F at the intersection.

- No. 3 – Soledad Canyon Road/SR-14 SB Ramps (Caltrans Intersection): The project would exacerbate LOS F conditions at the intersection during the AM and PM peak hours, causing a greater than 2 percent increase in capacity utilization at the intersection.

- No. 5 – Sand Canyon Road/Lost Canyon Road (City Intersection): The project would worsen LOS F conditions at the intersection during the AM and PM peak hours, increasing the delay by more than 2 seconds.

- No. 7 – Soledad Canyon Road/Lost Canyon Road (City Intersection): The project would worsen this minor-street stop-controlled intersection from LOS E to LOS F during the AM peak hour. The project would further degrade LOS F operations during the PM peak hour, increasing the delay by more than 2 seconds.

- No. 8 – Sierra Highway/Soledad Canyon Road (City Intersection): The project would increase the delay by more than 4 seconds during the AM peak hour, which exceeds the significance threshold for City intersections operating at LOS D. The project would degrade PM peak hour operations from LOS E to F, increasing the delay by more than 2 seconds.

- No. 14 – Via Princessa/SR-14 SB Ramps (Caltrans Intersection): The addition of project traffic would worsen operations at this intersection from LOS B (AM peak hour) and LOS C (PM peak hour) to LOS F. The degraded operations are caused by extensive queuing in the southbound left-turn lane at the Via Princessa/Lost Canyon Road intersection, which extends into the interchange.

- No. 15 – Via Princessa/SR-14 NB Ramps (Caltrans Intersection): The addition of project traffic would worsen operations at this intersection from LOS C to LOS F during the AM and PM peak hours. The degraded operations are caused by extensive queuing in the southbound left-turn lane at the Via Princessa/Lost Canyon Road intersection, which extends into the interchange.

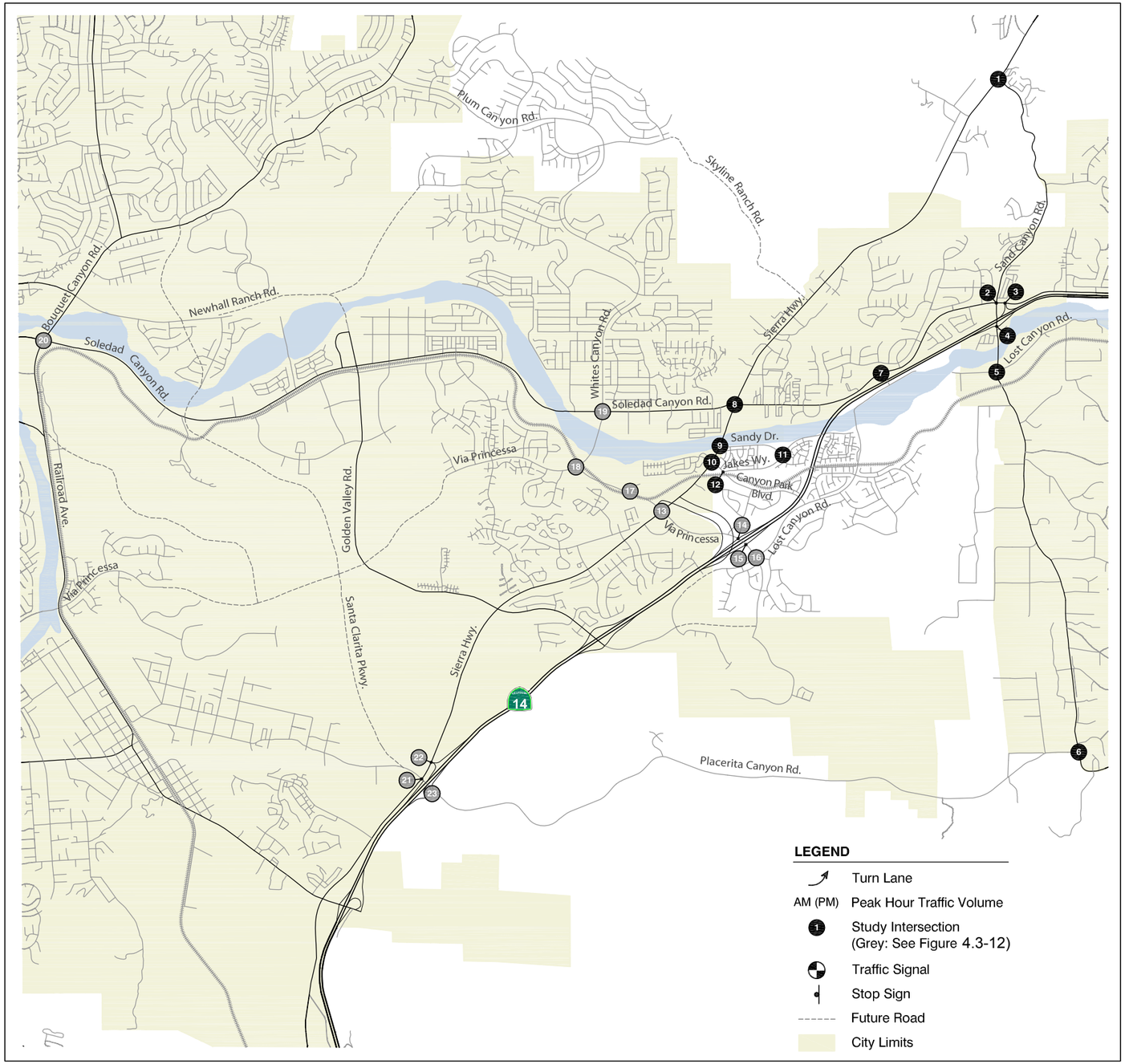
- No. 16 – Via Princessa/Lost Canyon Road (County Intersection): The addition of project traffic would worsen operations at this intersection from LOS B to E during the AM peak hour and from LOS C to F during the PM peak hour; the project would add a significant amount of southbound left-turn and westbound right-turn traffic.

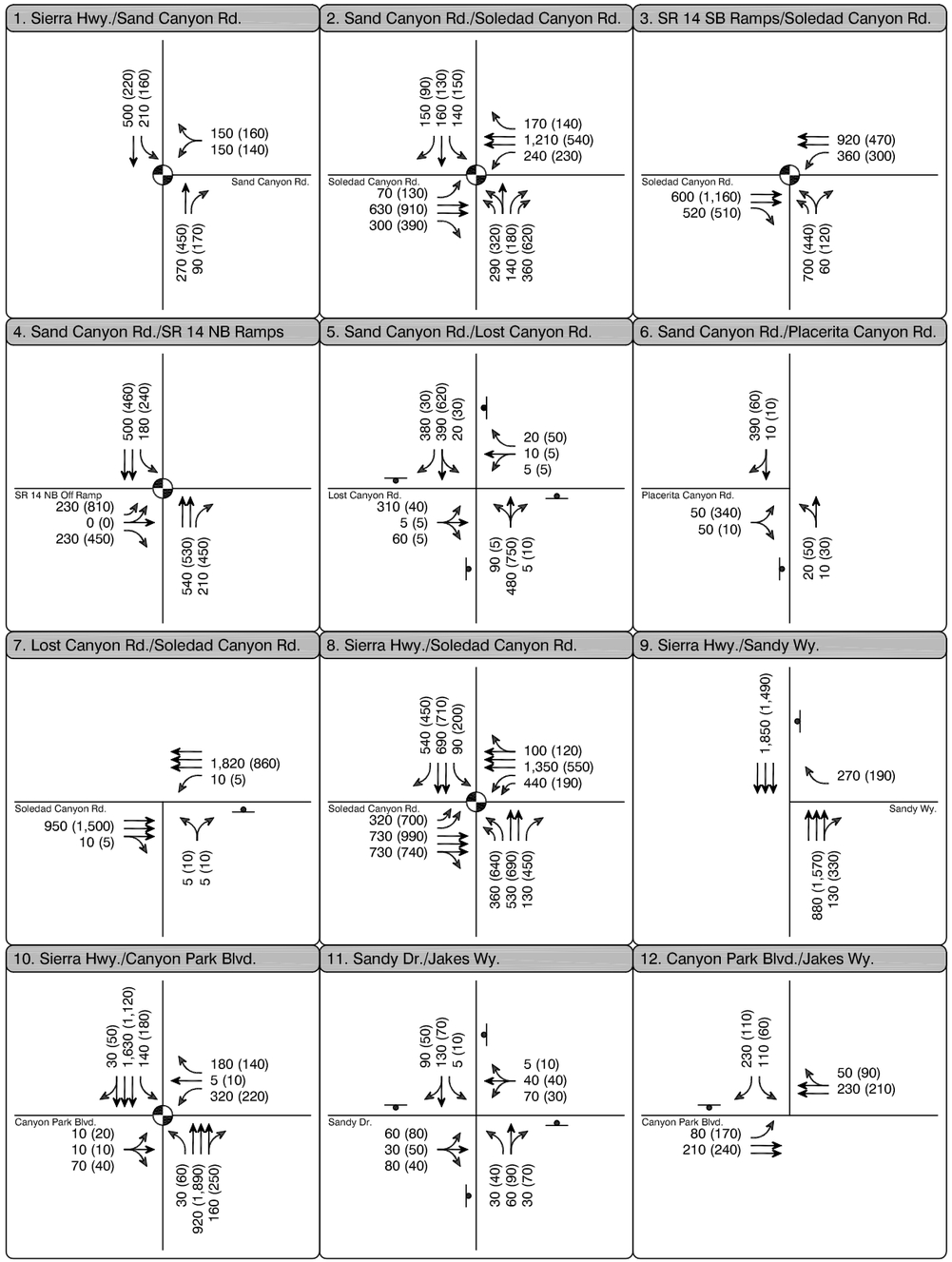
In addition to the intersection analysis, five two-lane roadway segments located within the County of Los Angeles that potentially could be impacted by the proposed project were analyzed consistent with County practices. As shown in **Table 4.3-12, Operations of Two-Lane Roadways in Los Angeles County – 2015 Conditions**, each of these segments would continue to operate at LOS A with buildout of the project. Therefore, impacts to two-lane roadways in unincorporated Los Angeles County would be less than significant.

Table 4.3-12
Operations of Two-Lane Roadways in Los Angeles County – 2015 Conditions

	AM (PM) Peak Hour			
	2015 without Project		2015 with Project	
Street Segment	Traffic Volume	Freeway Segment	AM (PM) Peak Hour	V/C Ratio – LOS
Sand Canyon Road south of Sierra Highway	600 (630)	0.21 – A (0.23 – A)	635 (680)	0.22 – A (0.24 – A)
Lost Canyon Road east of Medley Ridge Drive	620 (470)	0.22 – A (0.17 – A)	1,252 (1,539)	0.47 – A (0.58 – A)
Jakes Way east of Canyon Park Boulevard	470 (430)	0.19 – A (0.16 – A)	581 (570)	0.24 – A (0.22 – A)
Sandy Drive east of Sierra Highway	400 (520)	0.16 – A (0.20 – A)	421 (581)	0.17 – A (0.22 – A)
Placerita Canyon Road east of SR-14	630 (530)	0.25 – A (0.23 – A)	672 (553)	0.27 – A (0.24 – A)

Source: Fehr & Peers, Inc., 2010.
Note: Capacities used to calculate v/c ratios based on Los Angeles County Traffic Impact Analysis Report Guidelines.





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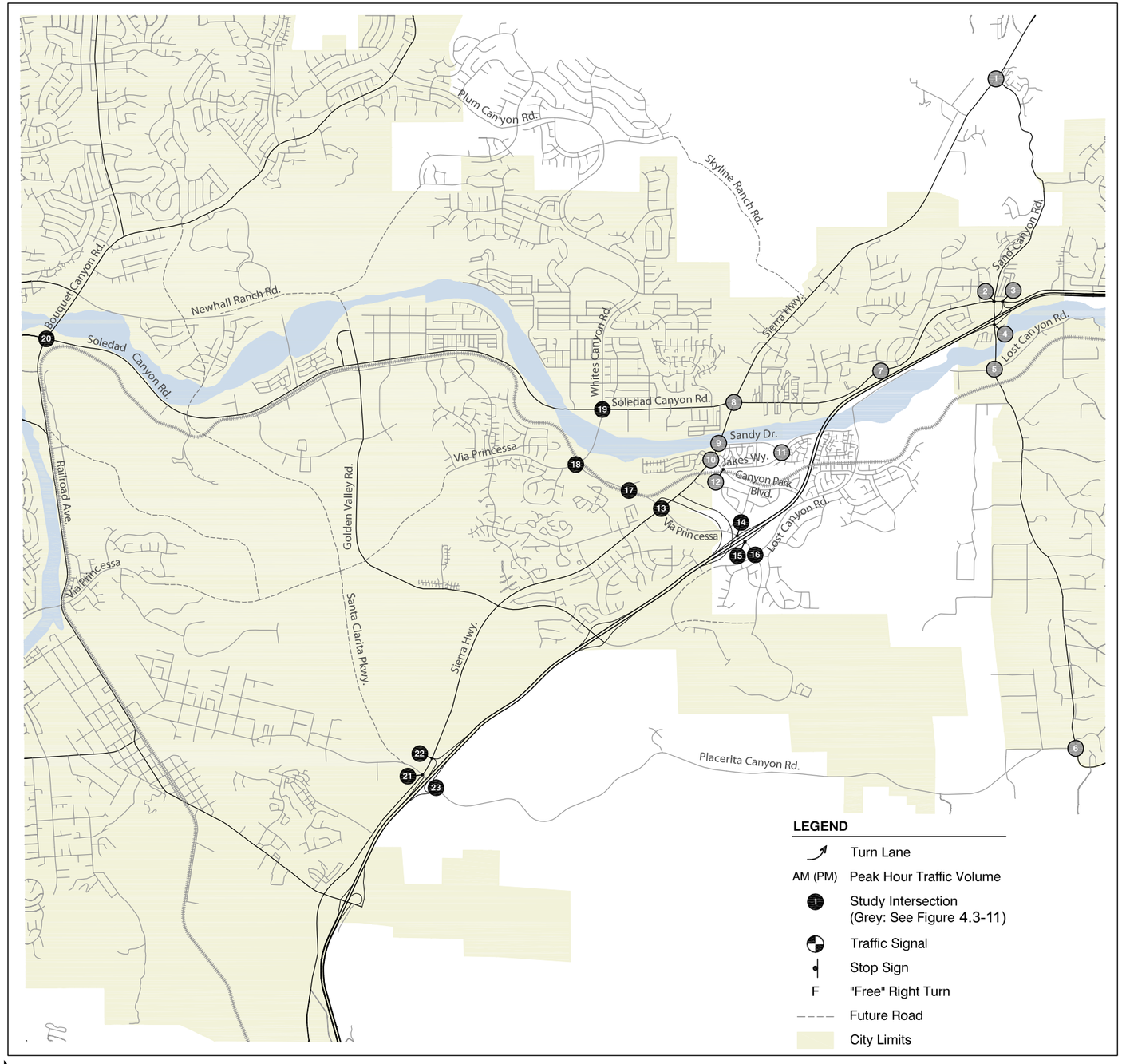
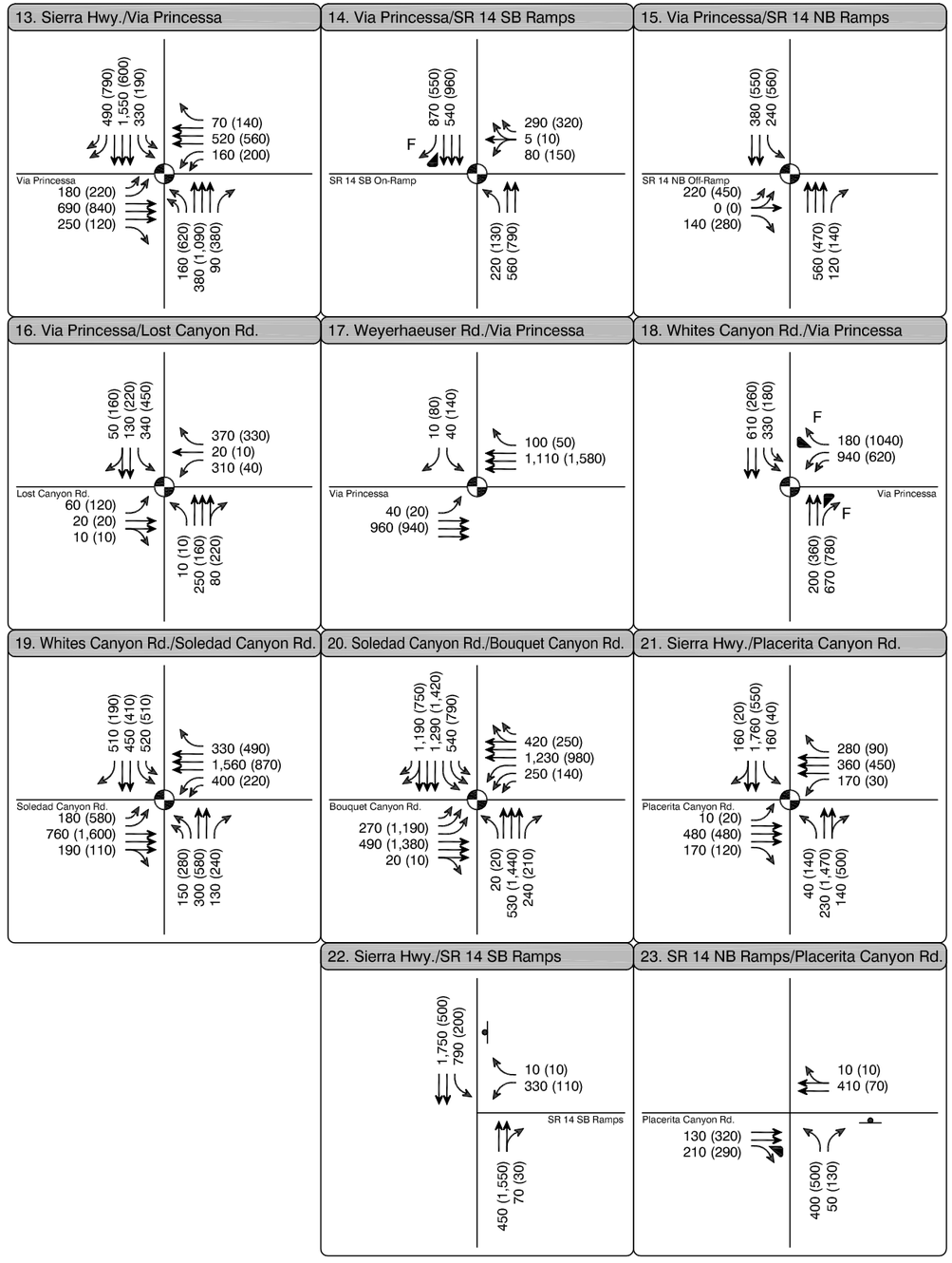
SOURCE: Fehr & Peers - May 2010

FIGURE **4.3-11**

Peak Hour Traffic Volumes and Lane Configurations – 2015 without Project





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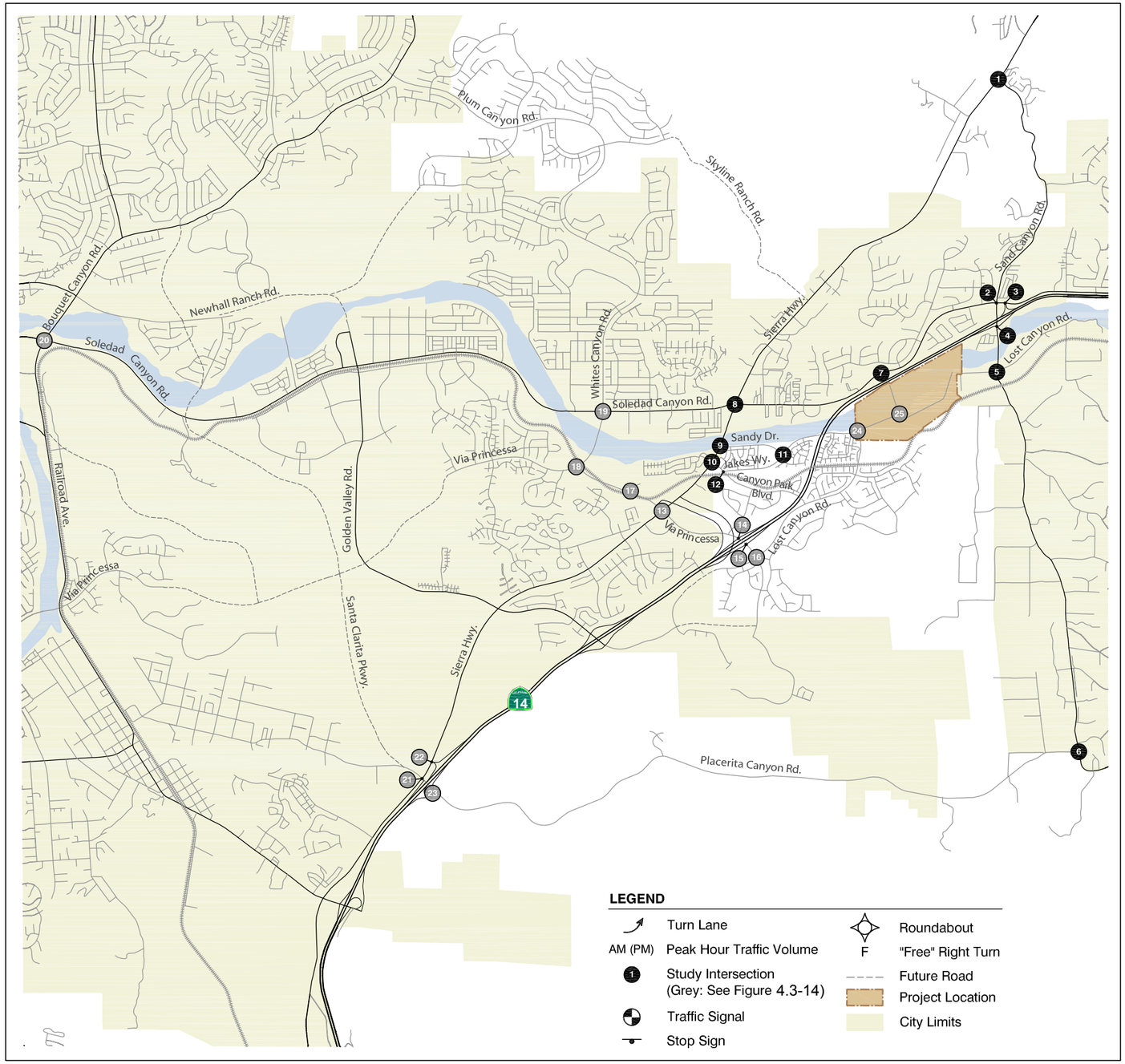
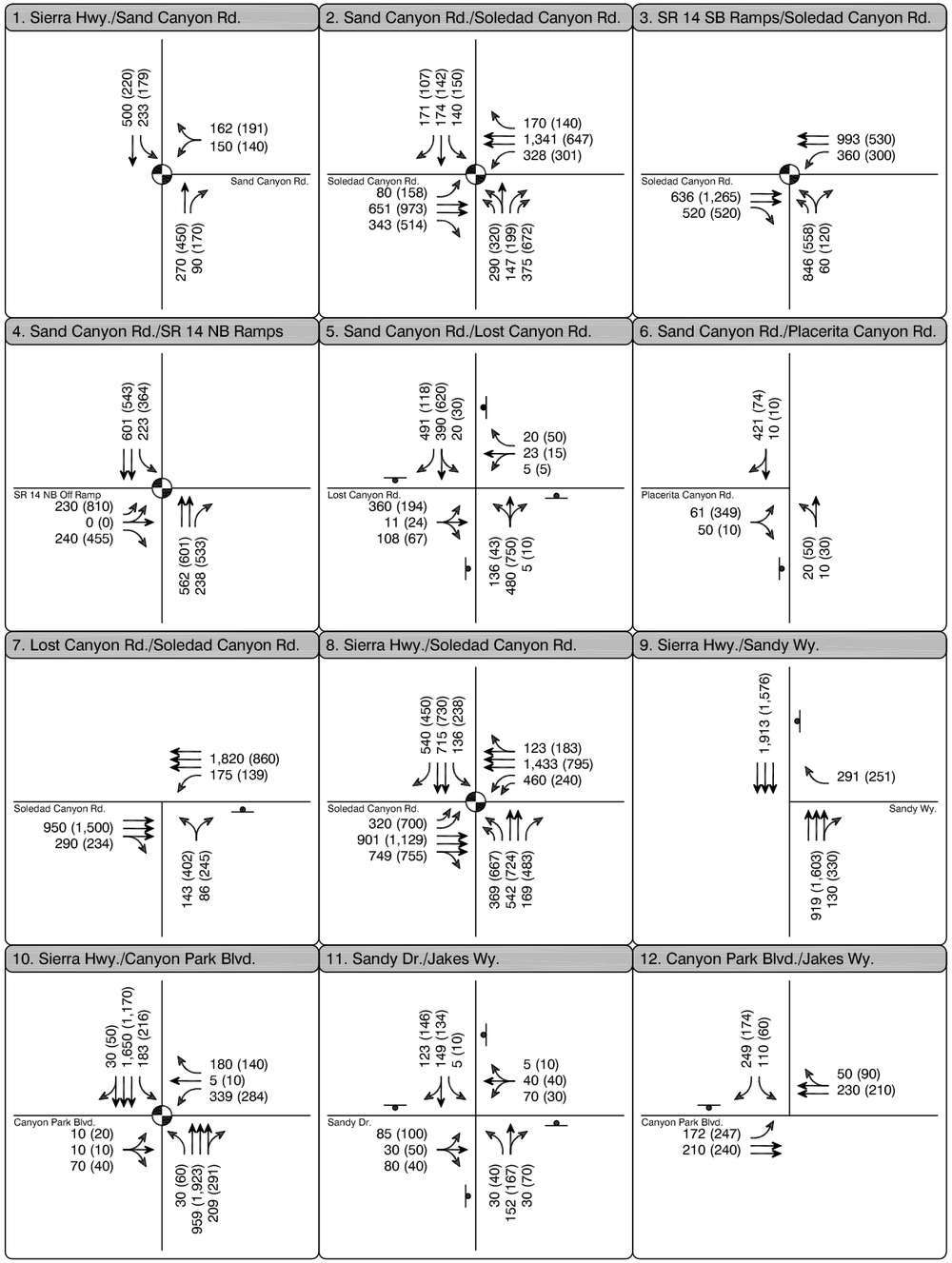
SOURCE: Fehr & Peers - May 2010

FIGURE **4.3-12**

Peak Hour Traffic Volumes and Lane Configurations – 2015 without Project

112-024•09/10





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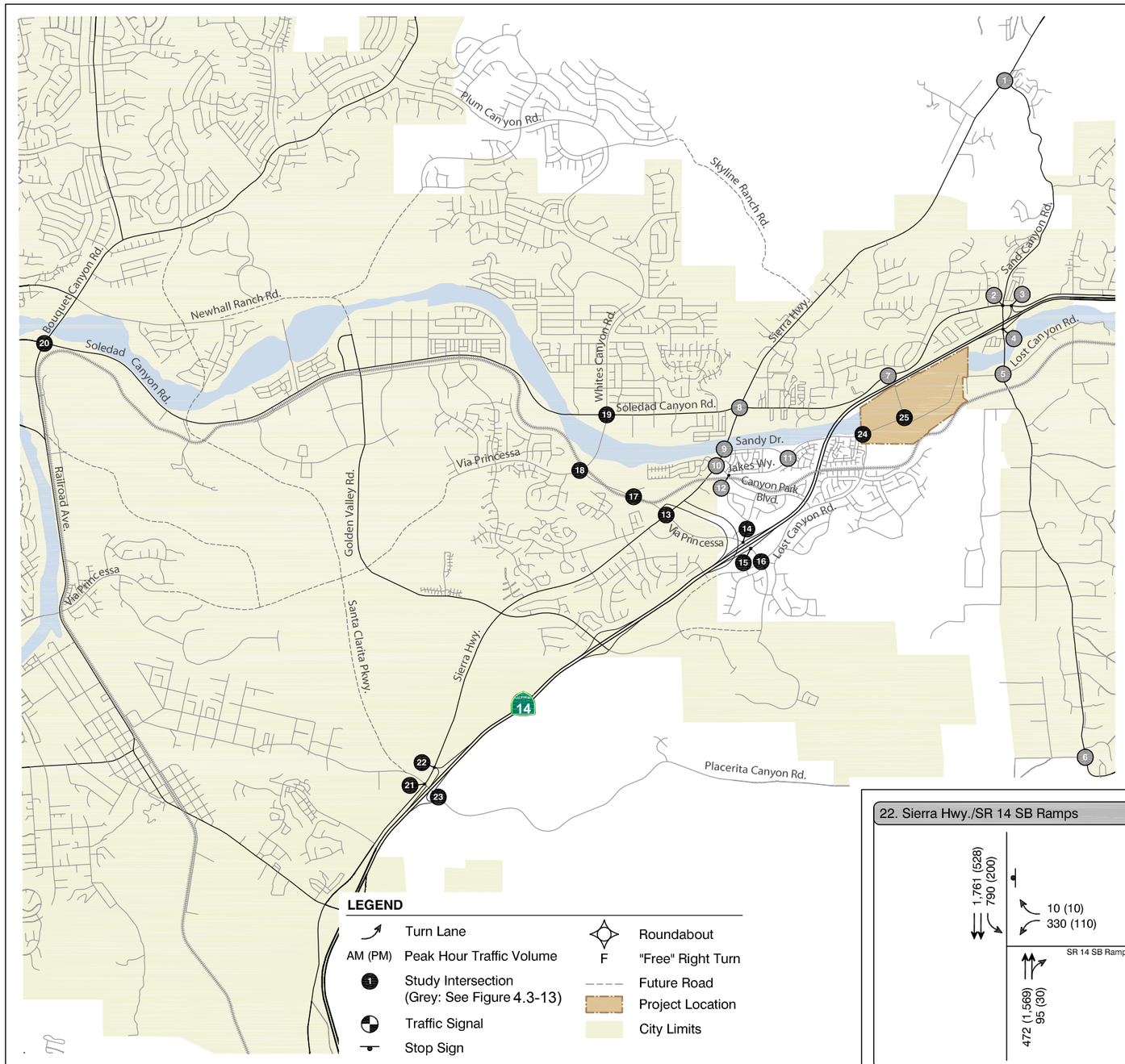
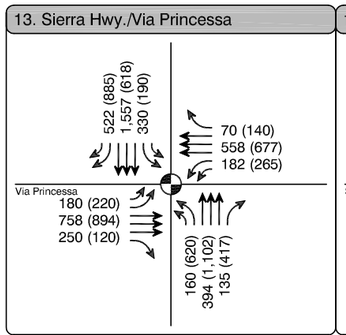
SOURCE: Fehr & Peers - May 2010

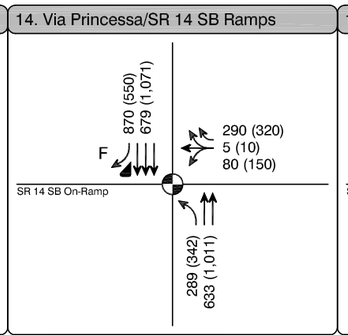
FIGURE **4.3-13**

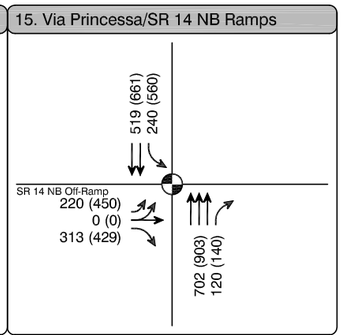
Peak Hour Traffic Volumes and Lane Configurations – 2015 with Project

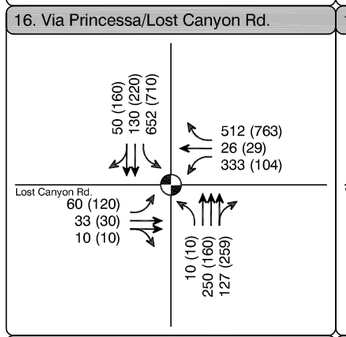
112-024•09/10

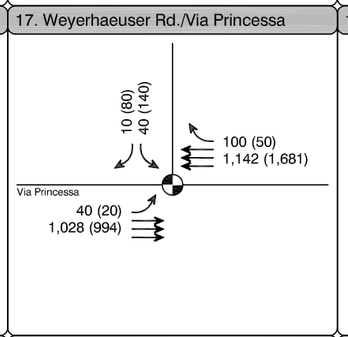


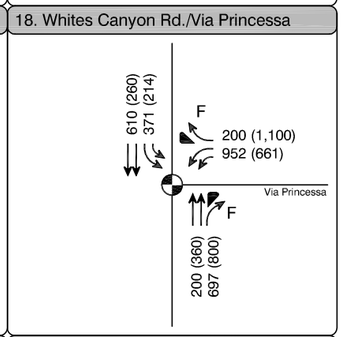


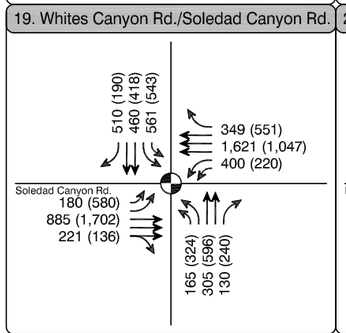


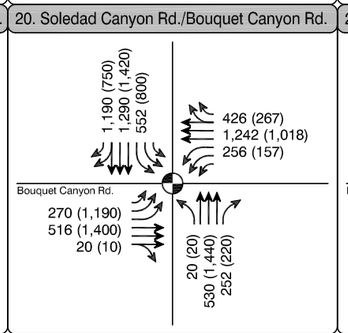


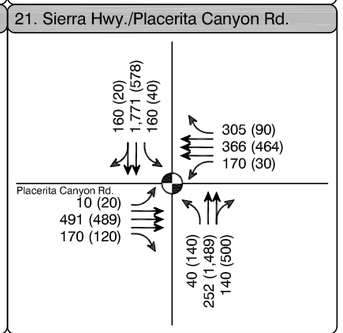


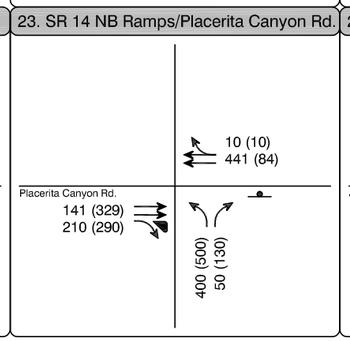


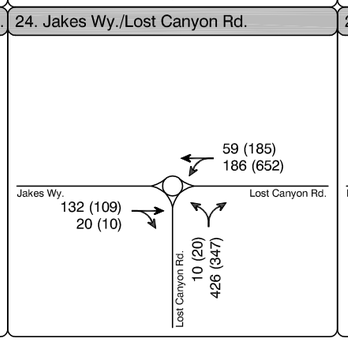


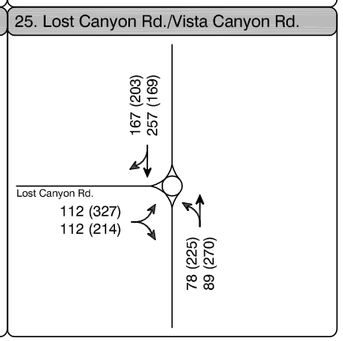












NOT TO SCALE

SOURCE: Fehr & Peers - May 2010

FIGURE **4.3-14**

Peak Hour Traffic Volumes and Lane Configurations – 2015 with Project

In combination with the previously described mitigation measures to be implemented during Phase 1 of the project, **Mitigation Measures 4.3-5** through **4.3-9** have been developed in order to reduce the impacts to these intersections. Recommended mitigation includes restriping Soledad Canyon Road to include a third through lane in each direction from just east of the SR-14 southbound ramp intersection (No. 3) to west of the Sand Canyon Road intersection (No. 2); installing a right-turn overlap arrow on the northbound Sand Canyon Road approach to Soledad Canyon Road; installing a right-turn overlap arrow on the southbound Sierra Highway approach to Soledad Canyon Road (No. 8); installing Intersection Design Option Nos. 2, 3 or 4 at the Sand Canyon Road/Lost Canyon Road intersection (No. 5); installing a traffic signal and adding lanes to the Soledad Canyon Road/Lost Canyon Road intersection (No. 7); and restriping the southbound approach to include a second left-turn lane at the Via Princessa/Lost Canyon Road intersection, which would improve operations at the intersection (No. 16) and, in turn, also would alleviate traffic on the Via Princessa/SR-14 Ramp intersections (Nos. 14 and 15). **Figure 4.3-15, Recommended Mitigation Measures for Project Impacts – 2015,** illustrates the physical improvements described above that would mitigate the identified impacts to these intersections. The applicant would be entitled to a credit under the Eastside Bridge and Major Thoroughfare District in an amount equal to all costs expended to construct the improvements.

As shown in **Table 4.3-13, Intersection Operations – 2015 Conditions with Mitigation,** with implementation of the above described mitigation, impacts to these intersections would be less than significant.

Table 4.3-13
Intersection Operations – 2015 Conditions with Mitigation

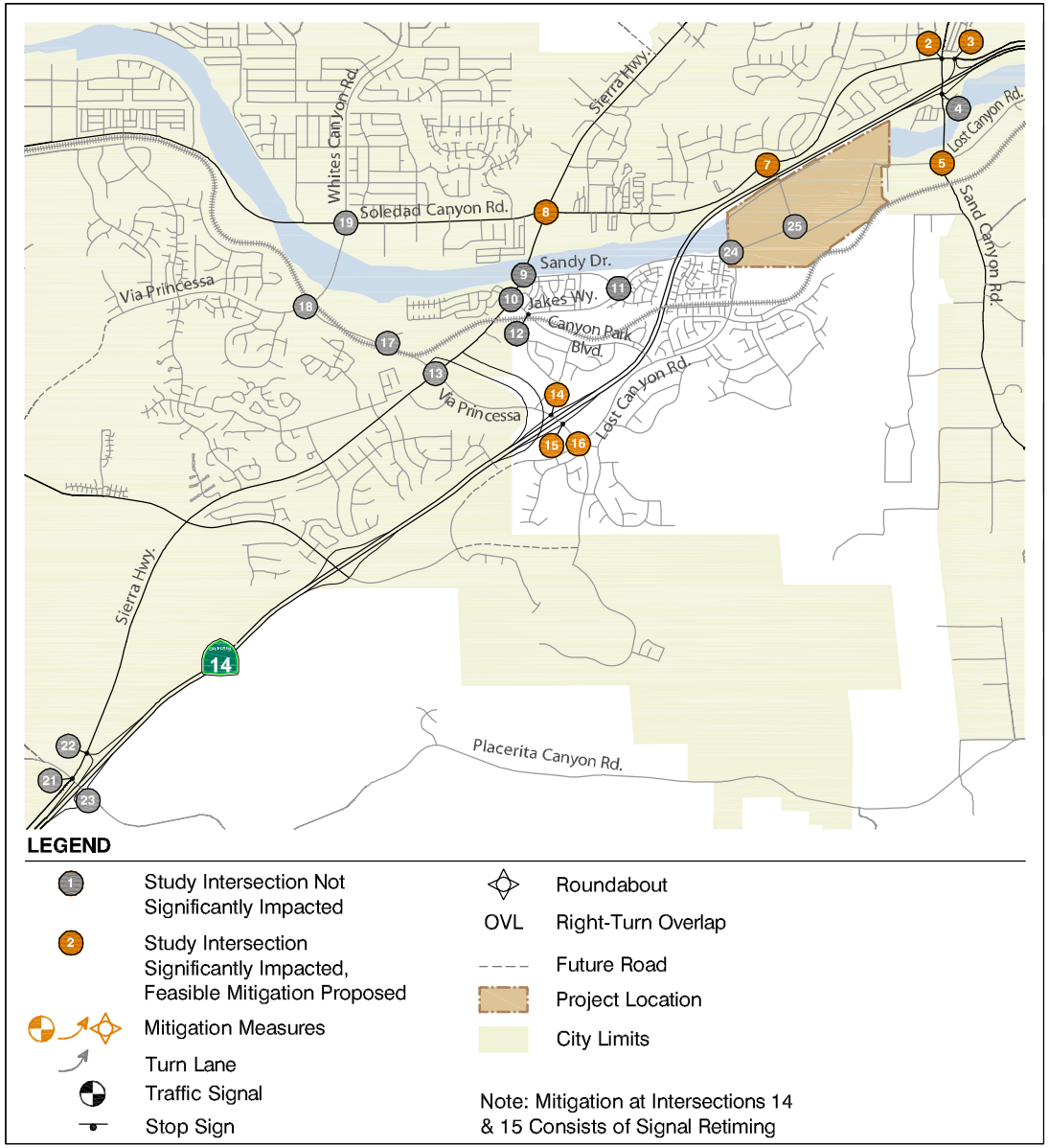
			AM (PM) Peak Hour Delay or V/C Ratio - LOS		
No.	**Intersection**	**Mitigation**	**2015 without Project Conditions**	**2015 with Project - Unmitigated Conditions**	**2015 with Project - Mitigated Conditions**
2	Sand Canyon Road/Soledad Canyon Road	Restripe Soledad Canyon to three TH Lanes, Add NB right-turn overlap arrow	36 - D (68 - E)	38 - D (140 - F)	37 - D (57 -E)
3	Soledad Canyon Road/SR-14 SB Ramps	Restripe Soledad Canyon to three TH Lanes, Convert WB left-turn onto SR-14 to protected phase	151 - F (132 - F)	347 - F (366 - F)	57 - E (80 - E)
5	Sand Canyon Road/Lost Canyon Road	Install roundabout	209 – F (64 - F)	407 - F (373 - F)	22 - C (12 - B)

No.	Intersection	Mitigation	AM (PM) Peak Hour Delay or V/C Ratio - LOS 2015 without Project Conditions	2015 with Project - Unmitigated Conditions	2015 with Project - Mitigated Conditions
7	Soledad Canyon Road/Lost Canyon Road	Install traffic signal	42 – E (59 - F)	>50 - F (>50 - F)	14 - B (20 - B)
8	Sierra Highway/Soledad Canyon Road	Install SB RT overlap phase	**44 - D (73 - E)**	**50 - D (82 - F)**	**48 - D (72 - E)**
14	Via Princessa/SR-14 SB Ramps	Add 2nd SB LT lane and WB RT overlap phase	19 - B (23 - C)	>180 - F (>180- F)	15 - B (40 - D)
15	Via Princessa/SR-14 NB Ramps	Add 2nd SB LT lane and WB RT overlap phase	34 - C (30 - C)	>180 - F (>180- F)	19 - B (28 - C)
16	Via Princessa/Lost Canyon Road (Unincorporated Los Angeles County)	Add 2nd SB LT lane and WB RT overlap phase	0.65 - B (0.80 - C)	0.90 – E (1.19 - F)	0.60 - A (0.81 - D)

Source: Fehr & Peers, Inc., 2010.
SB= Southbound; NB= Northbound; TH = Through

(3) Freeways

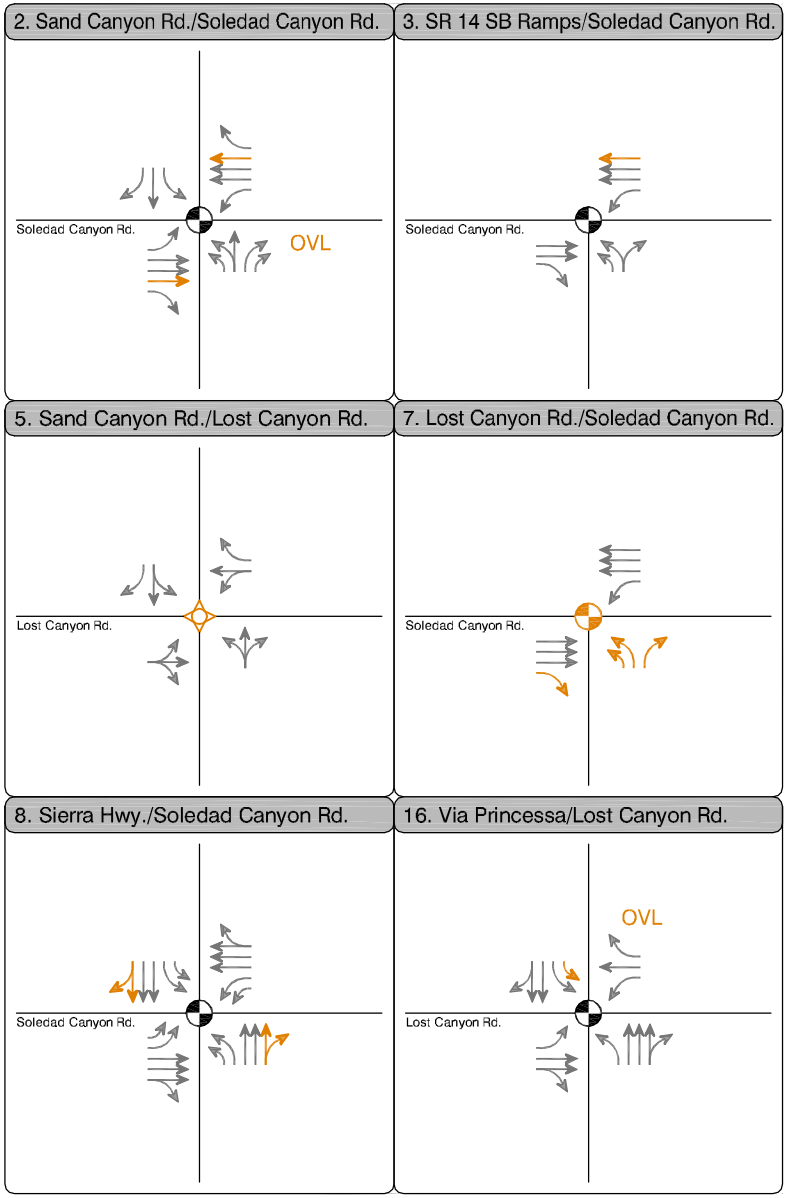
Table 4.3-14, SR-14 Volume Forecasts – 2015 Conditions, illustrates the number of peak hour vehicle trips that would be added by the project to the SR-14 mainline segments. **Table 4.3-15, SR-14 Operations – 2015 Conditions** shows that several SR-14 facilities would operate at unacceptable levels of service under both without and with project conditions. As noted above, a significant impact would occur if the project caused a freeway segment or ramp to worsen from LOS E or better to LOS F, or if it would add trips to a facility operating at LOS F that represents 2 percent or more of its traffic capacity. Significantly, as shown on **Table 4.3-16, SR-14 Freeway Traffic Forecasts - Interim (No Project) Conditions**, the AM peak hour travel demand on southbound SR-14 south of Sand Canyon Road is expected to increase from 4,353 vehicles under existing conditions to 6,160 vehicles under No Project conditions, which is a 42 percent increase. Most of these future vehicle trips would not be generated in the Santa Clarita Valley; rather, they would be generated by future growth occurring north and east of the Valley (mostly within the Antelope Valley). Since no additional capacity improvements are anticipated under interim conditions, the added vehicles will cause southbound vehicle queues to extend northerly beyond the Sand Canyon Road interchange. The results in **Table 4.3-15** reflect this expected operating condition.



LEGEND

- Study Intersection Not Significantly Impacted
- Study Intersection Significantly Impacted, Feasible Mitigation Proposed
- Mitigation Measures
- Turn Lane
- Traffic Signal
- Stop Sign
- Roundabout
- OVL — Right-Turn Overlap
- Future Road
- Project Location
- City Limits

Note: Mitigation at Intersections 14 & 15 Consists of Signal Retiming



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SOURCE: Fehr & Peers - May 2010

FIGURE **4.3-15**

Recommended Mitigation Measures for Project Impacts - 2015

Table 4.3-14
SR-14 Volume Forecasts – 2015 Conditions

Freeway Segment	2015 without Project		2015 with Project		Project Trips	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
NB SR-14 north of Golden Valley Road	2,860	8,670	3,080	8,707	220	37
NB SR-14 north of Via Princessa	2,320	7,950	2,330	7,955	10	5
NB SR-14 north of Sand Canyon Road	2,250	7,380	2,321	7,573	71	193
SB SR-14 north of Sand Canyon Road	6,040	2,940	6,175	3,058	135	118
SB SR-14 south of Sand Canyon Road	6,160	3,190	6,160	3,200	0	10
SB SR-14 south of Via Princessa	7,225	4,050	7,259	4,333	34	283

Source: Fehr & Peers, Inc., 2010
Project trips reflect new vehicle trips generated by proposed land uses with adjustments for reductions in auto travel on SR-14 due to new Metrolink station and bus transfer station.
SB= Southbound; NB= Northbound

Table 4.3-15
SR-14 Operations – 2015 Conditions

Freeway Facility	AM (PM) Peak Hour Density – LOS	
	2015 without Project	2015 with Project
Freeway Mainline Sections		
NB SR-14: Between Golden Valley Road and Via Princessa/Sierra Highway (Weave)	A (F)	**A (F)**
NB SR-14: Between Via Princessa/Sierra Highway and Sand Canyon Road	10-A (40-E)	10-A (40-E)
NB SR-14: Between Sand Canyon Road and Soledad Canyon Road	13-B (F)	13-B **(F)**
SB SR-14: Between Soledad Canyon Road and Sand Canyon Road	F (16-B)	**F** (17-B)
SB SR-14: Between Sand Canyon Road and Via Princessa	F (13-B)	F (13-B)
SB SR-14: Between Via Princessa/Sierra Highway and Golden Valley Road (Weave)	F (C)	F (C)

Freeway Facility	AM (PM) Peak Hour Density – LOS	
	2015 without Project	2015 with Project
Freeway Ramps		
SR-14 NB Off-Ramp/Sand Canyon Road	12 - B (36 - E)	12 - B (36 - E)
SR-14 NB On-Ramp/Sand Canyon Road	15 - B (50 - F)	16 - B (**51 - F**)
SR-14 SB Off-Ramp/Sand Canyon Road/Soledad Canyon Road	41 - F (19 - B)	**42 - F** (20 - C)
SR-14 SB On-Ramp/Sand Canyon Road/Soledad Canyon Road	34 - F (14 - B)	34 - F (15 - B)
SR-14 NB Off-Ramp/Via Princessa	11 - B (35 - D)	13 - B (36 - E)
SR-14 SB On-Ramp/Via Princessa	> 43 - F (17 - B)	> **43 - F** (18 - B)

Source: Fehr & Peers, Inc., 2010.
Notes: Bolded entries indicate a significant impact. Ramps selected for analysis limited to those that would be used by the project to a significant degree.
SB= Southbound; NB= Northbound

Table 4.3-16
SR-14 Freeway Traffic Forecasts – Interim (No Project) Conditions

Freeway Segment	Existing Conditions		Interim (No Project) Conditions	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
NB SR-14 north of Golden Valley Road	2,407	7,083	2,860	8,670
NB SR-14 north of Via Princessa	1,903	5,741	2,320	7,950
NB SR-14 north of Sand Canyon Road	1,700	5,098	2,250	7,380
SB SR-14 north of Sand Canyon Road	3,983	1,906	6,040	2,940
SB SR-14 south of Sand Canyon Road	4,353	2,143	6,160	3,190
SB SR-14 south of Via Princessa	5,288	3,051	7,225	4,050

Note: These forecasts represent the demand for peak-hour travel through each segment. However, upstream and downstream bottlenecks may result in these demand numbers not being achieved within the peak hour.

Freeway facilities were assumed to have hourly capacities of 2,000 passenger cars per lane for mixed-flow lanes and 1,600 passenger cars per lane for HOV lanes. Based on these assumptions, SR-14 has a capacity of 7,600 passenger cars per hour in each direction between Golden Valley Road and Sand Canyon Road and 5,600 passenger cars per hour in each direction north of Sand Canyon Road. For segments south of Sand Canyon Road, 2 percent of capacity represents 152 vehicles per hour per direction. For segments north of Sand Canyon Road 2 percent of capacity represents 112 vehicles per hour per direction. Based on the information presented in **Tables 4.3-14** and **4.3-15**, project buildout would add traffic representing

2 percent or more of the capacity of the segment of NB SR-14 north of Sand Canyon Road (including the N/B and S/B on- and off-ramps), which is projected to operate at LOS F during the PM peak hour, and the segment of SB SR-14 north of Sand Canyon Road, which is projected to operate at LOS F during the AM peak hour. Therefore, impacts to these segments would be potentially significant; the project would not result in a significant impact to any other segment of SR-14.

There presently are no improvements for the SR-14 planned and programmed by Caltrans that would mitigate the identified impacts, nor is there an established funding program in place to collect developer fees to implement any such improvements. Notwithstanding, the project applicant and Caltrans have negotiated a Traffic Mitigation Agreement (See **Appendix 4.3**) that would require the applicant to pay an in-lieu fee to Caltrans for future improvements to SR-14 based upon the project's fair share. The Traffic Mitigation Agreement would be signed by both parties upon project approval (**Mitigation Measure 4.3-9**). However, because there are presently no planned and programmed improvements for SR-14, nor is there an established funding program, the project's payment of an in-lieu fee would not fully mitigate the identified significant impacts. Therefore, mitigation is considered infeasible and the identified impacts would remain significant and unavoidable.

(4) CMP

Under the County's CMP, the proposed project would have a significant impact if it would increase the traffic demand by 2 percent of capacity at a CMP intersection or freeway facility, thereby resulting in or exacerbating LOS F conditions.

The qualifying CMP intersections in the project study area are Sierra Highway/Sand Canyon Road (Study Intersection No. 1), Sierra Highway/Soledad Canyon Road (Study Intersection No. 8), and Sierra Highway/Placerita Canyon Road (Study Intersection No. 21). The qualifying freeway segments in the study area are the northbound and southbound segments of SR-14 north of I-5 to Newhall Avenue.

Table 4.3-17, CMP Analysis – 2015 Conditions, shows the operations of the CMP intersections in 2015 with and without project buildout. **Table 4.3-17** indicates that the project would exacerbate LOS F operations at the Sierra Highway/Soledad Canyon Road intersection and also would increase the traffic demand by at least 2 percent of capacity at the intersection. Therefore, based on the CMP criteria, impacts would be potentially significant at this intersection.

The identified mitigation (install right-turn overlap arrow on southbound approach) at the Sierra Highway/Soledad Canyon Road intersection would restore conditions to "no project" levels, thereby reducing this impact to a less than significant level.

Table 4.3-17
CMP Analysis – 2015 Conditions

	AM (PM) Peak Hour			
	2015 without Project		2015 with Project	
CMP Facility	Traffic Volume	V/C Ratio – LOS	Traffic Volume	V/C Ratio – LOS
Sierra Highway/Sand Canyon Road Intersection	N/A	0.600 – A (0.669 – B)	N/A	0.609 – A (0.700 – B)
Sierra Highway/Soledad Canyon Road Intersection*	N/A	1.019 – F (1.103 – F)	N/A	1.037 – F (1.137 – F)
Sierra Highway/Placerita Canyon Road Intersection	N/A	0.965 – E (0.934 – E)	N/A	0.983 – E (0.945 – E)
SR-14 north of I-5 to Newhall Avenue (Northbound)	3,150 (8,970)	N/A	3,333 (9,124)	N/A
SR-14 north of I-5 to Newhall Avenue (Southbound)	7,105 (4,200)	N/A	7,199 (4,422)	N/A

Source: Fehr & Peers, Inc., 2010.
Note: N/A = Not Applicable.
Capacities used to calculate v/c ratios based on Los Angeles County Traffic Impact Analysis Report Guidelines.
* *According to **Table 4.3-11, Intersection Operations – 2015 Conditions**, this intersection would operate at LOS D during the AM peak hour and at the LOS E/F cusp during the PM peak hour in 2015 with project buildout based on the HCM analysis method recommended by the City. The data in this table is based on the ICU analysis method, which is more conservative at large intersections such as Sierra Highway/Soledad Canyon Road that have coordinated traffic signal timing. This table indicates that this intersection would operate at LOS F, without or with the proposed project.*

Immediately north of I-5 to Newhall Avenue, SR-14 consists of six total northbound lanes and five total southbound lanes. Per CMP analysis methods, each lane is assumed to have a capacity of 2,000 vehicles per hour. The southbound direction operates at LOS F in the AM peak hour and the northbound direction operates at LOS F in the PM peak hour. The project would increase the v/c ratio during the AM peak hour in the southbound direction by 0.009. Similarly, the project would increase the v/c ratio during the PM peak hour in the northbound direction by 0.013. Therefore, impacts to the CMP segment of SR-14 north of I-5 to Newhall Avenue would be less than significant.

(3) Transit System

As noted above, under *State CEQA Guidelines* Appendix G, the proposed project would have a potentially significant impact on transit if it would conflict with existing plans, or otherwise decrease the safety or performance of transit facilities. Under the City's thresholds, a proposed project would have a significant impact on transit if it would:

a. Interfere with existing or planned transit system service or facilities; or

b. Cause an inconsistency with a policy related to transit in the City's Transportation Development Plan (adopted in 2006).

The proposed project would replace the existing, temporary Via Princessa Metrolink rail station with a new on-site rail station. The new station would help relieve parking shortages at other existing stations in the Valley and draw new riders to Metrolink commuter rail. The project also includes a bus transfer center that would connect with Metrolink service. The applicant would contribute funding and land toward the new Metrolink Station and bus transfer station as required by the City's Transit Mitigation Fee. The project would not cause an inconsistency with a policy related to transit in the City's 2006 TDP, nor would it decrease the performance or safety of transit facilities. Therefore, project impacts to the transit system are considered less than significant.

Consistent with the CMP transportation analysis, Metrolink has been provided with a copy of the EIR Notice of Preparation. Additionally, as presented in this section, existing transit services near the project site have been identified; the number of project-related transit trips has been estimated; information on facilities and/or programs that encourage public transit is provided; and, an analysis of the project's potential impacts on transit services has been conducted.

(4) Bicycle/Pedestrian System

As noted above, under *State CEQA Guidelines* Appendix G the proposed project would have a potentially significant impact on bicycle or pedestrian facilities if it would conflict with an adopted plan regarding such facilities or otherwise decrease their performance or safety. Under the City's thresholds, impacts to the bicycle and pedestrian system are considered significant if the proposed project would:

a. Eliminate or adversely affect an existing bikeway or pedestrian facility in a way that would discourage its use;

b. Cause an inconsistency with a relevant policy in the City's Non-Motorized Transportation Plan (adopted in 2008).

The project would add a substantial amount (over 4 miles) of bicycle and pedestrian facilities within the project site. New facilities would also be provided along Lost Canyon Road between the project site and Sand Canyon Road. All of the planning areas within the project site are connected by pedestrian and bicycle pathways. The project would not adversely affect an existing bicycle/pedestrian facility, nor would it decrease the performance or safety of such facilities, nor would it cause an inconsistency with relevant policies in the City's 2008 Non-Motorized Transportation Plan; the Plan includes a number of strategies and policies that are intended to promote biking and walking, which the project clearly does. (See EIR **Section 1.0, Project Description**, for further information regarding proposed bicycle and

pedestrian facilities.) Therefore, project impacts to the bicycle and pedestrian systems are considered less than significant.

(5) Vista Canyon Parking Program

The analysis presented in this section is based on *The Parking Demand Analysis – Vista Canyon Transit-Oriented Development, Planning Areas 1 and 2* (Parking Demand Analysis), prepared by Richard W. Willson, PhD, FAICP. (See **Appendix 4.3**) Dr. Willson has extensive experience in shared parking programs, the parking characteristics of transit-oriented development, and urban planning. Dr. Willson also is a Professor of Urban and Regional Planning at California State Polytechnic University, Pomona.

The proposed project is comprised of four planning areas, Planning Area 1 (PA-1), Planning Area 2 (PA-2), Planning Area 3 (PA-3), and Planning Area 4 (PA-4). The Parking Analysis addresses Planning Areas 1 and 2 only, and uses the base parking rates and methodology of the *Urban Land Institute (ULI) Shared Parking Model, 2nd Edition.* Parking provided in Planning Areas 3 and 4 would be based on the City of Santa Clarita Unified Development Code (UDC) parking requirements, which will be included in the Vista Canyon Specific Plan, and, consequently, no supplemental analysis is necessary.

As discussed above, the proposed project is a mixed-use, transit-oriented development (TOD), which will include a Metrolink Station and City of Santa Clarita bus transfer station. The Vista Canyon Metrolink Station would replace the existing, temporary Via Princessa station, which is located approximately 2 miles to the west of the Vista Canyon project site. The proposed project also would include residential, office, retail, hotel and recreation uses. **Table 4.3-18, Planning Areas 1 and 2 Land Uses**, summarizes the project components of PA-1 and PA-2.

Table 4.3-18
Planning Areas 1 and 2 Land Uses

Land Use	Amount
Residential units	820 multi-family dwelling units
Commercial – Retail, Restaurant, Theater, Shops, etc.	158,000 GSF
Hotel	200 rooms (140,000 GSF)
Office	596,000 GSF
Metrolink/Santa Clarita Transit station	750 parking spaces

Based on the land use types that would comprise Planning Areas 1 and 2, and the substantial opportunity for shared parking, it is not necessary, for the reasons explained below, to provide a number of parking spaces in strict conformance with UDC requirements in order that there be adequate parking capacity.

"Shared parking is the use of a parking space to serve two or more individual uses without conflict or encroachment." (ULI, 2005) Shared parking has been a fundamental principle of mixed-use planning for over a century and is increasingly utilized in mixed-use and transit-oriented projects. The goal of shared parking is to find a balance between providing adequate parking and avoiding the negative consequences of devoting excessive land or resources to parking.

Shared parking is applied to mixed-use projects in which the land uses have different occupancy times for parking. For example, if a restaurant has peak demand in the evening while an office building has peak demand during the day, those two uses can share a portion of the parking. In other words, a single space can serve both the office use (peak demand of 2:00 PM) and the restaurant (peak demand of 8:00 PM). The demand for each land use is predicted on an hourly basis. The hourly demand is summed to arrive at the total peak demand (often occurring at 1:00 PM on weekdays) for a mixed use project. Project-specific parking requirements are then adopted based on peak demand plus a vacancy factor of between 5 percent and 10 percent, which is typical in any mixed-use development.

Shared parking assumes that the design and management of the parking facility allows for sharing by not physically separating parking spaces for each land use. Shared parking uses a "pool" concept where spaces are not permanently allocated to a particular use at all times. Parking management tools are used to ensure that each land use receives the appropriate amount of parking without conflict. In this way, the efficiency of the mixed-use development concept is realized by avoiding having each use provide parking that is unoccupied for part or most of the day.

In addition to shared parking, the proposed project's design as a TOD also provides additional opportunities for parking. TODs have greater use of non-automobile modes for commuting and shopping as well as lower auto ownership on the part of residents. Thus, the use of standard parking rates in the mixed-use TOD portion of the project would oversupply parking, increase the cost of the development, and compromise project design. The Metrolink Station parking is included in the shared parking analysis since commuter parking is a part of the development concept. Commuter parking has low occupancy in the evenings and on weekends, making it a good match with certain retail and restaurant uses, and overnight parking for residents.

As a baseline, the Parking Demand Analysis provides calculations of parking requirements under the existing City of Santa Clarita code, assuming no adjustment for shared parking or transit use. A shared

parking analysis is then provided, using the base parking rates and methodology of the *ULI Shared Parking Model, 2nd Edition.* **Table 4.3-19, Comparison of Parking Levels**, provides a comparison of the UDC parking requirements and the parking requirements recommended for PA-1 and PA-2. The ULI model and associated adjustment procedures are included in the Specific Plan, and would replace the existing UDC requirements for the PA-1 and PA-2 of the project.

Table 4.3-19
Comparison of Parking Levels

	UDC Parking Requirements[6]	Vista Canyon Parking Reduction/Shared Parking Demand Analysis	Vista Canyon Parking Supply
Residential spaces, excluding visitor; not shared	1,516	1,277	1,277
Visitor Parking (Residential Uses)	410	Part of shared parking pool	Part of shared parking pool
Commercial, Metrolink, and residential visitor spaces; shared)	4,761	2,939[7]	3,073
Total spaces	6,687	4,216	4,390

The analysis of parking requirements addresses residential parking and non-residential parking separately. Each is addressed below.

Residential Parking (PA-1 and PA-2)

As the proposed project would be developed in phases over time, residential uses in PA-1 and PA-2 will be required initially to be parked at a number equal to the City's UDC requirements until such time that the Metrolink Station and 50,000 square feet of non-residential floor area are constructed. The interim parking spaces in excess of the requirements of this parking analysis would be contained within temporary surface parking lots.

Once the Metrolink Station and 50,000 square feet of non-residential uses are constructed, the multi-family residential uses in PA-1 and PA-2 would be supported by a total of 1,277 required parking spaces, none of which would be part of the shared parking pool. This number of parking spaces represents a 16 percent reduction from the City's UDC requirements.

6 These calculations are based on project data derived from TTM 69164 using parking calculations from the City's Unified Development Code.

7 Includes 8% parking vacancy factor.

This reduction is supported by research on TOD and the ULI recommended parking ratios of 1.5 spaces per unit for rental units and 1.7 spaces per unit for ownership units. The executive summary of the Caltrans *Statewide Transit-Oriented Development: Factors for Success in California* (2004) states that "[r]esearch indicates that TOD has the potential to reduce parking per household by 20 percent, as compared to non-transit oriented land uses."

Furthermore, as noted above, TOD residents have lower automobile ownership than surrounding non-transit oriented development. This is due to the fact that TOD residents have smaller household sizes than the typical suburban single family residence, condo or apartment; parking in TOD is typically in structures or subterranean garages, managed by associations, eliminating the use of parking areas for storage (which is very common in traditional suburban development); and, TOD includes a mix of land uses in close proximity which encourages walking and bicycling.

Based upon this research and documentation, the Parking Demand Analysis determined that a 16 percent reduction in required residential parking is appropriate and justified.

Non-Residential Parking (PA-2)

Parking for the non-residential uses within PA-2 of the proposed project is based upon the Parking Demand Analysis, which is a true "shared parking program" that utilizes the base parking rates and methodology of the *ULI Shared Parking Model, 2nd Edition.* The Parking Demand Analysis concludes as follows:

- The peak weekday parking demand is 2,721 parking spaces for PA-1 and PA-2.
- December is the peak month for demand, which corresponds to a higher use of retail parking.
- Month-to-month demand is relatively consistent, varying less than 120 spaces.
- The peak hour of parking demand is 2:00 PM.
- Excess capacity exists in the weekday evening hours. Over 1,000 parking spaces are unoccupied between 6:00 PM and 6:00 AM on weekdays.
- Excess capacity exits on weekends. Peak weekend demand (1:00 PM) is 1,133 parking spaces or 42 percent of the peak weekday demand.

Parking management is an essential element to the successful operation of a mixed-use TOD. The project will require shared parking management practices and reciprocal easement agreements to ensure that parking supplies are protected for each use and that design features allow different uses to share parking.

In conclusion, the Parking Demand Analysis confirms that the proposed parking supply for PA-1 and PA-2 would meet and exceed the proposed project's parking demand.[8]

6. MITIGATION MEASURES ALREADY INCORPORATED INTO THE PROJECT

As indicated previously, the project is a mixed use, transit-oriented development that encourages transit use, walking and bicycling. The project would create less vehicle trips, as compared to a similar sized, typical suburban development with little or no transit accessibility.

Project design features that address traffic and access already incorporated into the project include a new Metrolink rail station, an adjacent bus transfer center, Class I bicycle/pedestrian/equestrian trails (along the Santa Clara River, the southern project boundary, and at various locations within the project), paseos to accommodate walking, and roadway improvements including Lost Canyon Road and the Vista Canyon Road bridge.

7. MITIGATION MEASURES PROPOSED BY THIS EIR

The City of Santa Clarita and County of Los Angeles have established a fee program to fund construction of new significant transportation infrastructure improvements. This program consists of six B&T Fee Districts, which provide an equitable financing mechanism by which new development within an identified area will share the cost of providing full mitigation improvements by payment of appropriate fees. Each of the B&T districts within the study area is considered a full-improvement district, meaning that the collected fees, combined with other sources, have been calculated to cover all needed improvements.

The proposed project is located within the Eastside B&T District. The Eastside and Via Princessa B&T districts include a number of major infrastructure improvements within the study area. Specific improvements are listed below as part of the recommended mitigation measures. In the event the project applicant constructs B&T district identified improvements, the applicant becomes eligible for B&T district credits, which can be used to offset district fee payments.

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8 At the City's request, a third party, independent, review of the Parking Demand Analysis was conducted by Donald C. Shoup, PhD. Dr. Shoup is a Professor of Urban Planning at the University of California, Los Angeles, who received his PhD from Yale University and has extensive experience in parking management, transportation and land use. Dr. Shoup's memorandum summarizing his review of the Parking Demand Analysis is included in EIR **Appendix 4.3**. The memorandum supports the methodology and conclusions reached in the Parking Demand Analysis.

The following mitigation measures shall be completed as part of Phase 1 of the proposed project in order to reduce the project's Phase 1 impacts to less than significant levels:

4.3-1 Prior to the completion and occupancy of project Phase 1, the project applicant shall convert the westbound left-turn lane on Soledad Canyon Road onto the SR-14 southbound on-ramp from a permitted to protected signal phase, and retime this traffic signal and the adjacent Sand Canyon Road/Soledad Canyon Road signal to optimize traffic flow.

4.3-2 Prior to the completion and occupancy of project Phase 1, the project applicant shall take those steps necessary that result in retiming the traffic signals at the Via Princessa/SR-14 SB ramps and Via Princessa/SR-14 NB ramps intersections to optimize traffic flow.

4.3-3 Prior to the completion and occupancy of project Phase 1, the project applicant shall install a westbound right-turn overlap arrow at the Via Princessa/Lost Canyon Road intersection.

In addition to the above mitigation measures, the following additional mitigation measures shall be implemented prior to project buildout or completion in order to reduce the project's impacts at buildout to less than significant levels.

4.3-4 Prior to project completion and full occupancy (beyond Phase 1), the project applicant shall construct the following improvements at the Sand Canyon Road/Soledad Canyon Road and SR-14 SB Ramps/Soledad Canyon Road intersections:

- Restripe Soledad Canyon Road to include a third through lane in each direction from just east of the SR-14 ramp intersection to west of the Sand Canyon Road intersection.
- Install a right-turn overlap arrow on the northbound Sand Canyon Road approach to Soledad Canyon Road.
- Retime and optimize operations of both traffic signals based on the revised lane geometrics and signal phasings.

4.3-5 Prior to the completion and full occupancy of the project (beyond Phase 1), the project applicant shall install the selected Intersection Design Option (No. 2, 3 or 4) at the Sand Canyon Road/Lost Canyon Road intersection. If Intersection Design Option No. 1 is selected, the project would have a significant, unavoidable impact.

The four design options are:

- Option 1 (Four-Way Stop) – this design option (See **Figure 4.3-16** and **4.3-16a**) is presently in place at the intersection. The intersection is presently congested in the morning and afternoon when Pinecrest School and Sulphur Springs Elementary School are in session due to student drop-off and pick-up. Under this design option, the operation of this intersection in the future would worsen to a Level of Service (LOS) F with or without the Vista Canyon project. If this option is selected, the project would result in a significant unavoidable impact at the intersection.

- Option 2 (Signalized Intersection "Look Ahead Signal") – this design option (See **Figure 4.3-17**) would result in a signalized intersection, with a "look ahead" signal at the southwest corner to address northbound "line of sight" requirements. Minimal widening of the intersection would occur with this design option, with right-of-way necessary at the northwest and southeast corners. Encroachment within the protected zone of the heritage oak tree located along the eastern edge of Sand Canyon Road would remain similar to the existing condition. A fence, located within the right-of-way, would have to be removed to adhere to "line of sight" requirements. Option 2 would result in the improved operation of the intersection in the future (LOS D) even with future growth (including Vista Canyon), as compared to the existing four-way stop design.

- Option 3 (Roundabout) – this design option (See **Figure 4.3-18** and **4.3-18a**) would include the installation of a "roundabout" or traffic circle at the intersection. This option would involve the relocation of the intersection to the north and west to adhere to northbound "line of sight" requirements. Right-of-way acquisition would be necessary on all four corners; most of it would come from the northwest corner (which is presently vacant). Encroachment within the protected zone of the heritage oak tree located along the eastern edge of Sand Canyon Road would still occur, consistent with the existing condition. From a traffic operational standpoint, this design option would be the best of the four, improving the future LOS F under the existing design to an LOS C in the AM peak hour and LOS B in the PM peak hour even with future growth (including the Vista Canyon project).

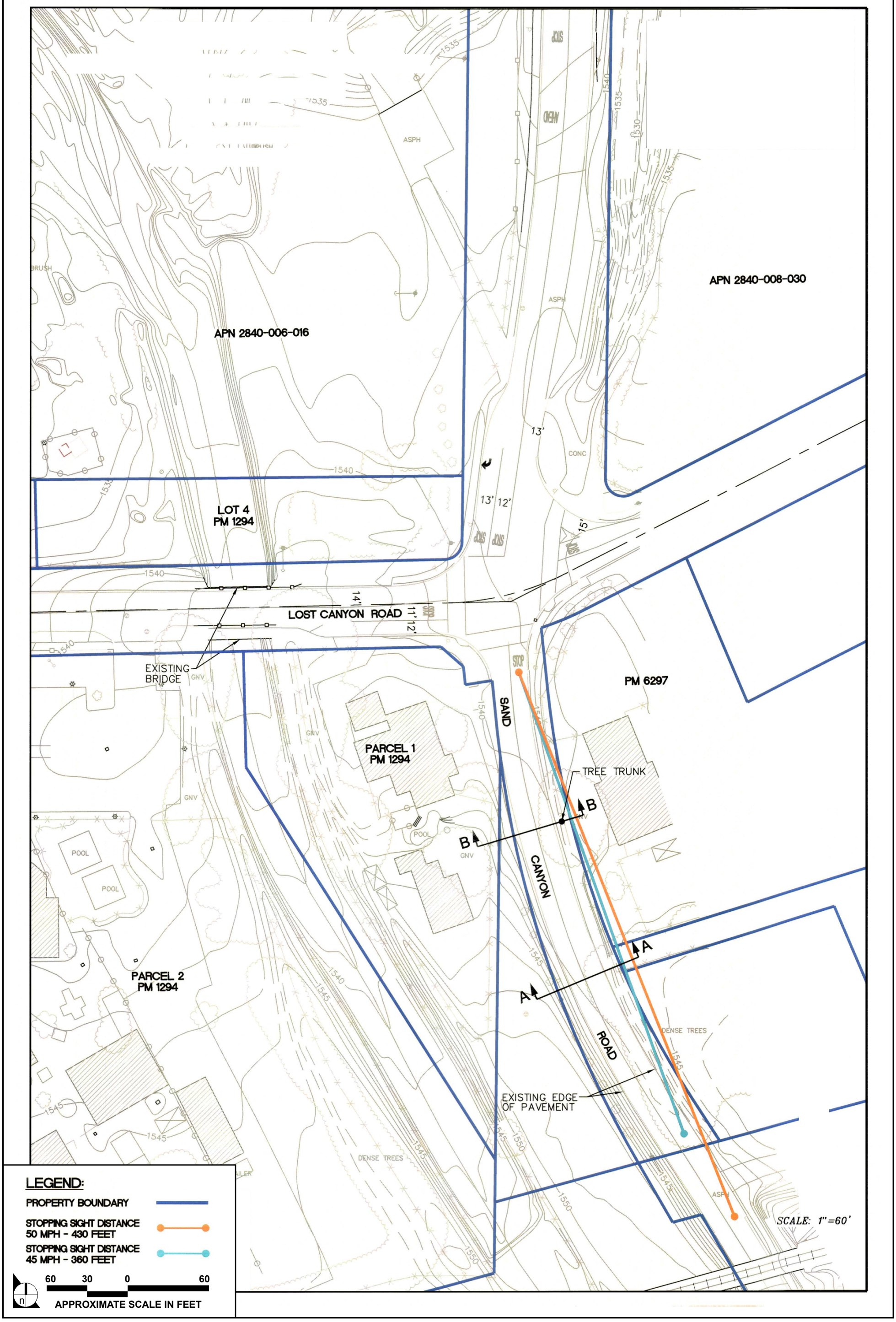
- Option 4 (Signalized Intersection - Standard Configuration) – this design option (See **Figure 4.3-19**) improves the intersection of Lost Canyon Road/Sand Canyon Road with a right-turn lane extension. This option would require the acquisition of right-of-way on the northwest and southeast corner. A "line of sight" easement would be needed from three properties located east of Sand Canyon Road and south of the intersection. All vegetation and fencing within this easement would need to be removed, including the heritage oak tree located along the eastern edge of Sand Canyon Road. Similar to the "Look Ahead Signal" design option, this option would result in the improved operation of the intersection (LOS D), as compared to the existing design, even with future growth (including the Vista Canyon project).

4.3-6 Prior to project completion and full occupancy (beyond Phase 1), the project applicant shall construct the following improvements at the Soledad Canyon Road/Lost Canyon Road intersection:

- Install a traffic signal with signal equipment placed in locations that accommodates the planned restriping of the road to six lanes.

- Construct an exclusive right-turn lane on the eastbound Soledad Canyon Road approach consistent with the condition of approval previously placed on the undeveloped parcel adjacent to this intersection.

- Construct two left-turn lanes and one right-turn lane (with a right-turn overlap phase) on the Vista Canyon Road approach. Each lane should provide 125 feet of storage.

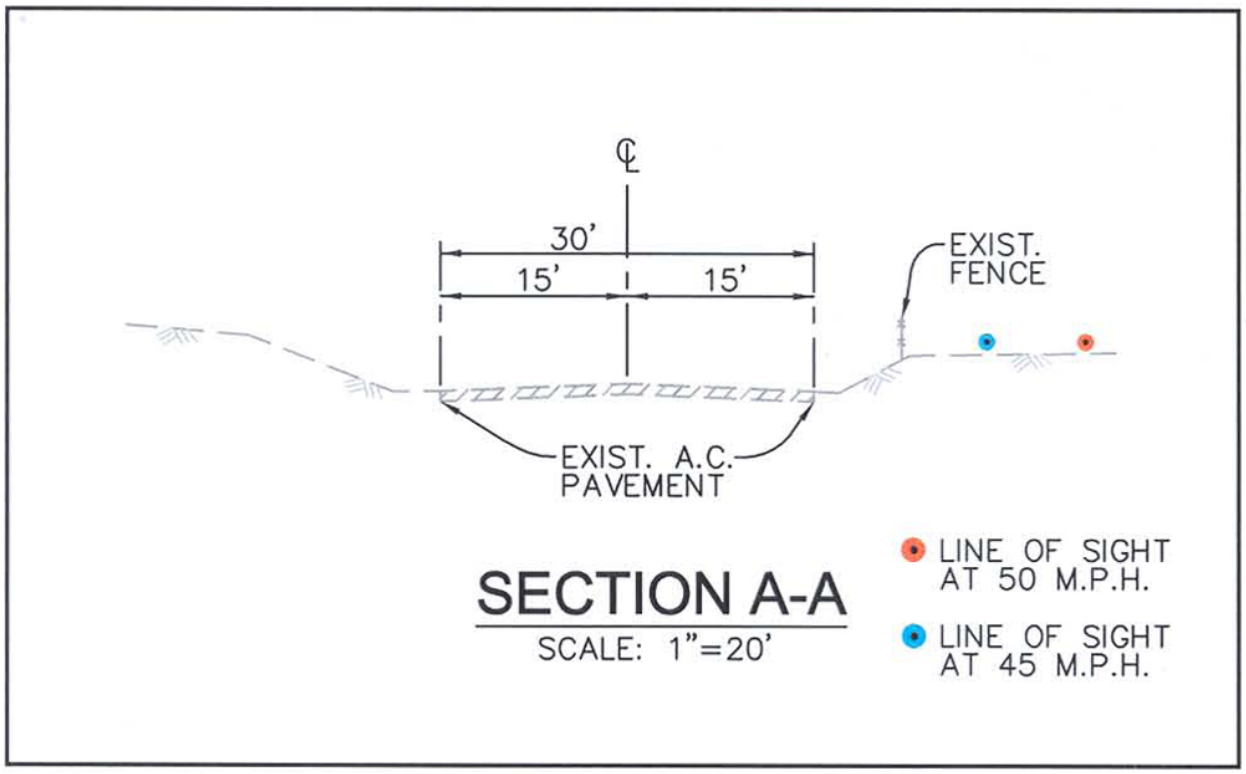


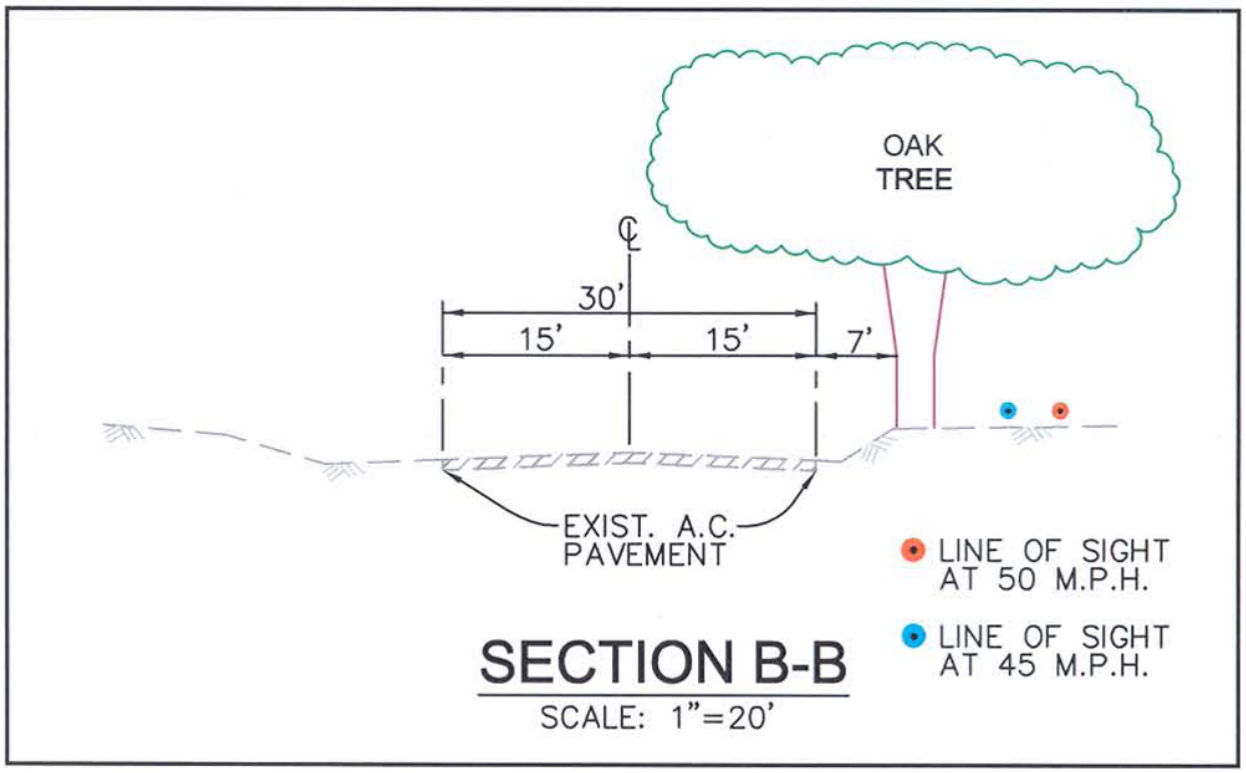
SOURCE: Alliance Land Planning & Engineering, Inc. – September 2010

FIGURE **4.3-16**

Four-Way Stop

112-024•10/10



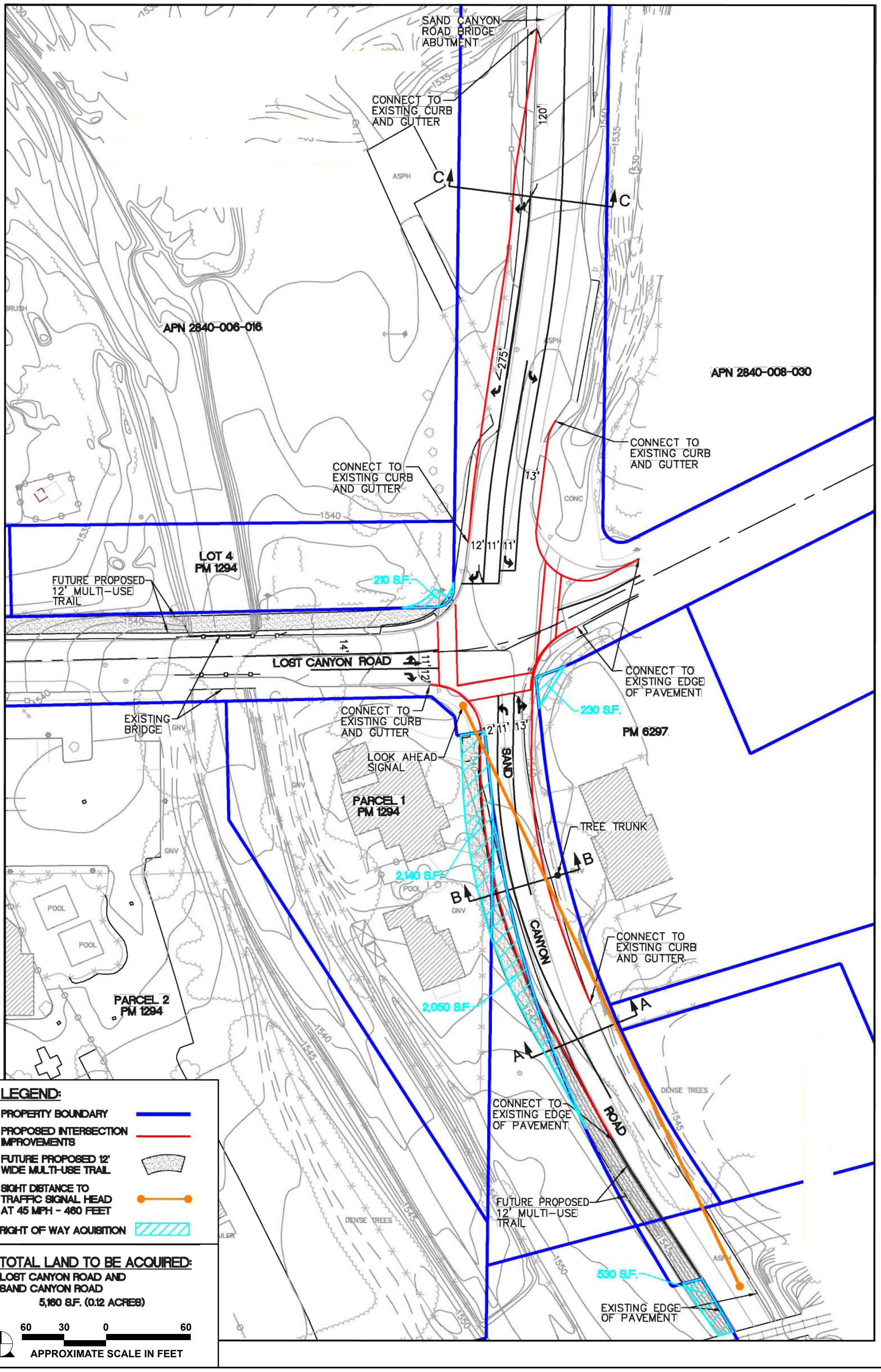


SCALE NOTED ABOVE

SOURCE: Alliance Land Planning & Engineering, Inc. – September 2010

FIGURE **4.3-16a**

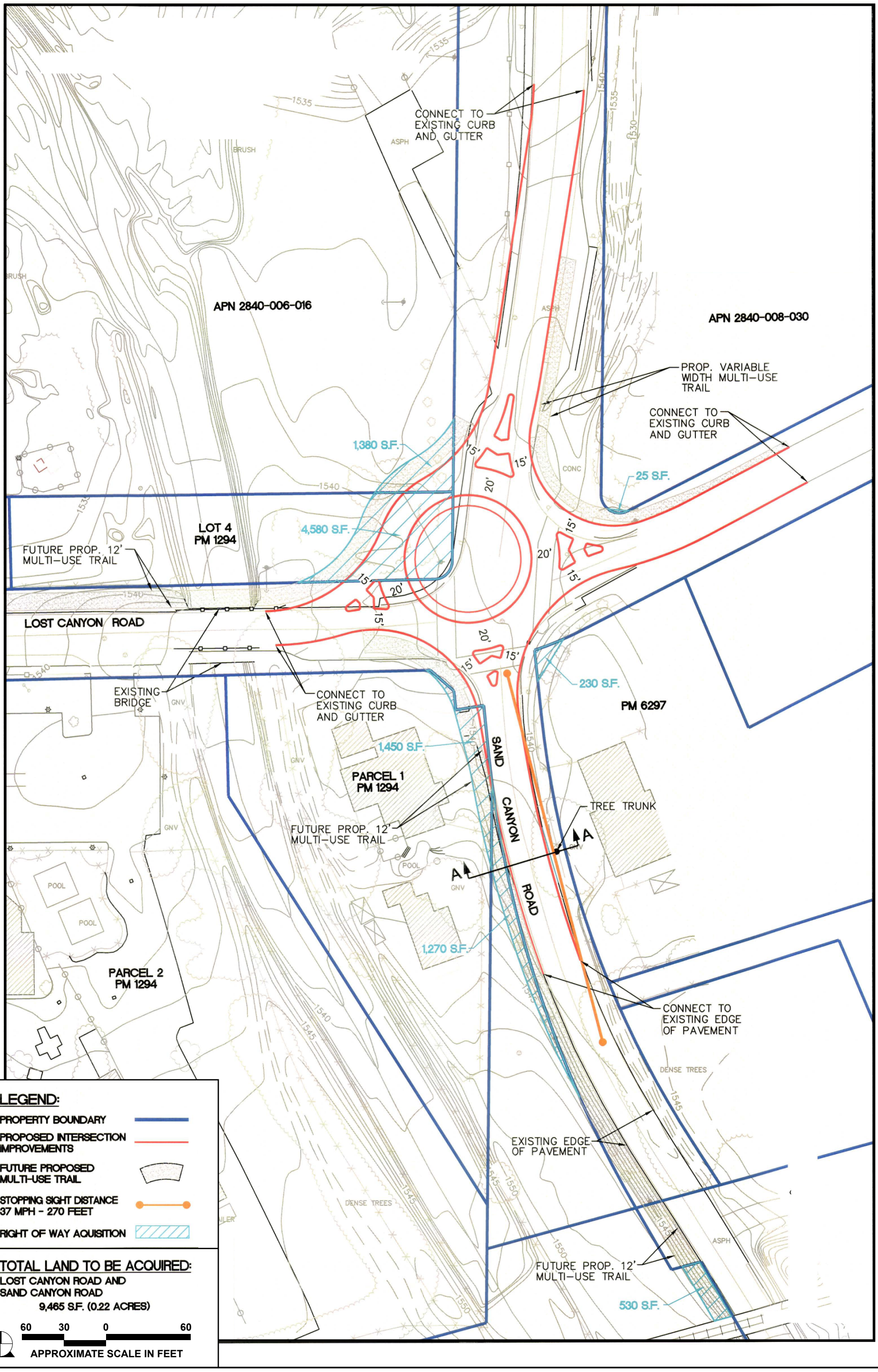
Lost Canyon Road/Sand Canyon Road Cross-Section – Option 1



SOURCE: Alliance Land Planning & Engineering, Inc. – September 2010

FIGURE **4.3-17**

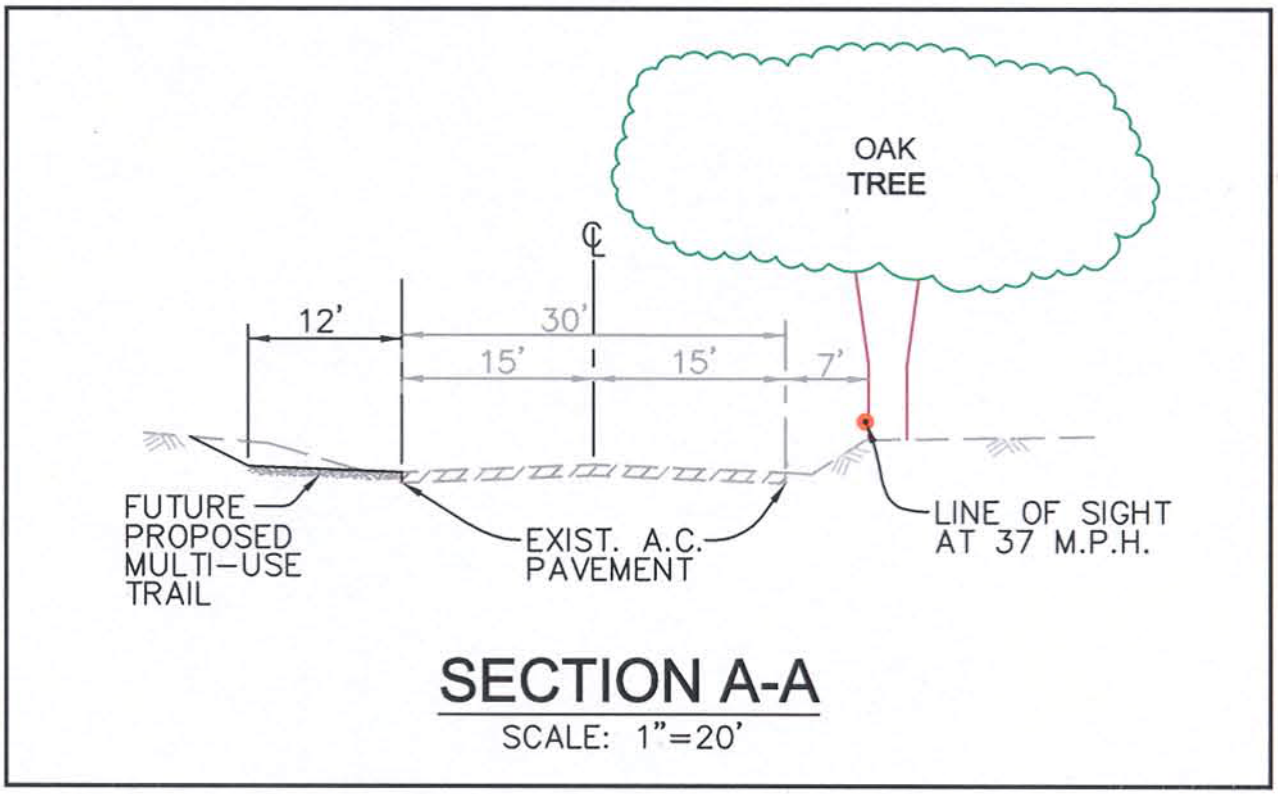
Look Ahead Signal – Option 2



SOURCE: Alliance Land Planning & Engineering, Inc. – September 2010

FIGURE **4.3-18**

Lost Canyon Road/Sand Canyon Road Roundabout – Option 3

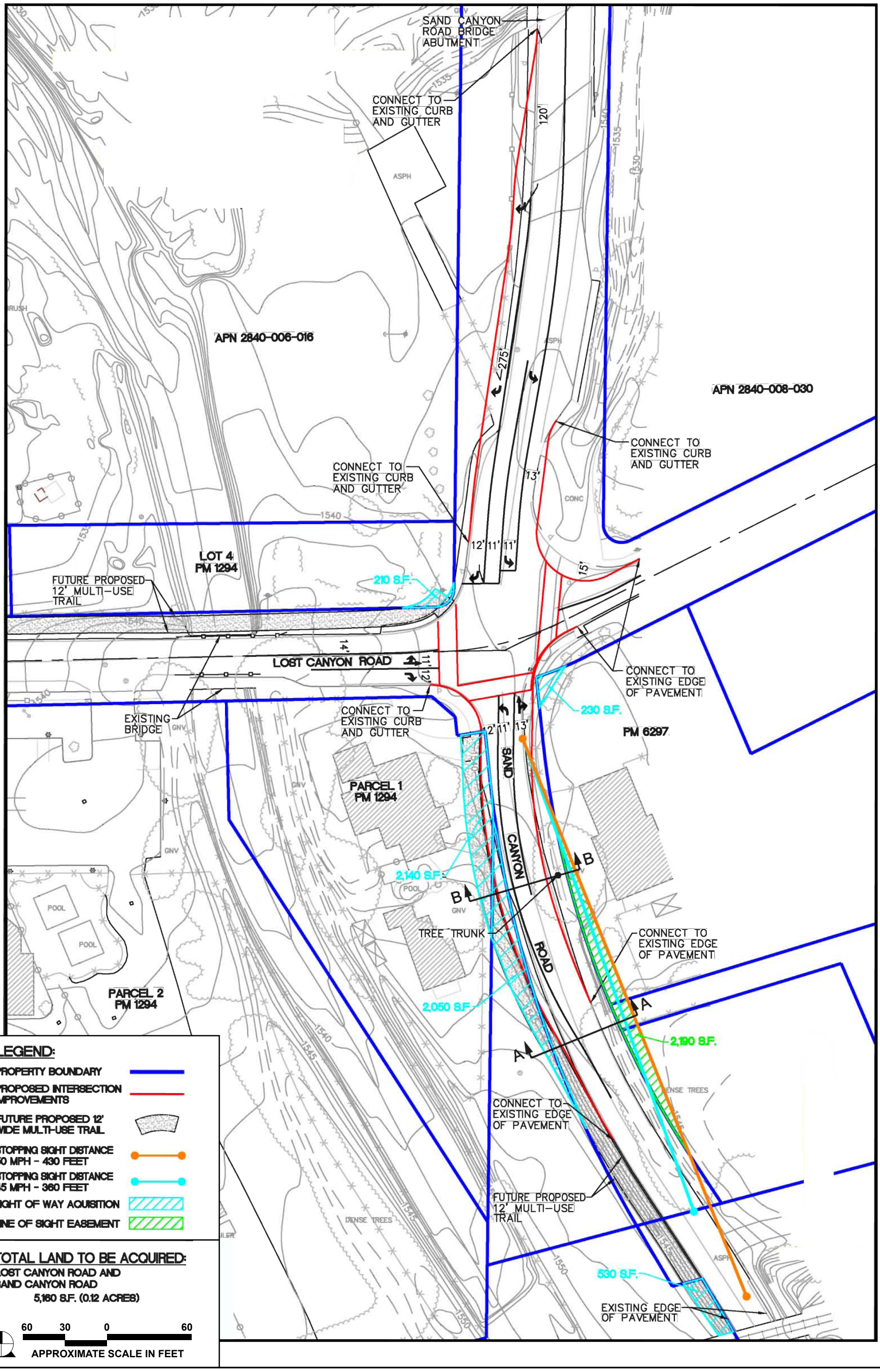


SCALE NOTED ABOVE

SOURCE: Alliance Land Planning & Engineering, Inc. – September 2010

FIGURE **4.3-18a**

Lost Canyon Road/Sand Canyon Road Cross-Section – Option 3



SOURCE: Alliance Land Planning & Engineering, Inc. – September 2010

FIGURE **4.3-19**

Lost Canyon Road/Sand Canyon Road Right-Sanatized Intersection – Option 4

- Lengthen the westbound left-turn lane on Soledad Canyon Road from 140 feet to 200 feet to accommodate the projected 95th percentile vehicle queue of 140 feet and to provide opportunities for deceleration.

4.3-7 Prior to project completion and full occupancy (beyond Phase 1), the project applicant shall construct the following improvement at the Via Princessa/Lost Canyon Road intersection:

- Restripe the southbound approach to include a second left-turn lane.

4.3-8 Prior to project completion and full occupancy (beyond Phase 1), the project applicant shall construct the following improvement at the Soledad Canyon Road/Sierra Highway intersection:

- Install a right-turn overlap arrow on the southbound Sierra Highway approach to Soledad Canyon Road.

4.3-9 The applicant shall execute and adhere to the terms of the mitigation agreement with Caltrans to minimize the project's impacts to SR-14.

4.3.10 The applicant shall comply with the requirements of the Vista Canyon Parking Demand Analysis.

With respect to the identified significant impacts at the SR-14 northbound and southbound ramps/Via Princessa intersections, implementation of **Mitigation Measures 4.3-2, 4.3-3**, and **4.3-7** would reduce the impacts to a level below significant. Therefore, no further mitigation is necessary.

8. CUMULATIVE IMPACTS

This section describes the effects of the proposed project under cumulative conditions and is based on application of the 2030 version of the SCVCTDM. Consistent with the methodology utilized by the City, the analysis of the roadway system under this scenario focuses on daily roadway segment operations.

a. Roadway System

Consistent with the City's Draft Circulation Element (October 2008), the following roadway improvements are included in the cumulative impacts scenario:

- Sierra Highway is widened to six lanes from Soledad Canyon Road north beyond Sand Canyon Road and from Golden Valley Road south to beyond Placerita Canyon Road;
- Sand Canyon Road is widened to four lanes from Sierra Highway south to Soledad Canyon Road;
- Sand Canyon Road is widened to six lanes from SR-14 south to Lost Canyon Road;
- Whites Canyon Road is widened to six lanes north of Soledad Canyon Road; and

- SR-14 is assumed to have one additional mixed-use travel lane in each direction plus a reversible HOV lane beginning at I-5 and extending throughout the study area.

The proposed project would result in a slightly different circulation plan in the vicinity of the project as compared to the City's circulation plan included in the SCVCTDM. A description of the project's circulation plan relative to the model and an analysis of the effects of the modified circulation system is provided in **Appendix 4.3**. The proposed circulation plan would cause a modest redistribution of cumulative traffic such that the analysis determined that the proposed circulation system would not cause any adverse circulatory impacts when compared to the City's General Plan or the Draft OVOV circulation plan.

(1) Arterials

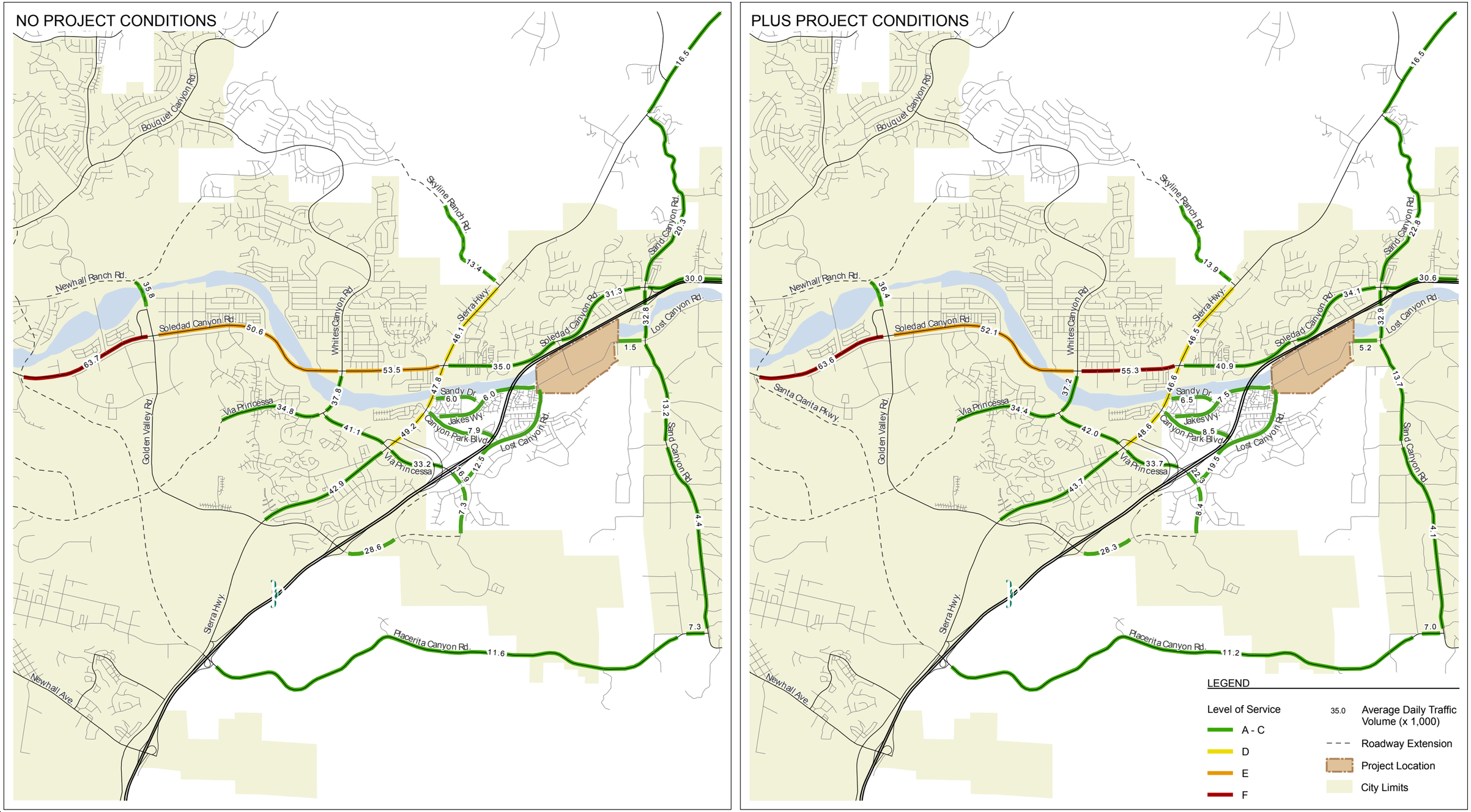
Impacts were assessed by using the SCVCTDM to develop "cumulative no project" and "cumulative plus project" daily traffic forecasts. Changes in travel associated with the proposed project (including its land uses, Metrolink station, and connecting roadways) were estimated using the SCVCTDM. The LOS for each study area roadway segment was evaluated by comparing its projected ADT volume to the maximum volume criteria shown in **Table 4.3-2, Arterial Roadway LOS Criteria**. The resulting LOS is shown on **Figure 4.3-20, Average Daily Traffic Volumes and Roadway Level of Service – Cumulative Conditions**. The figure illustrates that all study roadways are expected to operate at LOS C or better under cumulative No Project conditions, with the exception of portions of Sierra Highway (north of Via Princessa) and Soledad Canyon Road (west of Sierra Highway).

A significant cumulative impact would occur if the project causes more than a 0.02 increase in v/c ratio along a roadway segment operating at LOS D with the project, or causes more than a 0.01 increase in v/c ratio along a roadway segment operating at LOS E or F with the project. Based on these criteria and the results depicted on **Figure 4.3-20**, the project would cause significant impacts to the following two roadway segments under cumulative 2030 conditions:

- Soledad Canyon Road between Sierra Highway and Whites Canyon Road – LOS E to F (v/c ratio increases from 0.99 to 1.02).
- Soledad Canyon Road between Whites Canyon Road and Golden Valley Road – LOS E maintained (v/c ratio increases from 0.94 to 0.97).

NO PROJECT CONDITIONS

PLUS PROJECT CONDITIONS



NOT TO SCALE

SOURCE: Fehr & Peers - May 2010

FIGURE **4.3-20**

Average Daily Traffic Volumes and Roadway Level of Service – Cumulative Conditions

112-024•09/10

The project would result in a net increase of 1,500 to 1,800 vehicles per day on these segments of Soledad Canyon Road under cumulative conditions. These segments carried about 46,000 to 50,000 ADT during the 2004-2005 year. Based on the SCVCTDM, these segments are expected to carry between 52,000 and 55,000 ADT under cumulative conditions. Thus, the 2030 cumulative levels of traffic projected on these facilities are anticipated to increase approximately 10 percent above current levels.

As these roadway segments are already constructed to their maximum width of six lanes, no feasible mitigation measures are available to mitigate these impacts. As previously discussed, the City of Santa Clarita General Plan Circulation Element recognizes that in some cases it is not feasible to construct certain roadway improvements in light of potential time and cost of actions that may be necessary to acquire the property, the physical and economic costs to businesses and residents along the affected roadways, and the social costs that could occur if businesses or residents were forced to relocate. Furthermore, it is important to note that the project would be providing complementary land uses adjacent to a transit station to provide opportunities for shifts to internal trips and for external trips made by transit. The project would also provide a significant amount of office space, which would enable more City residents to work in the City instead of commuting longer distances to work. In addition, the project would be constructing eligible improvements or paying B&T fees that help fund major roadways that provide parallel capacity to Soledad Canyon Road. Nevertheless, due to the project-generated increase in v/c ratio, the project's contribution to impacts along these segments of Soledad Canyon Road in 2030 would be significant and unavoidable.

(2) Freeways

A significant percentage of the overall growth in traffic on SR-14 can be attributed to additional travel to and from the Antelope Valley. This trend is illustrated by the following comparison of existing volumes and cumulative (2030) travel demand projections in the peak direction of SR-14 north of Sand Canyon Road:

- AM Peak Hour (Southbound): Existing – 3,980 vehicles; Cumulative – 7,750 vehicles
- PM Peak Hour (Northbound): Existing – 5,100 vehicles; Cumulative – 9,130 vehicles

Based on the SCVCTDM, SR-14 is expected to continue having directional peak-hour congestion under cumulative conditions. In addition, significant increases in traffic in the currently non-peak directions of SR-14 also are anticipated.

Freeway impacts are considered significant if a project contributes trips representing 2 percent or more of the capacity of an LOS F segment of SR-14. On the segment of SR-14 south of Sand Canyon Road,

2 percent represents 224 peak hour trips. On the segment of SR-14 north of Sand Canyon Road 2 percent represents 184 peak hour trips. As shown on **Table 4.3-14, SR-14 Volume Forecasts - 2015 Conditions**, project buildout would increase traffic on SR-14 resulting in significant cumulative impacts on the segment from Sand Canyon Road to Soledad Canyon Road.

Table 4.3-20, SR-14 Fair Share Calculations – 2030, illustrates the number of trips the project would add at buildout and the project's fair share traffic contributions for various segments of SR-14. Since the fair share is based on cumulative traffic growth, the project's cumulative trip generation (less reductions for eliminated trips on SR-14 due to Metrolink and the bus transfer station) was used for this calculation. Per standard practice, fair-share percentages were calculated for all study segments on SR-14, although only one of the four study segments would be significantly impacted under cumulative conditions. Specifically, under cumulative conditions, the project would result in significant impacts for the segment north of Sand Canyon Road to Soledad Canyon Road. Project trips are estimated at 3.8 percent of future traffic growth for this segment. It should be noted that a majority of the future traffic growth on SR-14 comes from areas east and north of the Santa Clarita Valley.

There presently are no improvements for the SR-14 planned and programmed by Caltrans that would mitigate the identified impacts, nor is there an established funding program in place to collect developer fees to implement any such improvements. Notwithstanding, the project applicant and Caltrans have negotiated a Traffic Mitigation Agreement that would require the applicant to pay an in-lieu fee to Caltrans for future improvements to SR-14 based upon the project's fair share. The Traffic Mitigation Agreement would be signed by both parties upon project approval. However, because there are presently no planned and programmed improvements for SR-14, nor is there an established funding program, the project's payment of an in-lieu fee would not fully mitigate the identified significant impacts. Therefore, mitigation is considered infeasible and the identified impacts would remain significant and unavoidable.

As specified by **Mitigation Measure 4.3-8**, the applicant shall execute and adhere to the terms of the mitigation agreement with Caltrans to minimize the project's impacts to SR-14. Additionally, by virtue of including a Metrolink rail station, bus transfer station, and providing professional office space in the Santa Clarita Valley, the project would be facilitating alternative travel modes and providing employment opportunities for Santa Clarita Valley residents, thereby contributing to a reduction in vehicle trips on SR-14. Nevertheless, because full mitigation of the identified impacts is infeasible, cumulative impacts to SR-14 would be significant and unavoidable.

Table 4.3-20
SR-14 Fair Share Calculations – Year 2030

Freeway Segment	Traffic Growth (Cumulative Plus Project Minus Existing Conditions)	Project Buildout Trips	Fair Share Percentage
SR-14 north of Sand Canyon Road	12,231	470	3.8%
SR-14 south of Sand Canyon Road	14,946	16	0.1%
SR-14 south of Via Princessa	15,237	555	3.6%
SR-14 south of Golden Valley Road	12,889	519	4.0%

Source: Fehr & Peers, Inc., 2010.
Note: Traffic volume represents the combined AM and PM peak hour volumes in both directions. Refer to previous pages for discussion of methodologies used to calculate fair share percentages.

b. CMP

The three CMP study intersections and one CMP freeway segment were evaluated under cumulative conditions. A significant impact would occur to a CMP facility if the project would increase the traffic demand by 2 percent or more of capacity, thereby resulting in or exacerbating LOS F conditions. As shown in **Table 4.3-21, CMP Analysis – Cumulative Conditions (Year 2030)**, the Sierra Highway/Soledad Canyon Road and Sierra Highway/Placerita Canyon Road intersections would operate at unacceptable levels of service during the AM and PM peak hours under cumulative No Project conditions in 2030.

As shown in **Table 4.3-18**, the project would worsen unacceptable operations at the Sierra Highway/Placerita Canyon Road intersection during the PM peak hour, and would incrementally improve unacceptable operations at the Sierra Highway/Soledad Canyon Road intersection during the AM and PM peak hours. However, the project would not increase the v/c ratio by 0.02 at any CMP facility. Therefore, cumulative impacts to CMP facilities would be less than significant.

Table 4.3-21
CMP Analysis – Cumulative Conditions (Year 2030)

CMP Facility	AM (PM) Peak Hour			
	2030 without Project		2030 Plus Project	
	Traffic Volume	V/C Ratio – LOS	Traffic Volume	V/C Ratio – LOS
Sierra Highway/Sand Canyon Road Intersection	N/A	0.53 – A (0.57 – A)	N/A	0.56 – A (0.59 – A)
Sierra Highway/Soledad Canyon Road Intersection	N/A	1.14 – F (1.03 – F)	N/A	1.13 – F (1.02 – F)
Sierra Highway/Placerita Canyon Road Intersection	N/A	1.19 – F (1.02 – F)	N/A	1.20 – F (1.03 – F)
SR-14 north of I-5 (Northbound)	6,220 (14,620)	N/A	6,300 (14,600)	N/A
SR-14 north of I-5 (Southbound)	14,250 (8,300)	N/A	14,200 (8,340)	N/A

Source: Fehr & Peers, Inc., 2010.
Note: Capacities used to calculate v/c ratios based on Los Angeles County Traffic Impact Analysis Report Guidelines.
N/A = Not Applicable.

9. CUMULATIVE MITIGATION MEASURES

As previously explained, no feasible mitigation measures are available to reduce the identified significant cumulative impacts to Soledad Canyon Road or SR-14.

10. SIGNIFICANT UNAVOIDABLE IMPACTS

Phase 1 of the project would further degrade LOS F operations at the Sand Canyon Road/Lost Canyon Road intersection (No. 5), resulting in a temporary, unavoidable significant impact. Buildout of the project and installation of Intersection Design Option No. 2, 3, or 4 would mitigate the project's impacts to a less than significant level. Selection of Intersection Design Option No. 1 would result in the project having a permanent, significant, unavoidable impact at this intersection.

Under long-term 2030 cumulative conditions, the project would cause significant impacts to segments of Soledad Canyon Road located within the City. As these roadway segments are already constructed to their maximum width of six lanes, no feasible mitigation measures are available to mitigate these impacts. Therefore, the project's contribution to impacts along these segments of Soledad Canyon Road in 2030 would be significant and unavoidable.

With respect to SR-14, there presently are no improvements for the SR-14 planned and programmed by Caltrans that would mitigate the identified impacts, nor is there an established funding program in place to collect developer fees to implement any such improvements. Notwithstanding, the project applicant and Caltrans have negotiated a Traffic Mitigation Agreement that would require the applicant to pay an in-lieu fee to Caltrans for future improvements to SR-14 based upon the project's fair share. The Traffic Mitigation Agreement would be signed by both parties upon project approval. However, because there program, the project's payment of an in-lieu fee would not fully mitigate the identified significant impacts. Therefore, mitigation is considered infeasible and the identified impacts would remain significant and unavoidable.

Additionally, by virtue of including a Metrolink rail station, bus transfer station and providing professional office space in the Santa Clarita Valley, the project would be providing alternative travel modes and employment opportunities for Santa Clarita Valley residents. Nevertheless, impacts to SR-14 are considered significant and unavoidable.

All other significant impacts would be mitigated to a level less than significant.