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TECHNICAL MEMORANDUM

To: Barney Matsumoto
State of California - Department of Parks and Recreation

From: Bob Cheung

Date: March 6, 2007

Subject: Santa Susana Pass State Historical Park Traffic Impact Study

Introduction

This technical memorandum summarizes the results of the traffic impact analysis associated with the proposed improvements for the Santa Susana Pass State Historical Park (hereafter refer to as "Project"). The Project would provide two primary access points (gateways) and four additional secondary access points. Figure 1 shows the six proposed access points. In addition, there will be 75-person capacity campsites as well as the existing 9-mile trail system. The campsites would be located within the "North Forty Zone" and "Scenic Ridge Zone." Table 1 summarizes the Project's attributes. Along with the campsites, the proposed Project would include supporting facilities including visitor centers, restrooms, parking and other park-related maintenance uses. Table 2 summarizes these proposed supporting facilities including a breakdown of the parking supply.

The traffic impact analysis investigated the potential traffic impacts associated with the proposed Project. The traffic analysis includes the following study scenarios:

- Exiting 2007 Conditions
- Future 2027 Without Project Conditions
- Future 2027 With Project Conditions

A twenty-year horizon timeframe was selected to analyze potential long-term impacts within the study area.

The proposed Project is not expected to generate significant morning or evening traffic impacts, thus the focus of the traffic study is on identifying potential traffic impacts on nearby residential streets and key roadway segments. The methodology employed was based on the City of Los Angeles Department of Transportation (LADOT) criteria for residential street impacts based on average daily traffic volumes.

The traffic study analyzed potential traffic impacts on six roadway segments. The six roadway segments include:

- Devonshire Street west of Valley Circle Boulevard
- Larwin Avenue south of Devonshire Street
- Andora Avenue southwest of Baden Avenue
- Santa Susana Pass Road west of Topanga Canyon Boulevard
- Santa Susana Pass Road east of Lilac Lane
- Lilac Lane south of Santa Susan Pass Road

Existing 2007 Conditions

Katz, Okitsu & Associates conducted detailed fieldwork on the six roadway segments. Table 3 summarizes their roadway characteristics including roadway classification, number of travel lanes, posted speed limit and on-street parking. Existing weekday and weekend 24-hour traffic counts were conducted specifically for this traffic analysis. Table 4 summarizes the weekday and weekend traffic count results. Table 4 also summarizes the existing level of service at the six roadway segments. As shown, all six roadway segments are operating at good levels of service (LOS A). The level of service concept is explained in the section below.

The concept of roadway level of service is calculated as the volume of vehicles that pass through the facility divided by the capacity of that facility. A facility is "at capacity" (V/C of 1.00 or greater) whereby extreme congestion occurs. This volume/capacity ratio value is a function of daily volumes and lane configuration. Level of service (LOS) values range from LOS A to LOS F. LOS A indicates excellent operating conditions with little delay to motorists, whereas LOS F represents congested conditions with excessive vehicle delay. LOS E is typically defined as the operating "capacity" of a roadway. Table 5 provides the definition of level of service concept.

Future 2027 Without-Project Conditions

Future 2027 traffic conditions are based of estimated forecasts of traffic volumes within the study area. In order to determine potential traffic impacts based on LADOT guidelines, future "Without-Project" conditions were forecasted to provide a basis upon which Project impacts can be measured.

The future 2027 traffic forecasts are based a 0.9-percent per year increase in traffic volumes based on the Los Angeles County Congestion Management Program. The ambient traffic growth rate was applied to existing traffic volumes to estimate future 2027 traffic conditions. Table 6 summarizes the future 2027 without-Project traffic volumes and corresponding level of service results at each of the six study intersections.

As shown, the estimated level of service at each of the study intersections is projected to continue operating at LOS A.

Future 2027 With-Project Conditions

The proposed Project will result in the addition of campsites within the North Forty Zone and Scenic Ridge Zone. It is anticipated by the California State Department of Parks and Recreation that the campsites will provide up to 75-person capacity within the two zones. Based on an occupancy rate of 8-person per site, it is assumed that there will be approximately 9 campsites. In addition to the campsites, the Project will provide visitor supporting services such as visitor centers and restrooms. The Institute of Transportation Engineer (ITE) "Trip Generation - 7th Edition" provides trip generation rates which the estimated Project trips are based on. The ITE Manual is a nationally accepted source for trip generation estimate and has been adopted by nearly every agency and jurisdiction within California including the City of Los Angeles, Los Angeles County and Ventura County. Based on ITE, the proposed Project is estimated to generate approximately 90 weekday trips and 130 weekend trips. Table 7 summarizes the Project trip generation estimates.

The ITE trip rates take into account all visitor trips as well as trips generated by employees. Since current vehicular trips generated by the Park have already been accounted for in the existing traffic counts; assuming all the vehicular trips generated by the 9 campsites as new trips for the purpose of traffic impact analysis can be considered a conservative (or worst case) estimate of potential Project impacts.

Trip Distribution is the process of assigning the directions from which traffic will access a project site. Trip distribution is dependent upon the land use characteristics of the project and the general locations of other land uses to which project trips would originate or terminate. The general distribution pattern is as follows:

- South: 10% via Topanga Canyon Road
- East: 65% via westbound SR-118 and 5% via Devonshire Street
- West: 20% via eastbound SR-118

Based on the number of parking supply at each of the six project access points, Project related trips were assigned accordingly. As shown in Table 2, the Chatsworth Park South and Spahn Ranch accesses would provide most of the parking supply at 50 spaces each. The four secondary access points would provide six spaces each. Project estimated trips were assigned based on the proportionality of available parking supply. The table below summarizes the parking distribution.

Gateway Zones	% Distribution
Chatsworth Park South	37%
Spahn Ranch (North Forty)	37%
Larwin Avenue	9%
Lilac Avenue	4%
Santa Susana Pass Road (West Access Point)	4%
Andora Avenue	9%

Based on the forecast parameters discussed above, Project related-trips were assigned to the surrounding roadway network. Table 8 summarizes the results of the future With-Project forecasts and resultant level of service results on each of the six roadway segments. As shown, under "With-Project" conditions, all roadway segments are estimated to operate at very good levels of service (LOS A).

LADOT has established threshold of significance for determining Project impacts on roadway segments. The threshold is based on projected average daily traffic (ADT) volumes and the percent-increase of ADT related to Project trips. The table below summarizes LADOT's impact criteria:

Projected Average Daily Traffic with Project (Final ADT)	Project-Related Increase In ADT
0-999	16 percent or more of final ADT
1,000 -1,999	12-15 percent of final ADT
2,000 - 2,999	10-11 percent of final ADT
3,000 or more	8-9 percent of final ADT

Table 9 summarizes the increase in traffic on each roadway segment attributed to the proposed Project. Based on the forecasted daily traffic volumes and LADOT's threshold of significance, it is determined that the Project would not have any significant traffic impacts on any of the six roadway segments.

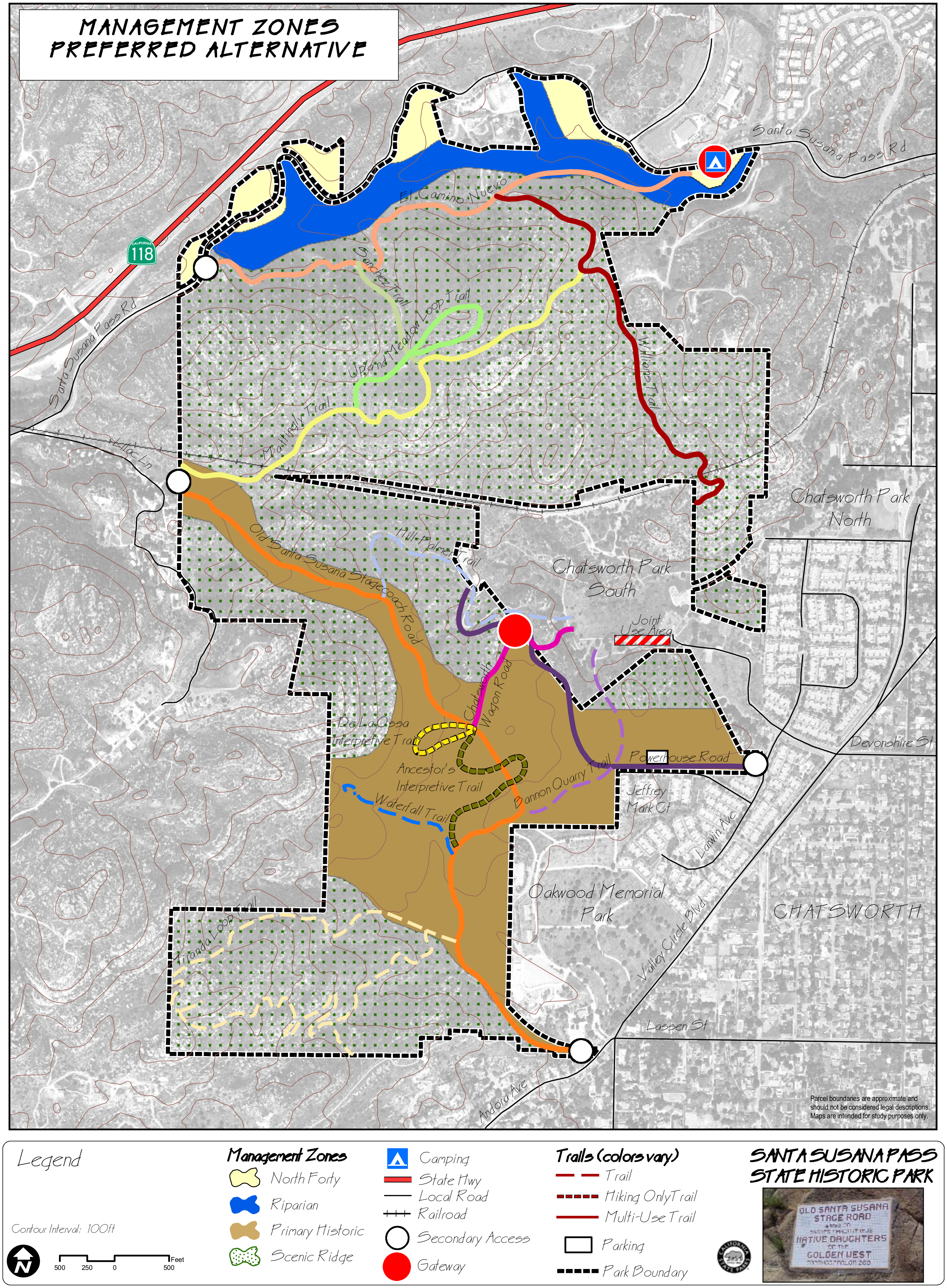
Parking Supply Analysis

The proposed Project plans will provide 136 parking spaces for general public use. Table 2 summarizes the proposed parking supply at each of the six access points. As identified in Table 7, based on ITE, the proposed Project is estimated to generate approximately 90 weekday trips and 130 weekend trips. The 90 weekday trips are equivalent to 45 daily vehicles as each vehicle generates one inbound trip and one outbound trip. During the weekend, 130 trips is equivalent to 65 vehicles. Based on this assumption, it can be concluded that the 136-space parking supply would be more than adequate to accommodate average weekday and average weekend vehicular demand. In reality, the 45 weekday and 130 weekend demand would be spread throughout the day. Under the worst case but unlikely situation where all 45 weekday and 130 weekend vehicles were parked on-site, there would still be a parking surplus. Based on this, it would be unlikely that Project-related parking would spill over into nearby residential streets.

Conclusion

Based on the Project description and the proposed usage, the Project is not expected to generate significant traffic impacts on any of the study roadway segments. Based on the estimated daily trip generation, the 136 parking spaces would provide adequate parking supply for average weekday and weekend usage.

Figure 1



MANAGEMENT ZONES
PREFERRED ALTERNATIVE
118
Santa Susana Pass Rd
El Camino Nuevo
Sanchez Trail
Upland Meadow Loop Trail
Mattingly Trail
Williams Trail
Lilac Ln
Chatsworth Park North
Chatsworth Park South
Hill-Palmer Trail
Old Santa Susana Stagecoach Road
Joint Use Area
Chatsworth Wagon Road
De La Ossa Interpretive Trail
Ancestor's Interpretive Trail
Waterfall Trail
Bannon Quarry Trail
Powerhouse Road
Devonshire St
Jeffrey Mark Ct
Lurline Ave
Oakwood Memorial Park
CHATSWORTH
Valley Circle Blvd
Miranda Loop Trail
Lassen St
Andora Ave
Parcel boundaries are approximate and should not be considered legal descriptions. Maps are intended for study purposes only.
Legend
Contour Interval: 100ft
500 250 0 500 Feet
Management Zones
North Forty
Riparian
Primary Historic
Scenic Ridge
Camping
State Hwy
Local Road
Railroad
Secondary Access
Gateway
Trails (colors vary)
Trail
Hiking Only Trail
Multi-Use Trail
Parking
Park Boundary
SANTA SUSANA PASS STATE HISTORIC PARK
OLD SANTA SUSANA STAGE ROAD
NATIVE DAUGHTERS OF THE GOLDEN WEST

Table 1
Project Description

Project	Land Use / Improvements	Access
North Forty Zone (along Santa Susana Pass Road)	2,500 SF Visitor Use	East Santa Susana Pass Road
	500 SF campfire center	
	Camp Sites [a]	
Primary Historic Zone	2.5 KSF Visitor Use	Lilac Avenue & Devonsire Street
Scenic Ridge Zone	Camp Sites [a]	Devonshire Street, Lilac Avenue, East & West Santa Susana Pass Road
	200 SF Restroom	

Notes:
[a] 75 - Person Capacity or approximately 9 sites split between North Forty and Scenic Ridge Zones

Table 2
Description of Supporting Facilities

Gateway Zones	Land Use / Improvements	Access
Chatsworth Park South	50 Parking Stalls	Devonshire Street
	5,000 SF Visitor use	
	1,000SF Maintenance facility	
	800 SF of Restroom	
Spahn Ranch (North Forty)	50 Parking Stalls	East Santa Susana Pass Road
	6 truck/trailer parking	
	12 Corrals	
	One Manure trailer	
	5,000 SF Visitor use	
	1,000 SF Maintenance facility	
	800 SF of Restroom	
Secondary Access Points	**Land use / Improvements**	**Access**
Larwin Avenue	12 Parking Stalls	Larwin Avenue & Devonsire Street
	100 SF of Restroom	
Lilac Avenue	6 Parking Stalls	Lilac Avenue, East & West Santa Susana Pass Road
	100 SF of Restroom	
Santa Susana Pass Road (West Access Point)	6 Parking Stalls	West Santa Susana Pass Road
	100 SF of Restroom	
Andora Avenue	12 Parking Stalls	Valley Circle Boulevard
	100 SF of Restroom	

Table 3
Roadway Segment Description

Roadway Segment		Classification	# of Lanes in each direction	Speed (mph)	Surrounding Land Use	Parking
1	Devonshire Street	Local	2	25	Residential	Permitted
2	Larwin Avenue	Local	1	25	Residential	Permitted
3	Andora Avenue	Local	1	25	Residential	Permitted
4	Lilac Avenue	Local	1	25	Residential & Park	Not designated
5	Santa Susana Pass Road	Secondary	1 to 2	15-30	Park	No Parking

Table 4
Existing Traffic Volumes and Level of Service

Street Segments		Daily Link Capacity	Existing Year 2007					
			Weekday (ADT)	Volume to Capacity	Level of Service	Weekend (ADT)	Volume to Capacity	Level of Service
1	Devonshire Street east of Larwin Avenue	16,200	3,432	0.212	A	4,169	0.257	A
2	Larwin Avenue north of Jeffrey Court	9,600	1,500	0.156	A	1,038	0.108	A
3	Andora Avenue south of Valley Circle Boulevard	9,600	1,186	0.124	A	919	0.096	A
4	Santa Susana Pass Road West of Topanga Canyon	16,200	4,172	0.258	A	3,752	0.232	A
5	Santa Susana Pass Road East of Lilac Avenue	16,200	1,080	0.067	A	933	0.058	A
6	Lilac Avenue South of Santa Susana Pass Road	9,600	441	0.046	A	394	0.041	A

Table 5
Level of Service Definitions

LOS	Interpretation	Volume to Capacity
A	Excellent operation. All approaches to the intersection appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation.	0.000 - 0.600
B	Very good operation. Many drivers begin to feel somewhat restricted within platoons of vehicles. This represents stable flow. An approach to an intersection may occasionally be fully utilized and traffic queues start to form.	0.601 - 0.700
C	Good operation. Occasionally backups may develop behind turning vehicles. Most drivers feel somewhat restricted.	0.701 - 0.800
D	Fair operation. There are no long-standing traffic queues. This level is typically associated with design practice for peak periods.	0.801 - 0.900
E	Poor operation. Some long standing vehicular queues develop on critical approaches.	0.901 - 1.000
F	Forced flow. Represents jammed conditions. Backups from locations downstream or on the cross street may restrict or prevent movements of vehicles out of the intersection approach lanes; therefore, volumes carried are not predictable. Potential for stop and go type traffic flow.	Over 1.000

Source: Highway Capacity Manual, Special Report 209, Transportation Research Board, Washington D.C., 2000 and Interim Materials on Highway Capacity, NCHRP Circular 212, 1982

Table 6
Future 2007 Without Project Traffic Volumes and LOS

Street Segments		Daily Link Capacity	Future (2027) Without Project					
			Weekday (ADT)	Volume to Capacity	Level of Service	Weekend (ADT)	Volume to Capacity	Level of Service
1	Devonshire Street east of Larwin Avenue	16,200	4,015	0.248	A	4,878	0.301	A
2	Larwin Avenue north of Jeffrey Court	9,600	1,755	0.183	A	1,214	0.126	A
3	Andora Avenue south of Valley Circle Boulevard	9,600	1,388	0.145	A	1,075	0.112	A
4	Santa Susana Pass Road West of Topanga Canyon	16,200	4,881	0.301	A	4,390	0.271	A
5	Santa Susana Pass Road East of Lilac Avenue	16,200	1,264	0.078	A	1,092	0.067	A
6	Lilac Avenue South of Santa Susana Pass Road	9,600	516	0.054	A	461	0.048	A

Table 7
Project Trip Generation

Land Use	ITE Code	Camp Sites	Daily Trips	
			Weekday	Weekend
State Park - Camp Sites (Picnic Sites)	413	9	90	131

Source: Institute of Transportation Engineers, Trip Generation - 7th Edition

Table 8
Future 2007 With Project Traffic Volumes and LOS

Street Segments		Daily Link Capacity	Future (2027) With Project					
			Weekday (ADT)	Volume to Capacity	Level of Service	Weekend (ADT)	Volume to Capacity	Level of Service
1	Devonshire Street east of Larwin Avenue	16,200	4,057	0.250	A	4,878	0.301	A
2	Larwin Avenue north of Jeffrey Court	9,600	1,761	0.183	A	1,222	0.127	A
3	Andora Avenue south of Valley Circle Boulevard	9,600	1,394	0.145	A	1,083	0.113	A
4	Santa Susana Pass Road West of Topanga Canyon	16,200	4,919	0.304	A	4,444	0.274	A
5	Santa Susana Pass Road East of Lilac Avenue	16,200	1,270	0.078	A	1,100	0.068	A
6	Lilac Avenue South of Santa Susana Pass Road	9,600	522	0.054	A	469	0.049	A

Table 9
Project Impact Summary

	Street Segments	Weekday Base Volumes		Proposed Project				
		Existing Year 2007	Future Year 2027 Base	Project Only	Future Year 2027 with Project	Increase (%)	Significant Impact Criteria	Significant Impact
1	Devonshire Street east of Larwin Avenue	3,432	4,015	42	4,057	1.0%	8.0%	No
2	Larwin Avenue north of Jeffrey Court	1,500	1,755	6	1,761	0.3%	12.0%	No
3	Susana Pass Road east of Redmesa Road	1,186	1,388	6	1,394	0.4%	12.0%	No
4	Susana Pass Road east of Lilac Avenue	4,172	4,881	38	4,919	0.8%	8.0%	No
5	Lilac Avenue east of Susana Pass Road	1,080	1,264	6	1,270	0.5%	12.0%	No
6	Andora Avenue south of Valley Circle Boulevard	441	516	6	522	1.2%	16.0%	No

Weekend

	Street Segments	Weekend Base Volumes		Proposed Project				
		Existing Year 2007	Future Year 2027 Base	Project Only	Future Year 2027 with Project	Increase (%)	Significant Impact Criteria	Significant Impact
1	Devonshire Street east of Larwin Avenue	4,169	4,878	60	4,938	1.2%	8.0%	No
2	Larwin Avenue north of Jeffrey Court	1,038	1,214	8	1,222	0.7%	12.0%	No
3	Susana Pass Road east of Redmesa Road	919	1,075	8	1,083	0.7%	12.0%	No
4	Susana Pass Road east of Lilac Avenue	3,752	4,390	54	4,444	1.2%	8.0%	No
5	Lilac Avenue east of Susana Pass Road	933	1,092	8	1,100	0.7%	12.0%	No
6	Andora Avenue south of Valley Circle Boulevard	394	461	8	469	1.7%	16.0%	No