County of Los Angeles

Final
Environmental Impact Report
SCH No. 2005051143
Volume VI
Appendix F4.3 (continued) – F4.6

MISSION VILLAGE

Prepared for:

Los Angeles County
Department of Regional Planning
320 West Temple Street
Los Angeles, California 90012

Prepared by:

IMPACT SCIENCES, INC.
803 Camarillo Springs Road, Suite A
Camarillo, California 93012
Phone: (805) 437-1900

NEWHALL RANCH
Newhall Ranch Company

May 2011

County of Los Angeles

Final Environmental Impact Report

SCH No. 2005051143

Volume VI

Appendix F4.3 (continued) – F4.6

MISSION VILLAGE

Project No.	04-181
Vesting Tentative Tract Map No.	61105
SEA Conditional Use Permit No.	RCUP200500080
Oak Tree Permit No.	ROAK200500032
Oak Tree Permit No.	T200500043
Conditional Use Permit (Off-Site Improvements)	RCUP200500081
Parking Permit	RPKT200500011
Substantial Conformance	201000001

Prepared for:

Los Angeles County
Department of Regional Planning
320 West Temple Street
Los Angeles, California 90012

Prepared by:

IMPACT SCIENCES, INC.
803 Camarillo Springs Road, Suite A
Camarillo, California 93012
Phone: (805) 437-1900

NEWHALL RANCH
Newhall Ranch Company

MAY 2011

FINAL
ENVIRONMENTAL IMPACT REPORT
for
MISSION VILLAGE

SCH No. 2005051143

County Project No. 04-181
Vesting Tentative Tract Map No. 61105
SEA Conditional Use Permit No. RCUP200500080
Oak Tree Permit No. ROAK200500032
Oak Tree Permit No. T200500043
Conditional Use Permit RCUP200500081
(Off-Site Improvements)
Parking Permit RPKT200500011

Volume VI
Appendix F4.3 (continued) – F4.6

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May 2011

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Los Angeles County
Metropolitan Transportation Authority

DRAFT 2010 CONGESTION MANAGEMENT PROGRAM

Board of Directors

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Antonio R. Villaraigosa	1st Vice Chair Mayor, City of Los Angeles
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Rita Robinson	City of Los Angeles
Zev Yaroslavsky	Los Angeles County Supervisor Third Supervisorial District

Los Angeles County
Metropolitan Transportation Authority

One Gateway Plaza
Los Angeles, CA 90012-2952

213.922.6000
metro.net

Prepared by: Long Range Planning and Coordination.

Draft 2010

Congestion Management Program

Los Angeles County Metropolitan Transportation Authority

Metro

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Doreen Morrissey, *Transportation Planner*

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Appendix G CMP Government Code Sections
Appendix H Roles and Responsibilities
Appendix I Glossary

2009 CMP FREEWAY MONITORING STATIONS AND LEVELS OF SERVICE

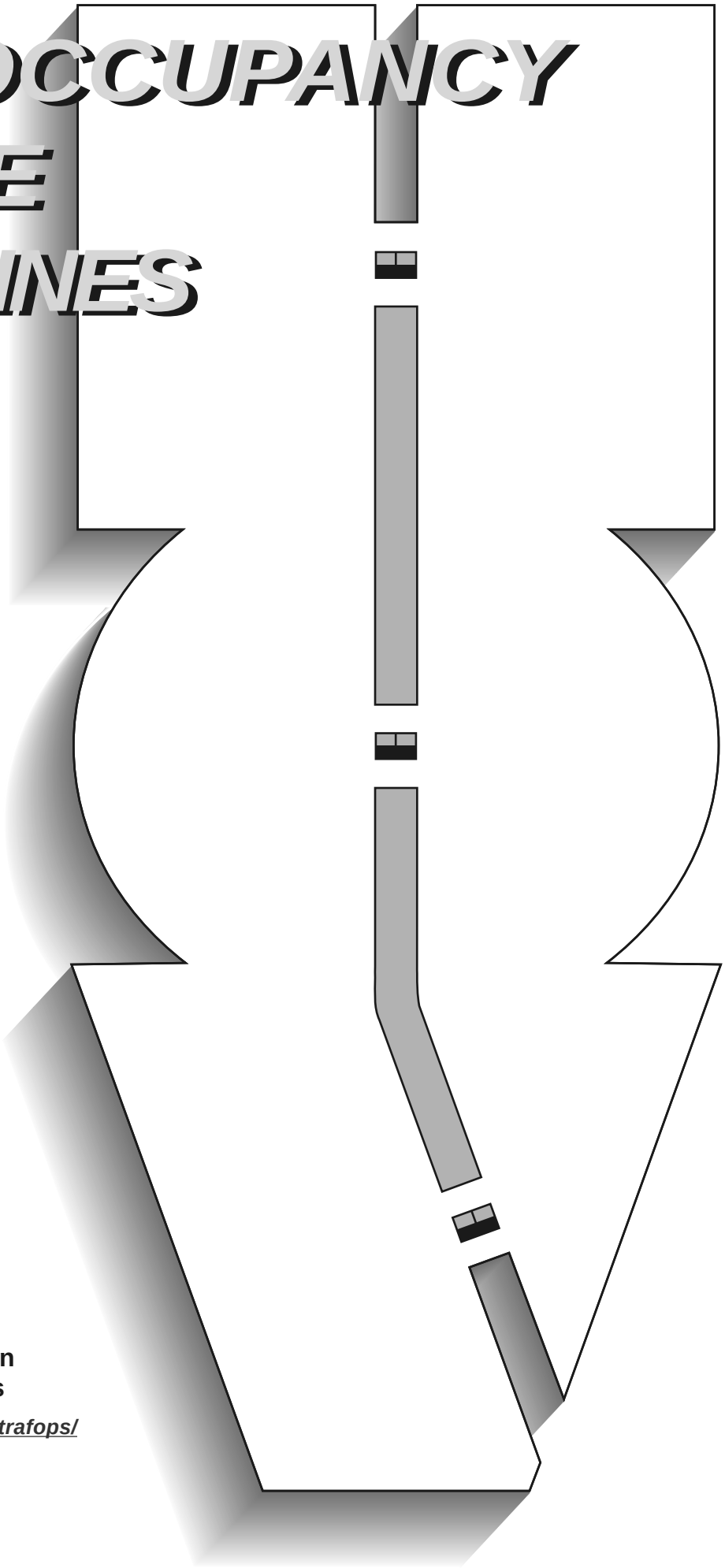
CMP Stn	Fwy Rte	Post Mile	Location	Northbound/Eastbound								Southbound/Westbound							
				AM Peak Hour				PM Peak Hour				AM Peak Hour				PM Peak Hour			
				Demand	Cap	D/C	LOS	Demand	Cap	D/C	LOS	Demand	Cap	D/C	LOS	Demand	Cap	D/C	LOS
1060	210	R23.55	w/o Rtes 134/710 5lane	10,500	10,000	1.05	F(0)	4,900	10,000	0.49	A	4,200	10,000	0.42	A	6,400	10,000	0.64	B
1061	210	R29.72	Rosemead Bl 4l+1 HOV	11,300	10,000	1.13	F(0)	14,200	10,000	1.42	F(2)	11,400	10,000	1.14	F(0)	9,700	10,000	0.97	E
1062	210	R35.74	w/o Rte 605 4l+1 HOV	7,900	10,000	0.79	C	12,400	10,000	1.24	F(0)	13,000	10,000	1.30	F(1)	8,200	10,000	0.82	D
1063	210	R46.45	at San Dimas Ave 4l+1 HOV	4,400	10,000	0.44	A	7,100	10,000	0.71	C	7,900	10,000	0.79	C	5,100	10,000	0.51	A
1064	210	R 50.94	e/o Indian Hill Bl 4l+1 HOV	3,700	10,000	0.37	A	7,400	10,000	0.74	C	7,100	10,000	0.71	C	4,200	10,000	0.42	A
1065	405	0.40	n/o Rte 22	9,100	10,000	0.91	E	8,500	10,000	0.85	D	8,400	12,000	0.70	B	13,900	12,000	1.16	F(0)
1066	405	8.02	Santa Fe Ave	11,500	10,000	1.15	F(0)	8,900	10,000	0.89	D	8,600	10,000	0.86	D	10,700	10,000	1.07	F(0)
1067	405	11.90	s/o Rte 110 @ Carson Scales	10,900	10,000	1.09	F(0)	9,400	10,000	0.94	E	9,400	10,000	0.94	E	11,300	10,000	1.13	F(0)
1068	405	18.63	n/o Inglewood Ave at Compton Bl	11,300	10,000	1.13	F(0)	8,600	10,000	0.86	D	8,420	10,000	0.84	D	10,400	10,000	1.04	F(0)
1069	405	24.27	n/o La Tijera Bl	14,200	10,000	1.42	F(2)	14,400	10,000	1.44	F(2)	10,100	10,000	1.01	F(0)	11,500	10,000	1.15	F(0)
1070	405	28.30	n/o Venice Bl	13,600	10,000	1.36	F(2)	14,900	10,000	1.49	F(3)	9,300	10,000	0.93	E	14,600	10,000	1.46	F(3)
1071	405	35.81	s/o Mulholland Dr	8,800	10,000	0.88	D	14,600	10,000	1.46	F(3)	14,600	10,000	1.46	F(3)	10,000	10,000	1.00	E
1072	405	44.27	n/o Roscoe Bl	6,500	10,000	0.65	B	12,800	10,000	1.28	F(1)	10,400	10,000	1.04	F(0)	6,800	10,000	0.68	B
1073	605	R2.31	n/o Carson St	9,800	10,000	0.98	E	9,900	10,000	0.99	E	8,700	10,000	0.87	D	7,600	10,000	0.76	C
1074	605	R 5.58	n/o Jct Rte 91, s/o Alondra Bl	13,900	12,000	1.16	F(0)	10,100	12,000	0.84	D	10,600	12,000	0.88	D	10,700	12,000	0.89	D
1075	605	R11.00	n/o Telegraph Rd	9,500	10,000	0.95	E	11,500	10,000	1.15	F(0)	12,300	10,000	1.23	F(0)	13,300	10,000	1.33	F(1)
1076	605	R17.75	n/o Jct Rte 60	6,600	10,000	0.66	B	11,800	10,000	1.18	F(0)	10,100	10,000	1.01	F(0)	6,500	10,000	0.65	B
1077	605	22.92	at San Gabriel River Bridge	4,700	8,000	0.59	A	5,100	8,000	0.64	B	6,400	8,000	0.80	C	5,400	8,000	0.68	B
1078	710	7.60	n/o Jct Rte 1 (PCH), Willow St	5,500	6,000	0.92	E	5,100	6,000	0.85	D	5,400	6,000	0.90	D	5,100	6,000	0.85	D
1079	710	10.31	n/o Jct Rte 405, s/o Del Amo Bl	7,900	8,000	0.99	E	7,800	8,000	0.98	E	8,400	8,000	1.05	F(0)	7,600	8,000	0.95	E
1080	710	19.10	n/o Rte 105, n/o Firestone Bl	10,200	8,000	1.28	F(1)	10,800	8,000	1.35	F(1)	7,500	8,000	0.94	E	7,800	8,000	0.98	E
1081	710	23.75	s/o Rte 60	7,900	8,000	0.99	E	8,300	8,000	1.04	F(0)	7,900	8,000	0.99	E	9,000	8,000	1.13	F(0)

Statn= station; Cap = capacity; D/C = demand/capacity

Excerpt, High Occupancy Vehicle Guidelines for Planning, Design and Operations, Caltrans (August 2003)

HIGH-OCCUPANCY VEHICLE GUIDELINES

for Planning, Design and Operations

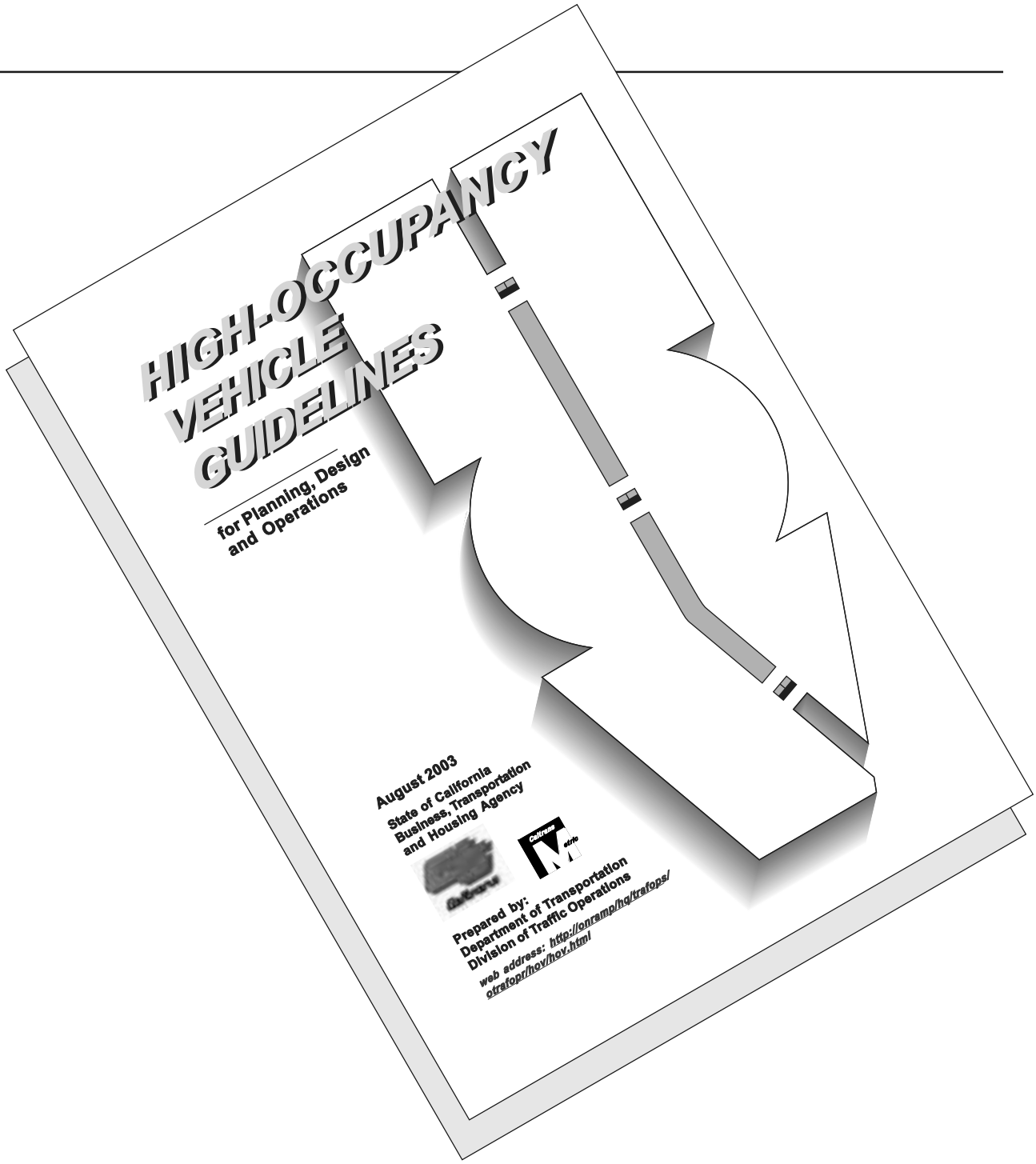


August 2003

State of California
Business, Transportation and Housing Agency

Prepared by:
Department of Transportation
Division of Traffic Operations

web address: ***http://onramp/hq/trafops/otrafopr/hov/hov.html***



This guidance was prepared by the California Department of Transportation (Caltrans) Headquarters, Division of Traffic Operations, High-Occupancy Vehicle Systems Branch, 1120 N Street, Sacramento, California 95814.

This guidance is an update of the July 1991 Guidelines for Planning, Design and Operations of High-Occupancy Vehicle (HOV) facilities. It provides statewide uniformity of the development of HOV facilities and details the areas of responsibility for implementation. All measures are expressed in metric units.

Questions and comments regarding information contained in this guidance can be directed to Antonette C. Clark, HOV Systems Branch Chief at (916) 653-4552.

web address: http://onramp/hq/trafops/otrafopr/hov/hov.html

eleven hours) are much longer and separated by a short off-peak period. All, with one exception, full-time HOV facilities in the state are buffered, which means that the HOV lane is separated from the adjacent mixed-flow lanes by a combination of reflective markers and solid yellow and white painted stripes per the California Vehicle Code. These facilities offer restricted access entrances and exits which are clearly delineated with a broken white line. Only one full-time HOV facility, the El Monte Busway on Interstate 10 in Los Angeles County, is barrier separated.

Section 2.5 Vehicle Occupancy

The occupancy requirements for HOV facilities should be based on the following considerations:

A. Maximizing the person-per-hour throughput.

B. Allowing for HOV growth and increased usage of the HOV facility.

C. Maintaining a free-flow condition, preferably a LOS-C.

D. Conforming to the occupancy requirements of the region, particularly connecting HOV routes.

E. Completion of a region's HOV system or adjacent HOV facilities could redistribute the HOV traffic, thereby making occupancy adjustments unnecessary.

F. Adjust occupancy requirements to avoid the perception of lane underutilization.

The predominant occupancy requirement for existing HOV facilities is two plus (2+) and it is expected that most new HOV facilities will be 2+ as well. However, as some existing HOV facilities have become congested, the District should initiate studies for solutions to maintain a desirable level of service. For buffered or contiguous HOV facilities, Caltrans considers LOS-C occurs at approximately 1,650 vehicles per hour, less if there is significant bus volume or if there are physical constraints.

Increasing the occupancy requirement may be the logical solution if adding a second HOV lane is inappropriate. However, going from 2+ to 3+ may reduce vehicular demand by 75% to 85%. Such adjustments may be too severe if only a 10% to 20% reduction in demand is necessary to maintain free-flow conditions. Districts are strongly recommended to involve the FHWA Transportation Engineer and Headquarters HOV Coordinator if a significant change in existing HOV operations is considered. See FHWA Program Guidance at: http://www.fhwa.dot.gov/legsregs/directives/policy/hovmemgd.htm.

Varying occupancy requirements, such as the El Monte Busway on Interstate 10 in Los Angeles County, by time of day is a useful option and could be used in conjunction with computer traffic surveillance and technology currently being implemented by the urban Districts. To avoid public confusion over varying occupancy requirements, it is essential that signs and other motorist information devices clearly relate the necessary message. Changing occupancy requirements, whether permanently or by time of day, is enforcement sensitive and should be coordinated with the California Highway Patrol.

Once a decision has been made to change the occupancy requirement, an intense public information and education effort should precede actual implementation. An adequate period should be allowed for public comment and response.

Section 2.6 Vehicle Types

The Federal Surface Transportation Assistance Act of 1982, in part, permits motorcycles in HOV facilities unless their presence creates a safety hazard. If a documented engineering analysis indicates that motorcycles present more of a safety problem in the HOV facility than in the mixed-flow lanes, then consideration should be given to restricting motorcycles from the HOV facility. Prohibition of motorcycles

Excerpt, Section 4.8, Traffic, Newhall Ranch Resource Management and Development Plan and Spineflower Conservation Plan Environmental Impact Statement/Environmental Impact Report (SCH No. 2000011025)

Table 4.8-26, Significantly Impacted Freeway Segments - Long-Range Build-Out Conditions - Volume Density Ratios, lists the volume density ratios for each of the significantly impacted freeway segments under long-range build-out conditions.

(Revised) Table 4.8-26
Significantly Impacted Freeway Segments -
Long-Range Build-Out Conditions - Volume Density Ratios

Location/County	Lanes	Volume Density by Alternative[1]						
		1	2	3	4	5	6	7
I-5 south of Parker/Los Angeles	8	<45	<45	<45	<45	<45	<45	<45
I-5 south of Hasley/Los Angeles	8	>45	>45	>45	>45	>45	>45	>45
I-5 south of SR-126/Los Angeles	8	>45	>45	>45	>45	>45	>45	>45
I-5 south of Rye Canyon/Los Angeles	8	>45	>45	>45	>45	>45	>45	>45
I-5 south of Magic Mountain/Los Angeles	8	>45	>45	>45	>45	>45	>45	>45
I-5 south of Valencia/Los Angeles	8	>45	>45	>45	>45	>45	>45	>45
I-5 south of McBean/Los Angeles	8	>45	>45	>45	>45	>45	>45	>45
I-5 south of Lyons/Los Angeles	8	>45	>45	>45	>45	>45	>45	>45
I-5 south of Calgrove/Los Angeles	8	>45	>45	>45	>45	>45	>45	>45

Notes:

[1] The "45" reference in this table refers to either less than or more than 45 passenger vehicles per mile, per lane.

See Draft EIS/EIR, **Appendix 4.8**, December 2008 Traffic Report, for the complete listing of volume densities for all I-5 freeway segments.

Source: Austin-Foust Associates, Inc. - December 2008

4.8.9 MITIGATION MEASURES

4.8.9.1 Mitigation Measures Already Required by the Adopted Newhall Ranch Specific Plan EIR

The County of Los Angeles previously adopted mitigation measures to minimize traffic impacts within the Specific Plan area as part of its adoption of the Newhall Ranch Specific Plan and WRP. These measures are found in the previously certified Newhall Ranch Specific Plan Program EIR and the adopted Mitigation Monitoring Plans for the Specific Plan and WRP (May 2003), and are summarized above in **Table 4.8-1**. In addition, these mitigation measures (and related text) are set forth in full below, preceded by "SP," which stands for Specific Plan.

On-Site (Except SR-126 - See below)

The following mitigation is required relative to all on-site roadways and intersections except SR-126, which is discussed separately below:

SP-4.8-1 The applicants for future subdivision maps which permit construction shall be responsible for funding and constructing all on-site traffic improvements except as otherwise provided below. The obligation to construct improvements shall not preclude the applicants' ability to seek local, State or Federal funding for these facilities.

SP-4.8-2 Prior to the approval of each subdivision map which permits construction, the applicant for that map shall prepare a transportation performance evaluation which shall indicate the specific improvements for all on-site roadways which are necessary to provide adequate roadway and intersection capacity as well as adequate right-of-way for the subdivision and other expected traffic. Transportation performance evaluations shall be approved by Los Angeles County Department of Public Works according to standards and policies in effect at that time. The transportation performance evaluation shall form the basis for specific conditions of approval for the subdivision.

SP-4.8-3 The applicants for future subdivisions shall provide the traffic signals at the 15 locations labeled "B" through "P" in Figure 4.8-17 as well as any additional signals warranted by future subdivision design. Signal warrants shall be prepared as part of the transportation performance evaluations noted in Mitigation 4.8-2.

SP-4.8-4 All development within the Specific Plan shall conform to the requirements of the Los Angeles County Transportation Demand Management (TDM) Ordinance.

SP-4.8-5 The applicants for all future subdivision maps which permit construction shall consult with the local transit provider regarding the need for, and locations of, bus pull-ins on highways within the Specific Plan area. All bus pull-in locations shall be approved by the Department of Public Works, and approved bus pull-ins shall be constructed by the applicant.

Off-Site Arterials

SP-4.8-6 Prior to the recordation of the first subdivision map which permits construction, the applicant for that map shall prepare a transportation performance evaluation which shall determine the specific improvements needed to each off-site arterial and related costs in order to provide adequate roadway and intersection capacity for the expected Specific Plan and General Plan buildout traffic trips. The transportation performance evaluation shall be based on the Master Plan of Highways in effect at that time and shall be approved by the Los Angeles County Department of Public Works. The applicant shall be required to fund its fair share of improvements to these arterials, as stated on Table 4.8-18. The applicants total funding obligation shall be equitably distributed over the housing units and non-residential building square footage (*i.e.,* Business Park, Visitor-Serving, Mixed-Use, and Commercial) in the Specific Plan, and shall be a fee to be paid to the County and/or the City at each building permit. For off-site areas within the County unincorporated area, the applicant may construct improvements for credit against or in lieu of paying the fee.

Freeways and State Highways (I-5 and SR-126 in Los Angeles County)

SP-4.8-7 Each future performance evaluation which shows that a future subdivision map will create significant impacts on SR-126 shall analyze the need for additional travel lanes on SR-126. If

adequate lane capacity is not available at the time of subdivision, the applicant of the subdivision shall fund or construct the improvements necessary to serve the proposed increment of development. Construction or funding of any required facilities shall not preclude the applicant's ability to seek State, Federal or local funding for these facilities.

Congestion Management

SP-4.8-8 Project-specific environmental analysis for future subdivision maps which allow construction shall comply with the requirements of the Congestion Management Program in effect at the time that subdivision map is filed.

SR-126 in Ventura County

SP-4.8-9 Prior to the recordation of the first subdivision map which permits construction, the applicant for that map shall prepare a transportation evaluation including all of the Specific Plan land uses which shall determine the specific improvements needed to the following intersections with SR-126 in the City of Fillmore and community of Piru in Ventura County: "A", "B", "C", "D" and "E" Streets, Old Telegraph, Olive, Central, Santa Clara, Mountain View, El Dorado Road, and Pole Creek (Fillmore), and Main/Torrey and Center (Piru). The related costs of those intersection improvements and the project's fair share shall be estimated based upon the expected Specific Plan traffic volumes. The transportation performance evaluation shall be based on the Los Angeles County Master Plan of Highways in effect at that time and shall be approved by the Los Angeles County Department of Public Works. The applicant's total funding obligation shall be equitably distributed over the housing units and non-residential building square footage (*i.e.,* Business Park, Visitor Center, Mixed Use, and Commercial) in the Specific Plan, and shall be a fee to be paid to the City of Fillmore and the County of Ventura at each building permit.

Freeway/Highway Intersections and Interchanges

SP-4.8-10 The Specific Plan is responsible to construct or fund its fair-share of the intersections and interchange improvements indicated on Table 4.8-18. Each future transportation performance evaluation required by Mitigation Measure 4.8-2 which identifies a significant impact at these locations due to subdivision map-generated traffic shall address the need for additional capacity at each of these locations. If adequate capacity is not available at the time of subdivision map recordation, the performance evaluation shall determine the improvements necessary to carry Specific Plan generated traffic, as well as the fair share cost to construct such improvements. If the future subdivision is conditioned to construct a phase of improvements which results in an overpayment of the fair-share cost of the improvement, then an appropriate adjustment (offset) to the fees paid to Los Angeles County and/or City of Santa Clarita pursuant to Mitigation Measure 4.8-6 above shall be made.

SP-4.8-11 The applicant of the Newhall Ranch Specific Plan shall participate in an I-5 developer fee program, if adopted by the Board of Supervisors for the Santa Clarita Valley.

SP-4.8-12 The applicant of the Newhall Ranch Specific Plan shall participate in a transit fee program, if adopted for the entire Santa Clarita Valley by Los Angeles County and City of Santa Clarita.

SP-4.8-13 Prior to the approval of each subdivision map which permits construction, the applicant for that map shall prepare a traffic analysis approved by the Los Angeles County Department of Public Works. The analysis will assess project and cumulative development (including an existing plus cumulative development scenario under the County's Traffic Impact Analysis Report Guidelines (TIA) and its Development Monitoring System (DMS)). In response to the traffic analysis, the applicant may construct off-site traffic improvements for credit against, or in lieu of paying, the mitigation fees described in Mitigation Measure 4.8-6 above. If future subdivision maps are developed in phases, a traffic study for each phase of the subdivision map may be submitted to determine the improvements needed to be constructed with that phase of development.

Water Reclamation Plant

SP-5.0-36 If SR-126 is still a two-lane highway at the time of WRP construction, a construction traffic management plan shall be prepared and implemented. This plan shall address site access, staging and storage areas, hours of construction, work crew parking, warning and traffic control signs and devices, flag men, temporary detouring, *etc.*, as appropriate, to avoid a significant impact on SR-126.

SP-5.0-37 An encroachment permit shall be obtained from Caltrans, for access to the plant site from SR-126.

4.8.9.2 Mitigation Measures Already Required by the Adopted VCC EIR

The County of Los Angeles adopted mitigation measures to minimize traffic impacts within the VCC planning area as part of its approval of the VCC project. These measures are found in the previously certified VCC EIR (April 1990), and are summarized in **Table 4.8-2**, above. In addition, these mitigation measures are set forth in full below, preceded by "VCC-TR," which stands for Valencia Commerce Center - Traffic.

At the time of adoption, the VCC mitigation measures represented the best available mitigation imposed by Los Angeles County. As noted in **Subsection 4.8.1.2.1**, above, additional environmental review will be conducted by Los Angeles County with respect to the VCC planning area because the applicant recently submitted the last tentative parcel map for build-out of the VCC planning area. Implementation of the previously adopted, applicable VCC mitigation measures and additional mitigation requirements (*e.g.*, measures similar to those previously adopted for the Specific Plan area and/or recommended for the proposed Project) would ensure that significant impacts to traffic/access within the VCC planning area are reduced to the extent feasible.

VCC-TR-1 Participate in improvements to the Backer Road/I-5 Interchange.

VCC-TR-2 Improve Backer Rd. from the I-5 Freeway to Henry Mayo Dr. (SR-126).

VCC-TR-3 Improve Henry Mayo Drive from Backer Road to the I-5 Freeway with a minimum of two through lanes in each direction and additional turn lanes at Intersections.

VCC-TR-4 Provide full half-street improvements on SR-126 along project frontage to Expressway Standards.

VCC-TR-5 Provide detailed striping plans for Backer Rd. and The Old Road.

VCC-TR-6 Entering into a secured agreement with the Department of Public Works to contribute to the cost of installing signals at the following intersections as warrants indicate:

- The Old Road/Hasley Canyon Road;
- The Old Road/Backer Road;
- The Old Road/SB I-5 ramps (relocated);
- The Old Road/Sedona Way;
- The Old Road/SR-126 EB ramps;
- The Old Road/SR-126 WB ramps;
- Backer Road/I-5 NB ramps;
- Backer Road/I-5 SB ramps;
- Backer Road/Cambridge Drive;
- Backer Road/Hasley Canyon Road north;
- Backer Road/Hasley Canyon Road south;
- Backer Road/Henry Mayo Drive; and
- Backer Road/"C" Street

VCC-TR-7 Payment of appropriate Bridge and Thoroughfare District fees.

VCC-TR-8 Per Al Kelm of the Department of Public Works, Traffic and Lighting Division, occupancy permits shall not be issued until Backer Road is constructed from Hasley Canyon Road to SR-126 unless a traffic study shows, to the satisfaction of the Department of Public Works that adequate capacity is available for area traffic via an alternate access to SR-126.

VCC-TR-9 Supplemental traffic studies will be prepared as part of the individual tentative map processing.

VCC-TR-10 Backer Road will be realigned to the north a maximum distance of 50' and average distance of 25' to allow for the construction of an 11' combination berm and wall between the homes and the road.

VCC-TR-11 Pedestrian safety will be maintained through the construction of a paseo bridge across Backer Road, just west of the Cambridge intersection, and the placement of sidewalks along both sides of Backer Road.

VCC-TR-12 A noise study will be conducted subsequent to the completion of Backer Road from Hasley Creek to SR-126 to determine whether restrictions to nighttime truck traffic are warranted because of single event noise impacts to residents along Backer Road.

VCC-TR-13 Construction of 1/2 street improvements on The Old Road from Backer Rode to SR-126.

VCC-TR-14 Entering into a secured agreement with the Department of Public Works to contribute to the cost of installing signals at the following intersections:

- Backer Road/Biscailuz Drive;
- The Old Road/Biscailuz Drive;
- The Old Road/Hasley Canyon Road;
- I-5 southbound ramps/SR-126; and
- I-5 northbound ramps/SR-126

VCC-TR-15 Payment of appropriate Bridge and Thoroughfare District fees.

VCC-TR-16 Supplemental traffic studies will be prepared as part of the individual tentative map processing.

VCC-TR-17 Vacation of Hasley Canyon Road so that there is no through traffic between Backer and The Old Road.

4.8.9.3 Mitigation Measures Relating to the Entrada Planning Area

The County of Los Angeles has not yet prepared or released a draft EIR for the proposed development within the portion of the Entrada planning area that would be facilitated by approval of the SCP component of the proposed Project. As a result, there are no previously adopted mitigation measures for the Entrada planning area. However, the adoption and implementation of measures similar to those previously adopted for the Specific Plan area and/or recommended for the proposed Project would ensure that potential impacts to traffic/access within the Entrada planning area are reduced to the extent feasible.

4.8.9.4 Additional Mitigation Measures Proposed by this EIS/EIR

Based on the analysis presented above, the following mitigation measures, which are in addition to those previously adopted by the County of Los Angeles in connection with its approval of the Specific Plan, WRP, and VCC projects, are proposed to provide additional capacity at the impacted roadways throughout the Project study area. Additional capacity may be provided by constructing additional lanes, re-striping existing lanes, or implementing other roadway improvements. It should be noted that not all of the proposed mitigation measures are applicable to all of the Project alternatives. The applicability of each mitigation measure is noted in parentheses following the text of the mitigation measure. **Table 4.8-27**, Mitigation Measure Fair-Share Percentages, below, lists the applicable percentage contribution required of each Project alternative relative to each mitigation measure. The percentage is a calculation of the Project's share of the forecast increases in traffic at the identified location. (See **Appendix 4.8**, 2008 Traffic Report, Appendix E.) Each of the impacted locations is within an established (or in the case of the Westside, a proposed) bridge and thoroughfare assessment district, or within the limits of the planned I-5 improvement project. The additional measures are preceded by "TR," to designate that they are traffic-related mitigation.

Table 4.8-27
Mitigation Measure Fair-Share Percentages

Location/County	Fair-Share Percentages by Alternative					
	2	3	4	5	6	7
Magic Mtn west of Westridge/Los Angeles	n/a[1]	n/a[1]	n/a[1]	n/a[1]	100.0%	n/a[1]
Magic Mtn west of The Old Road/Los Angeles	n/a[1]	n/a[1]	n/a[1]	n/a[1]	55.6%	52.0%
The Old Road north of Rye Cyn/Los Angeles	n/a[1]	n/a[1]	n/a[1]	n/a[1]	33.3%	30.4%
The Old Road north of Magic Mtn/Los Angeles	33.3%	33.3%	n/a[1]	n/a[1]	61.0%	51.5%
Rye Cyn east of The Old Road/Los Angeles	37.5%	37.5%	33.3%	33.3%	44.4%	37.5%
Via Princessa east of Santa Clarita/Los Angeles	1.5%	1.5%	1.5%	1.5%	n/a[1]	n/a[1]
McBean south of Avenue Scott	n/a[1]	n/a[1]	n/a[1]	n/a[1]	33.3%	n/a[1]
I-5 south of Parker/Los Angeles	2.5%	2.5%	n/a[1]	n/a[1]	n/a[1]	n/a[1]
I-5 south of Hasley/Los Angeles	1.3%	1.3%	n/a[1]	n/a[1]	2.0%	0.7%
I-5 south of SR-126/Los Angeles	0.9%	1.8%	0.9%	n/a[1]	4.4%	0.9%
I-5 south of Rye Canyon/Los Angeles	4.1%	4.1%	n/a[1]	n/a[1]	n/a[1]	n/a[1]
I-5 south of Magic Mtn/Los Angeles	4.7%	4.7%	n/a[1]	n/a[1]	n/a[1]	n/a[1]
I-5 south of Valencia/Los Angeles	7.9%	7.9%	4.7%	n/a[1]	3.5%	n/a[1]
I-5 south of McBean/Los Angeles	6.4%	6.4%	4.3%	3.3%	3.3%	n/a[1]
I-5 south of Lyons/Los Angeles	15.9%	14.8%	12.7%	12.7%	11.5%	n/a[1]
I-5 south of Calgrove/Los Angeles	14.8%	14.8%	12.8%	10.7%	10.7%	5.1%

Notes:
[1] Not Applicable (no impact for this alternative at this location)
See Draft EIS/EIR, **Appendix 4.8**, December 2008 Traffic Report, for summary of ADT share calculation.

Source: Austin-Foust Associates, Inc. - December 2008

TR-1 The Project applicant shall design and construct Magic Mountain Parkway west of Westridge Parkway in a manner that increases the planned six-lane augmented roadway to an eight-lane roadway. (This mitigation measure is applicable to Alternative 6 only.)

TR-2 The Project applicant shall contribute its fair-share of the costs to add additional capacity to Magic Mountain Parkway west of The Old Road by increasing the planned eight-lane augmented roadway to a 10-lane roadway. (This mitigation measure is applicable to Alternative 7 only.)

TR-3 The Project applicant shall contribute its fair-share of the costs to add additional capacity to Magic Mountain Parkway west of The Old Road by increasing the planned eight-lane augmented roadway to a 10-lane augmented roadway. (This mitigation measure is applicable to Alternative 6 only.)

TR-4 The Project applicant shall contribute its fair-share of the costs to add additional capacity to The Old Road north of Rye Canyon Road by increasing the planned six-lane roadway to a six-lane augmented roadway. (This mitigation measure is applicable to Alternatives 6 and 7 only.)

TR-5 The Project applicant shall contribute its fair-share of the costs to add additional capacity to The Old Road north of Magic Mountain Parkway by increasing the planned six-lane roadway to a six-lane augmented roadway. (This mitigation measure is applicable to Alternatives 2, 3, and 7 only.)

TR-6 The Project applicant shall contribute its fair-share of the costs to add additional capacity to The Old Road north of Magic Mountain Parkway by increasing the planned six-lane roadway to an eight-lane augmented roadway. (This mitigation measure is applicable to Alternative 6 only.)

TR-7 The Project applicant shall contribute its fair-share of the costs to add additional capacity to Rye Canyon Road east of The Old Road by increasing the existing six-lane roadway to a six-lane augmented roadway. (This mitigation measure is applicable to Alternatives 2 through 7.)

TR-8 The Project applicant shall contribute its fair-share of the costs to add additional capacity to Via Princessa east of Santa Clarita Road by increasing the planned six-lane roadway to a six-lane roadway. (This mitigation measure is applicable to Alternatives 2, 3, 4 and 5 only.)

TR-9 The Project applicant shall contribute its fair-share of the costs to add additional capacity to McBean Parkway south of Avenue Scott by increasing the planned eight-lane roadway to an eight-lane augmented roadway. (This mitigation measure is applicable to Alternative 6 only.)

TR-10 The Project applicant shall contribute its fair-share of the costs of adding one HOV lane in each direction to the segment of I-5 south of Parker. (This mitigation measure is applicable to Alternatives 2 and 3.)

TR-11 The Project applicant shall contribute its fair-share of the costs of adding one HOV lane in each direction to the segment of I-5 south of Hasley. (This mitigation measure is applicable to Alternatives 2, 3, 6 and 7 only.)

TR-12 The Project applicant shall contribute its fair-share of the costs of adding one HOV lane in each direction to the segment of I-5 south of SR-126. (This mitigation measure is applicable to Alternatives 2, 3, 4, 6 and 7 only.)

TR-13 The Project applicant shall contribute its fair-share of the costs of adding one HOV lane in each direction to the segment of I-5 south of Rye Canyon. (This mitigation measure is applicable to Alternatives 2 and 3 only.)

TR-14 The Project applicant shall contribute its fair-share of the costs of adding one HOV lane in each direction to the segment of I-5 south of Magic Mountain Parkway. (This mitigation measure is applicable to Alternatives 2 and 3 only.)

TR-15 The Project applicant shall contribute its fair-share of the costs of adding one HOV lane in each direction to the segment of I-5 south of Valencia Boulevard. (This mitigation measure is applicable to Alternatives 2, 3, 4 and 6 only.)

TR-16 The Project applicant shall contribute its fair-share of the costs of adding one HOV lane in each direction to the segment of I-5 south of McBean Parkway. (This mitigation measure is applicable to Alternatives 2, 3, 4, 5 and 6 only.)

TR-17 The Project applicant shall contribute its fair-share of the costs of adding one HOV lane in each direction, and one truck lane in the southbound direction, to the segment of I-5 south of Lyons Avenue. (This mitigation measure is applicable to Alternatives 2, 3, 4, 5 and 6 only.)

TR-18 The Project applicant shall contribute its fair-share of the costs of adding one HOV lane in each direction, two truck lanes in the southbound direction, and one truck lane in the northbound direction to the segment of I-5 south of Calgrove Avenue. (This mitigation measure is applicable to Alternatives 2 through 7.)

With respect to Mitigation Measures TR-10 through TR-18, Caltrans presently is implementing the I-5 HOV + Truck Lanes - SR-14 to Parker Road project, which will add the identified HOV and truck lanes to I-5. Caltrans certified the Final EIR and approved the I-5 project in September 2009.~~is undergoing~~ The preliminary engineering and environmental studies for the project have been completed, the project is fully funded and included in the 2008 Regional Transportation Plan, and construction is anticipated to begin in 2011 and be completed ~~between 2014 and~~ in 2015. For additional information, please see Final EIS/EIR, **Appendix F4.8**, I-5 HOV/Truck Lanes Project SR-14 to Parker Road, Final Environmental Impact Report/Environmental Assessment with Finding of No Significant Impact (September 2009). The selected Project alternative, and other cumulative development, would be required to contribute its fair-share to the I-5 project, which will add: (1) one HOV lane in each direction on I-5 from the SR-14 interchange north to Parker Road; (2) truck climbing lanes in each direction from the SR-14 interchange to Calgrove Boulevard (northbound) and Pico Canyon Road/Lyons Avenue (southbound); and (3) full auxiliary lanes within portions of the Project study area. (See **(Revised) Figure 4.8-40**, Long-Range Freeway System for the Los Angeles County Area, and Draft EIS/EIR, **Appendix 4.8**, 2007 I-5 Improvement Project Study, and Transportation Concept Report, Caltrans, November 1998.)

4.8.9.5 Existing Plus Project Impacts Mitigation

Based on the existing plus project analysis presented herein, 14 roadway segments and one freeway segment would be significantly impacted under the proposed Project; a subset of these road segments would be significantly impacted under each of the Project alternatives.

Each of the significantly impacted segments is located within the Santa Clarita Valley portion of the study area, and each would be mitigated with: (i) construction of the new and expanded roadways built as part of the city of Santa Clarita and County of Los Angeles highway plans through the applicable Bridge and Thoroughfare Districts; (ii) construction of the roads to be built as part of the access for the proposed Project (see Draft EIS/EIR, **Appendix 4.8**, 2008 Traffic Report, Appendix B); and (iii) implementation of the specific mitigation measures identified in **Subsection 4.8.9.4**, Additional Mitigation Measures Proposed by this EIS/EIR.

(Revised) Figure 4.8-40 Long-Range Freeway System for the Los Angeles County Area

(AF 2008 TA Fig. 29)

Future conditions with the new and expanded roadways in place are evaluated in the long-range impacts analysis conducted for the proposed Project and the alternatives and presented in **Subsection 4.8.8**, Impacts of the Proposed Project and Alternatives. **Subsection 4.8.10**, Summary of Significance Findings, illustrates that with implementation of the identified specific Project mitigation measures, the significant impacts identified under the long-range impacts analysis would be reduced to less than significant. Thus, the analysis shows that with build-out of the city of Santa Clarita and County of Los Angeles highway plans, in combination with the mitigation measures identified in this EIS/EIR, the significant impacts identified under the existing plus project scenario would be fully mitigated and no additional or other mitigation would be necessary.

4.8.10 SUMMARY OF SIGNIFICANCE FINDINGS

Table 4.8-28, Mitigated Arterial and Freeway Segments - Long-Range Build-out Conditions - Volume/ Capacity Ratios, depicts the individual roadway segments significantly impacted by the Project alternatives, the number of lanes that would result with implementation of the proposed mitigation, and the resulting v/c ratios. As shown on **Table 4.8-28**, implementation of the proposed mitigation measures, in combination with implementation of other roadway improvements made necessary by cumulative development, would result in each of the impacted roadway segments operating at acceptable v/c and volume density ratios under the proposed Project and each alternative as a result of the increased capacity attributable to the roadway improvement mitigation. The increased capacity would accommodate the increased traffic and, thereby, reduce impacts to a level below significant. The one exception is Alternative 1, the No Action/No Project Alternative. As discussed in **Subsection 4.8.8.1**, under Alternative 1, deficient roadway conditions would continue at the following twelve locations: Via Princessa east of Santa Clarita Road, I-5 south of Hasley (SB), I-5 south of SR-126 (SB), I-5 south of Rye Canyon (SB), I-5 south of Magic Mountain (SB), I-5 south of Valencia (NB and SB), I-5 south of McBean (NB and SB), I-5 south of Lyons (NB and SB), and I-5 south of Calgrove (SB).[511]

[511] The resulting v/c ratio for Via Princessa east of Santa Clarita Road is depicted on **Table 4.8-28** because this segment would be significantly impacted by the Project alternatives and, therefore, is included within the table; the other road segments that would operate under deficient conditions under the No Action/No Project Alternative are not significantly impacted by the Project alternatives and, accordingly, not included on the table. **Appendix 4.8** includes the complete listing of v/c ratios for all study area road segments, including those segments that would operate at deficient conditions under the No Action/No Project Alternative.

Traffic and Transportation/Pedestrian and Bicycle Facilities Section, I-5 HOV/Truck Lanes Project SR-14 to Parker Road Final Environmental Impact Report/Environmental Assessment with Finding of No Significant Impact

2.6 Traffic and Transportation/Pedestrian and Bicycle Facilities

The information in this section is based on the *I-5 PA&ED HOV & Truck Lane–SR-14 to Parker Road Traffic Study* (Austin-Foust Associates, Inc., October 2007), the *I-5 PA&ED HOV & Truck Lane–SR-14 to Parker Road Supplemental Traffic Data* (Austin-Foust Associates, Inc., August 2008), and the *Draft Project Report* (Psomas, December 2008).

2.6.1 Regulatory Setting

Caltrans, as assigned by FHWA, directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (see 23 CFR 652). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

Caltrans is committed to carrying out the 1990 Americans with Disabilities Act (ADA) by building transportation facilities that provide equal access for all persons. The same degree of convenience, accessibility, and safety available to the general public will be provided to persons with disabilities.

2.6.2 Affected Environment

2.6.2.1 Existing Lane Configuration

For the traffic analysis, the study area is the Interstate 5 (I-5) corridor from San Fernando Road on the south to Lake Hughes Road on the north, which extends one interchange south and north of the limits of the proposed improvement (State Route 14 [SR-14] to south of Parker Road). As discussed in Chapter 1, within the study area, I-5 currently provides generally four mixed-flow lanes in each direction, with the exception of three mixed-flow lanes in each direction at the I-5/SR-14 interchange. In the proposed I-5 High-Occupancy Vehicle (HOV)/Truck Lanes project (project) area, two truck lanes are separated from the mainline freeway south of the Weldon Canyon Overcrossing. This truck bypass route begins/ends just north of the I-5/SR-14 interchange.

2.6.2.2 Baseline Traffic Condition

The existing (2006) a.m. and p.m. peak-hour traffic volumes, average daily traffic (ADT), and percentage of trucks on I-5 within the project limits are shown in Table 2.6.A. The existing (2006) a.m. and p.m. peak-period traffic volumes and ADT are shown in Table 2.6.B. The a.m. peak period is from 6:00 a.m. to 9:00 a.m. and the p.m. peak period is from 3:00 p.m. to 7:00 p.m. The peak hour is the hour during the peak period when traffic congestion is greatest.

Table 2.6.A 2006 Existing Peak-Hour Traffic Volumes

I-5 Segment	% Trucks (Daily)	A.M. Peak Hour		P.M. Peak Hour		ADT
		SB	NB	SB	NB	
North of Parker Road[1]	26.6	1,600	1,190	2,040	2,250	65,000
Between Parker Road and Hasley Canyon Road	20.8	2,210	1,570	2,420	2,790	83,000
Between Hasley Canyon Road and SR-126	17.3	3,110	2,170	3,010	3,620	100,000
Between SR-126 and Rye Canyon Road	15.3	3,420	3,340	4,150	4,080	124,000
Between Rye Canyon Road and Magic Mountain Parkway	14.2	4,200	3,340	5,350	4,080	134,000
Between Magic Mountain Parkway and Valencia Boulevard	12.2	4,490	4,490	5,600	5,270	156,000
Between Valencia Boulevard and McBean Parkway	10.6	5,310	5,430	6,420	6,050	179,000
Between McBean Parkway and Pico Canyon Road/Lyons Avenue	10.1	5,730	5,560	6,450	6,610	189,000
Between Pico Canyon Road/Lyons Avenue and Calgrove Boulevard	9.5	6,320	5,620	6,460	7,020	199,000
Between Calgrove Boulevard and SR-14	9.4	6,610	5,600	6,410	6,970	202,000
South of SR-14[2]	8.6	13,270	7,390	9,180	13,710	325,000

Source: Austin-Foust Associates, Inc., October 2007.
[1] This segment of I-5 is north of the project limits.
[2] This segment of I-5 is south of the project limits.
Peak hour = the hour during the peak period when traffic congestion is greatest.

Table 2.6.B 2006 Existing Peak-Period Traffic Volumes

I-5 Segment	A.M. Peak Period		P.M. Peak Period		ADT
	SB	NB	SB	NB	
North of Parker Road[1]	4,200	3,100	7,000	7,800	65,000
Between Parker Road and Hasley Canyon Road	5,800	4,100	8,300	9,600	83,000
Between Hasley Canyon Road and SR-126	8,200	5,700	10,400	12,500	100,000
Between SR-126 and Rye Canyon Road	9,000	8,800	14,300	14,100	124,000
Between Rye Canyon Road and Magic Mountain Parkway	11,100	8,800	18,400	14,100	134,000
Between Magic Mountain Parkway and Valencia Boulevard	11,800	11,800	19,300	18,200	156,000
Between Valencia Boulevard and McBean Parkway	14,000	14,300	20,700	20,900	179,000
Between McBean Parkway and Pico Canyon Road/Lyons Avenue	15,100	14,400	20,800	22,000	189,000
Between Pico Canyon Road/Lyons Avenue and Calgrove Boulevard	15,400	14,400	20,800	22,600	199,000
Between Calgrove Boulevard and SR-14	15,600	14,200	20,000	21,800	202,000

Source: Austin-Foust Associates, Inc., August 2008.
[1] This segment of I-5 is north of the project limits.
A.M. Peak Period = 6:00 a.m.–9:00 a.m.
P.M. Peak Period = 3:00 p.m.–7:00 p.m.

As shown in Table 2.6.A, the existing southbound a.m. and p.m. peak-hour traffic volumes within the project limits (SR-14 to Parker Road) range from 2,210 to 6,610 vehicles per hour (vph) and 2,420 to 6,460 vph, respectively. The existing northbound a.m. and p.m. peak-period traffic volumes range from 1,570 to 5,620 vph and 2,790 to 7,020 vph, respectively.

As described in Table 2.6.A, the percentage of truck traffic along I-5 within the project limits ranges from 9.4 percent to 20.8 percent of the total traffic volume. Truck percentages along the study area are higher than other freeway facilities, which generally average between 5 and 8 percent.

As shown in Table 2.6.B, the existing southbound a.m. and p.m. peak-period traffic volumes within the project limits range from 5,800 to 15,600 vph and 8,300 to 20,800 vph, respectively. The existing northbound a.m. and p.m. peak-period traffic volumes range from 4,100 to 14,400 vph and 9,600 to 22,600 vph, respectively. ADT ranges from 83,000 to 202,000 vehicles per day in the project segment of I-5.

The quality and density of traffic flow in the I-5 study area can be defined in terms of level of service (LOS) from A to F. LOS describes the efficiency of traffic flow, as well as how such conditions are perceived by those persons traveling in the traffic stream, and accounts for variables such as speed and travel time, freedom to maneuver, traffic interruptions, traveler comfort and convenience, and safety. LOS ranges from LOS A (free traffic flow with low volumes and high speeds, resulting in low densities) to LOS F (traffic volumes exceeding capacity and resulting in forced flow operations at low speeds, resulting in high densities). Table 1.A, provided earlier, is a graphic depiction of relative levels of congestion and speed associated with each LOS.

Table 2.6.C lists the existing (2006) a.m. and p.m. peak-hour traffic LOS for each segment of I-5 in the study area. As shown in this table, northbound I-5 from SR-14 to Magic Mountain Parkway currently operates at LOS C during the a.m. peak hour and at LOS C and D during the p.m. peak hour. Traffic conditions along southbound I-5 during the a.m. and p.m. peak hours operate at LOS E between Calgrove Boulevard and Pico Canyon Road/Lyons Avenue (Pico/Lyons) and at LOS F between the Truck Route Bypass and Calgrove Boulevard. During the p.m. peak hour, Pico/Lyons to Valencia Boulevard in the northbound direction operates at LOS D.

Table 2.6.C LOS Summary: Existing Conditions

I-5 Segment	A.M. Peak Hour	P.M. Peak Hour
	LOS	LOS
Northbound		
Lake Hughes Road to Parker Road	A	A
Parker Road to Hasley Canyon Road	A	B
Hasley Canyon Road to SR-126	B	B
SR-126 to Rye Canyon Road	B	B
Rye Canyon Road to Magic Mountain Parkway	B	B
Magic Mountain Parkway to Valencia Boulevard	C	C
Valencia Boulevard to McBean Parkway	C	C
McBean Parkway to Pico Canyon Road	C	D
Pico Canyon Road/Lyons Avenue to Calgrove Boulevard	C	D
Calgrove Boulevard to Truck Route Bypass	C	D
Truck Route Bypass to SR-14 On-Ramp	C	D
SR-14 on-Ramp to SR-14 Off-Ramp	C	D
Southbound		
Lake Hughes Road to Parker Road	A	A
Parker Road to Hasley Canyon Road	A	A
Hasley Canyon Road to SR-126	A	B
SR-126 to Rye Canyon Road	B	B
Rye Canyon Road to Magic Mountain Parkway	B	C
Magic Mountain Parkway to Valencia Boulevard	C	C
Valencia Boulevard to McBean Parkway	C	D
McBean Parkway to Pico Canyon Road/Lyons Avenue	C	D
Pico Canyon Road/Lyons Avenue to Calgrove Boulevard	E	E
Calgrove Boulevard to Truck Route Bypass	F	F
Truck Route Bypass to SR-14 On-Ramp	C	C
SR-14 On-Ramp to San Fernando Road	C	C

Source: Austin-Foust Associates, Inc., October 2007.
Peak hour = the hour during the peak period when traffic congestion is greatest.

Observations of vehicle occupancies collected in April 2005 for the segment of I-5 between SR-14 and Calgrove Boulevard are summarized in Table 2.6.D. The data indicate that average vehicle occupancies for this segment of freeway currently range between 1.3 and 1.4 persons per vehicle. These observations equate to approximately 27 percent of vehicles qualifying to use an HOV (2+ persons/vehicle) lane and just 6 percent of vehicles qualifying to use a 3+ persons/vehicle lane.

Table 2.6.D Average Vehicle Occupancy Survey

Location	Time	Direction	People per Vehicle			Average Vehicle Occupancy
			1	2	3+	
I-5 at Weldon Canyon Rd.	9:30–9:45 am	NB	378	139	58	1.44
I-5 at Weldon Canyon Rd.	9:30–9:45 am	SB	279	67	12	1.25
I-5 at Weldon Canyon Rd.	3:15–3:30 pm	SB	271	91	15	1.32
I-5 at Weldon Canyon Rd.	6:30–6:45 pm	NB	511	127	31	1.28
Total Vehicles			1,439	424	116	1.33
National Average – To or From Work						*1.14*
National Average – Social and Recreational						*2.03*
National Average – All Purposes						*1.63*
Percentage of observed vehicles that qualify to use a *2 or more persons per vehicle* carpool lane:						27%
Percentage of observed vehicles that qualify to use a *3 or more persons per vehicle* carpool lane:						6%

Sources: Austin-Foust Associates, Inc., October 2007.
NB = Northbound
SB = Southbound

2.6.2.3 Local Transit System

The City of Santa Clarita has a local transit system composed of nine routes that provide service to the Santa Clarita Valley area. The seven routes that cross or are adjacent to the I-5 project area are shown in Figure 2.6.1. Routes 1 and 2 provide service between Canyon Country (at Whites Canyon) and Castaic/Val Verde to Downtown Newhall. Routes 3 and 7 provide service between Seco Canyon Road and Six Flags Magic Mountain Theme Park. Routes 5 and 6 provide service between Newhall/Stevenson Ranch and Canyon Country (Shadow Pines and north of Sierra Highway), and Route 8 provides service to and from the McBean Transfer Station located at Valencia Boulevard and McBean Parkway, and the Sylmar Metrolink Station at Hubbard Avenue and Frank Modugno Drive. This route connects to eight Santa Clarita routes, six Metro routes, and one Los Angeles Department of Transportation (LADOT) route.[1]

[1] City of Santa Clarita, City of Santa Clarita Transit http://www.santa-clarita.com/cityhall/admin/transit/routes&schedules.asp, site accessed July 24, 2008.

2.6.2.4 Bicycle Facilities

Although there are multipurpose recreational trails (hiking, biking, and equestrian trails) in the project area, there are no existing or proposed dedicated bicycle lanes.[1,2,3] Multiuse recreational trails are discussed in Section 2.1, under Parks and Recreation.

2.6.2.5 Pedestrian Facilities

In the project area, there are existing sidewalks on Magic Mountain Parkway, Valencia Boulevard, McBean Parkway, and Lyons Avenue.

2.6.3 Environmental Consequences

2.6.3.1 Temporary Impacts

Alternative 1: No Build Alternative

Under the No Build Alternatives, the temporary traffic circulation impacts discussed below for the Build Alternatives would not occur. However, temporary traffic circulation impacts would occur during construction of the other transportation improvement projects included in the No Build Alternative.

Alternative 2: Reduced Median Alternative

Staged Construction

A staged construction approach is planned during construction of improvements. The majority of the project involves widening the median area and the outside shoulder area of I-5. Stage 1 activities would include widening the median, placing temporary railing in the median near the existing inside edge of traveled way, constructing the median retaining walls, and constructing the drainage crossings within the median.

Stage 2 activities would include placing temporary railing near the existing outside edge of traveled way, widening the proposed outside shoulder, constructing the outside retaining walls, and constructing the remaining portion of the proposed drainage crossings. Widening of existing structures and bridges would also be

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1 City of Santa Clarita, General Plan Circulation Element, December 1997.

2 County of Los Angeles, Department of Regional Planning, Santa Clarita Valley Area Plan, December 1990.

3 City of Santa Clarita, City of Santa Clarita Trails Map, http://www.santa-clarita.com/cityhall/parks/trails/trailsmap.asp, site accessed February 5, 2008.

constructed in stages, with interior widening being completed first, followed by exterior widening.

Closures/Detours

Late-night closures of I-5 in each direction may be necessary for removal of the existing Weldon Overcrossing. Reconstruction at interchange on- and off-ramps throughout the project area may also require short-term nighttime closures for up to five working days. Potential traffic impacts would be limited given either the low volume of vehicles or the short extent of the closure.

An extended (three-month) temporary ramp closure is expected at the Pico/Lyons Interchange during construction of Alternative 2. To meet the vertical clearance requirements between the I-5 southbound lanes and the Pico/Lyons overcrossing, the southbound Pico/Lyons Interchange loop on-ramp would be shut down while the mainline profile is lowered. During the closure, traffic would be detoured to the southbound diagonal on-ramp. Once the southbound mainline profile can be lowered to provide the minimum vertical clearance, the southbound loop on-ramp would be opened for traffic use. The remaining ramp modifications are expected to require no or minimal ramp closures. Temporary traffic impacts were studied as part of the *Supplemental Traffic Data*, which concluded that traffic at Pico Canyon Road would operate at an acceptable LOS during construction.

No other closures or detours at bridges are anticipated during construction. In addition, construction is not anticipated to result in any local street closures.

With the avoidance and/or minimization measures outlined below in Section 2.6.4, potential temporary impacts to traffic and circulation under Alternative 2 would not be adverse.

Transit Systems/Bicycle and Pedestrian Facilities

Temporary circulation and access impairment discussed above under closures/detours may impact the transit services in the area during the construction of Alternative 2.

Because there are no bicycle facilities in the project area, Alternative 2 would not result in temporary impacts to bicycle facilities.

Construction activities and ramp modifications at Magic Mountain Parkway, Valencia Boulevard, McBean Parkway, and Lyons Avenue could block pedestrian access and require temporary detours of pedestrian facilities at these locations.

With the avoidance and/or minimization measures outlined below in Section 2.6.4, potential temporary impacts to transit systems and pedestrian facilities under Alternative 2 would not be adverse.

Alternative 3: Full Median Alternative

Closures/Detours

In addition to the extended temporary ramp closure at the Pico/Lyons Interchange, discussed above under Alternative 2, traffic would be affected temporarily during construction of the Biscailuz Drive/Honor Ranch Overcrossing under Alternative 3.

The Biscailuz Drive/Honor Ranch Overcrossing would be constructed using a half-width construction to allow continued access to Biscailuz Drive and maintain traffic flow on the overcrossing during construction. The three phases of half-width construction would be as follows:

1. Half of the new bridge would be constructed just north of the existing structure. Because the existing bridge structure is not affected during this stage, it would remain open to traffic.
2. The existing bridge would be removed and the remaining half of the proposed bridge would be constructed. Traffic would be shifted to the portion of the new bridge that was previously constructed under Phase 1.
3. The two halves of the newly constructed bridge would be joined.

During Phase 2 of the half-width construction, only one lane would remain open, which would require temporary traffic signals or flagpersons to control traffic. The bridge serves as one of two access points for the Peter Pitchess Detention Center. Through traffic does not utilize the bridge. With reduced access during this phase, some limited traffic delays could occur for vehicles entering and exiting the Detention Center.

As with Alternative 2, construction of Alternative 3 would be completed in stages. Late-night closures in each direction may be necessary for removal of the existing Weldon and Biscailuz Drive Overcrossings. Similar to Alternative 2, reconstruction at the ramp exits and entrances may also require short-term nighttime closures for up to five working days.

Modifications at the Pico/Lyons Interchange would also require an extended ramp closure.

With the avoidance and/or minimization measures outlined below in Section 2.6.4, potential temporary impacts to traffic and circulation under Alternative 3 would not be adverse.

Transit Systems/Bicycle and Pedestrian Facilities

Temporary circulation and access impairment discussed above under closures/detours may impact the transit services in the area during construction of Alternative 3.

Because there are no bicycle facilities in the project area, Alternative 3 would not result in temporary impacts to bicycle facilities.

Alternative 3 would result in the same impacts to pedestrian facilities during construction as those discussed above for Alternative 2.

With the avoidance and/or minimization measures outlined below in Section 2.6.4, potential temporary impacts to transit systems and pedestrian facilities under Alternative 3 would not be adverse.

Temporary traffic impacts to transit, bicycle, and pedestrian facilities of the EIP improvements would be similar to those identified for the Build Alternatives; however, they would be limited to the mainline freeway and local interchanges between Pico/Lyons and SR-14. With avoidance and/or minimization measures outlined below in Section 2.6.4, potential temporary impacts to transit systems and pedestrian facilities under Alternative 3 would not be adverse.

2.6.3.2 Permanent Impacts

Alternative 1: No Build Alternative

The No Build Alternative would not provide any road improvements within the study area. As a result, traffic congestion would continue to increase along I-5. LOS would continue to deteriorate due to anticipated traffic volume increases between existing and 2030 conditions.

Future-year traffic forecasts have been obtained from the Santa Clarita Valley Consolidated Traffic Model (SCVCTM), where future traffic conditions were forecast using a constrained flow model. This model reflects the actual flow of traffic volumes south of the I-5/SR-14 interchange, which is constrained by the available capacity of that section of the freeway. The constrained flow model provides a realistic peak-hour volume for the freeway segments north of the I-5/SR-14 interchange by taking into account the constraints that determine the flow rates south of the interchange.

For comparison with the existing (2006) conditions, presented previously in Tables 2.6.A and 2.6.B, the 2015 and 2030 No Build peak-hour traffic volumes, peak-period traffic volumes, and ADT are shown in Tables 2.6.E and 2.6.F. As shown in these tables, the peak-period traffic volumes are expected to continue increasing over the next two decades. This increase in traffic volumes would increase traffic congestion in the project area under the existing lane configuration, which would result in a decrease in LOS.

As shown previously in Table 2.6.C, I-5 currently (as of 2006) operates primarily between LOS B and D in the northbound direction and between LOS B and F in the southbound direction. As shown in Tables 2.6.G and 2.6.H, under the No Build scenario, the LOS is expected to degrade as traffic volumes increase. By 2030, I-5 is forecast to operate primarily at LOS E and F during the p.m. peak hour. During the a.m. peak hour, I-5 is forecast to operate primarily between LOS D and F.

Transit Systems/Bicycle and Pedestrian Facilities

Because there are no existing or proposed bicycle facilities in the project area, the No Build Alternative would not result in permanent impacts to bicycle facilities.

No improvements to the I-5 mainline, bridges, and overcrossings in the project area would occur under the No Build Alternative. Therefore, the No Build Alternative would not result in permanent impacts to pedestrian facilities or transit services.

Alternative 2: Reduced Median Alternative

Build Alternative 2 would provide the following lanes within the project segment of I-5: (1) one HOV lane in each direction from the I-5/SR-14 interchange to south of the Parker Road interchange, (2) one northbound truck lane from where the truck lanes currently merge with northbound I-5 near the Weldon Canyon Road/I-5 interchange to the Calgrove Boulevard/I-5 interchange, (3) two southbound truck climbing lanes between Weldon Canyon Road and Calgrove Boulevard, and (4) one southbound truck lane between Calgrove Boulevard and the Pico/Lyons interchange.

Alternative 2 also proposes adding and/or extending auxiliary lanes in the northbound direction from SR-14 to the northbound truck lane merge, from Calgrove Boulevard to Pico/Lyons, and from Valencia Boulevard to Magic Mountain Parkway, and in the

Table 2.6.E 2015 and 2030 No Build Peak-Hour Traffic Volumes

I-5 Segment	2015 A.M. Peak Hour		2015 P.M. Peak Hour		2015 ADT	2015 % Trucks (Daily)	2030 A.M. Peak Hour		2030 P.M. Peak Hour		2030 ADT	2030 % Trucks (Daily)
	SB	NB	SB	NB			SB	NB	SB	NB		
North of Parker Road[1]	3,300	2,700	4,100	4,700	137,000	15.0	5,200	4,100	6,500	6,800	207,000	15
Between Parker Road and Hasley Canyon Road	4,700	3,100	4,700	6,100	163,000	13.0	6,700	4,900	7,600	8,200	240,000	12
Between Hasley Canyon Road and SR-126	5,300	4,800	6,400	6,500	179,000	12.0	7,200	6,500	9,100	8,700	251,000	10.5
Between SR-126 and Rye Canyon Road	4,900	5,600	6,800	5,800	171,000	12.0	7,000	6,900	9,200	7,700	234,000	10.5
Between Rye Canyon Road and Magic Mountain Parkway	5,100	5,600	8,100	5,800	191,000	12.0	7,200	6,900	10,100	7,700	255,000	10.5
Between Magic Mountain Parkway and Valencia Boulevard	5,400	6,200	7,800	6,200	203,000	11.5	7,300	7,100	9,800	7,900	263,000	10.5
Between Valencia Boulevard and McBean Parkway	6,100	7,000	8,200	6,800	216,000	10.5	8,100	7,600	10,000	8,300	268,000	10.5
Between McBean Parkway and Pico Canyon Road/Lyons Avenue	5,900	6,900	8,000	7,000	226,000	10.1	7,800	7,500	9,600	8,400	283,000	9.5
Between Pico Canyon Road/Lyons Avenue and Calgrove Boulevard	6,600	6,500	7,400	7,300	220,000	9.5	7,300	7,000	8,900	8,400	281,000	9.5
Between Calgrove Boulevard and SR-14	6,700	6,100	7,400	7,200	229,000	9.4	7,400	6,400	8,800	8,200	290,000	9.4

Source: Austin-Foust Associates, Inc., August 2008.
[1] This segment of I-5 is north of the project limits.
ADT = average daily traffic
NB = northbound
Peak hour = the hour during the peak period when traffic congestion is greatest.
SB = southbound

Table 2.6.F 2015 and 2030 No Build Peak-Period Traffic Volumes

I-5 Segment	2015 A.M. Peak Period		2015 P.M. Peak Period		2015 ADT	2030 A.M. Peak Period		2030 P.M. Peak Period		2030 ADT
	SB	NB	SB	NB		SB	NB	SB	NB	
North of Parker Road[1]	8,700	7,100	14,100	16,200	137,000	15,300	11,400	24,100	26,200	207,000
Between Parker Road and Hasley Canyon Road	12,400	8,200	16,200	21,000	163,000	19,700	13,600	28,100	31,500	240,000
Between Hasley Canyon Road and SR-126	13,900	12,600	22,100	22,400	179,000	21,200	18,300	32,500	32,800	251,000
Between SR-126 and Rye Canyon Road	12,900	14,700	23,400	20,000	171,000	20,600	19,700	31,700	28,500	234,000
Between Rye Canyon Road and Magic Mountain Parkway	13,400	14,700	27,900	20,000	191,000	21,200	19,700	34,800	28,500	255,000
Between Magic Mountain Parkway and Valencia Boulevard	14,200	16,300	26,900	21,400	203,000	21,500	20,300	33,800	29,300	263,000
Between Valencia Boulevard and McBean Parkway	16,100	18,400	28,300	23,400	216,000	23,800	22,000	35,100	31,300	268,000
Between McBean Parkway and Pico Canyon Road/Lyons Avenue	15,500	18,200	27,600	24,100	226,000	22,900	22,100	34,300	32,300	283,000
Between Pico Canyon Road/Lyons Avenue and Calgrove Boulevard	17,400	17,100	25,500	25,200	220,000	21,500	20,600	31,800	32,300	281,000
Between Calgrove Boulevard and SR-14	17,600	16,100	25,500	24,800	229,000	21,800	18,800	31,400	31,500	290,000

Source: Austin-Foust Associates, Inc., October 2007.
[1] This segment of I-5 is north of the project limits.
A.M. Peak Period = 6:00 a.m.–9:00 a.m.
P.M. Peak Period = 3:00 p.m.–7:00 p.m.
ADT = average daily traffic
NB = northbound
Peak hour = the hour during the peak period when traffic congestion is greatest.
SB = southbound

Table 2.6.G 2015 No Build and Build LOS

I-5 Segment	2015 No Build		2015 Build					
	Mixed Flow Lanes		Mixed Flow Lanes		HOV Lane		Truck Lane(s)	
	A.M. Peak Hour	P.M. Peak Hour	A.M. Peak Hour	P.M. Peak Hour	A.M. Peak Hour	P.M. Peak Hour	A.M. Peak Hour	P.M. Peak Hour
Northbound								
Lake Hughes Road to Parker Road[1]	B	C	B	C	--	--	--	--
Parker Road to Hasley Canyon Road	B	C	A	C	A	A	--	--
Hasley Canyon Road to SR-126	C	D	B	C	A	A	--	--
SR-126 to Rye Canyon Road	C	C	C	C	A	A	--	--
Rye Canyon Road to Magic Mountain Parkway	C	C	C	C	A	A	--	--
Magic Mountain Parkway to Valencia Boulevard	D	D	C	C	B	B	--	--
Valencia Boulevard to McBean Parkway	D	D	C	C	B	B	--	--
McBean Parkway to Pico Canyon Road/Lyons Avenue	D	D	C	C	B	B	--	--
Pico Canyon Road/Lyons Avenue to Calgrove Boulevard	D	D	C	C	A	B	--	--
Calgrove Boulevard to Truck Route Bypass	C	D	B	C	A	B	A	A
Truck Route Bypass to SR-14 Ramp (On)	C	C	B	B	A	B	--	--
SR-14 Ramp (On) to SR-14 Ramp (Off)	C	D	B	C	A	B	--	--
Southbound								
Lake Hughes Road to Parker Road[1]	B	B	B	B	--	--	--	--
Parker Road to Hasley Canyon Road	C	C	B	B	A	A	--	--
Hasley Canyon Road to SR-126	C	D	B	C	A	B	--	--
SR-126 to Rye Canyon Road	C	D	B	C	A	B	--	--
Rye Canyon Road to Magic Mountain Parkway	C	E	B	D	A	B	--	--
Magic Mountain Parkway to Valencia Boulevard	C	E	C	D	A	B	--	--
Valencia Boulevard to McBean Parkway	D	F	B	C	A	B	--	--
McBean Parkway to Pico Canyon Road/Lyons Avenue	C	E	C	D	A	B	--	--
Pico Canyon Road/Lyons Avenue to Calgrove Boulevard	E	F	C	C	A	B	A	A
Calgrove Boulevard to Truck Route Bypass	F	F	--	--	--	--	--	--
Calgrove Boulevard to Truck Route Bypass (1 truck lane)	--	--	C	C	A	B	A	A
Calgrove Boulevard to Truck Route Bypass (2 truck lanes)	--	--	C	C	A	B	A	A
Truck Route Bypass to SR-14 Ramp (On)	C	D	B	C	A	B	--	--
SR-14 Ramp (On) to San Fernando Road[2]	C	C	C	B	A	B	--	--

Source: Austin-Foust Associates, Inc., October 2007.
[1] This segment of I-5 is north of the project limits.
[2] This segment of I-5 is south of the project limits.
Peak hour = the hour during the peak period when traffic congestion is greatest.

Table 2.6.H 2030 No Build and Build LOS

I-5 Segment	2030 No Build		2030 Build					
	Mixed Flow Lanes		Mixed Flow Lanes		HOV Lane		Truck Lane(s)	
	A.M. Peak Hour	P.M. Peak Hour	A.M. Peak Hour	P.M. Peak Hour	A.M. Peak Hour	P.M. Peak Hour	A.M. Peak Hour	P.M. Peak Hour
Northbound								
Lake Hughes Road to Parker Road[1]	B	D	B	D	--	--	--	--
Parker Road to Hasley Canyon Road	C	E	B	D	A	C	--	--
Hasley Canyon Road to SR-126	D	F	C	D	A	C	--	--
SR-126 to Rye Canyon Road	D	E	C	C	A	C	--	--
Rye Canyon Road to Magic Mountain Parkway	D	E	C	C	A	C	--	--
Magic Mountain Parkway to Valencia Boulevard	D	E	C	D	C	C	--	--
Valencia Boulevard to McBean Parkway	E	E	C	D	C	C	--	--
McBean Parkway to Pico Canyon Road/Lyons Avenue	E	F	D	D	C	C	--	--
Pico Canyon Road/Lyons Avenue to Calgrove Boulevard	D	E	C	D	B	C	--	--
Calgrove Boulevard to Truck Route Bypass	D	E	C	C	A	C	A	A
Truck Route Bypass to SR-14 Ramp (On)	C	E	B	D	A	C	--	--
SR-14 Ramp (On) to SR-14 Ramp (Off)	C	D	B	C	A	C	--	--
Southbound								
Lake Hughes Road to Parker Road[1]	C	D	C	D	--	--	--	--
Parker Road to Hasley Canyon Road	D	E	C	C	B	C	--	--
Hasley Canyon Road to SR-126	D	F	C	D	B	E	--	--
SR-126 to Rye Canyon Road	D	F	C	D	B	E	--	--
Rye Canyon Road to Magic Mountain Parkway	D	F	C	E	B	E	--	--
Magic Mountain Parkway to Valencia Boulevard	E	F	D	E	B	E	--	--
Valencia Boulevard to McBean Parkway	F	F	C	D	B	E	--	--
McBean Parkway to Pico Canyon Road/Lyons Avenue	E	F	D	E	B	E	--	--
Pico Canyon Road/Lyons Avenue to Calgrove Boulevard	F	F	C	D	B	D	A	A
Calgrove Boulevard to Truck Route Bypass	F	F	--	--	--	--	--	--
Calgrove Boulevard to Truck Route Bypass (1 truck lane)	--	--	C	D	B	C	A	B
Calgrove Boulevard to Truck Route Bypass (2 truck lanes)	--	--	C	C	B	C	A	-A
Truck Route Bypass to SR-14 Ramp (On)	C	D	B	C	B	C	--	--
SR-14 Ramp (On) to San Fernando Road[2]	D	E	C	C	B	C	--	--

Source: Austin-Foust Associates, Inc., October 2007.
[1] This segment of I-5 is north of the project limits.
[2] This segment of I-5 is south of the project limits.
Peak hour = the hour during the peak period when traffic congestion is greatest.

southbound direction from McBean Parkway to Valencia Boulevard, from Magic Mountain Parkway to Rye Canyon Road, and from Rye Canyon Road to State Route 126 (SR-126).

The proposed project would not generate traffic. It is intended to facilitate the redistribution of existing and future traffic demand based on full build-out of land uses allowed by the City of Santa Clarita and County of Los Angeles. A freeway facility is neither an origin nor a destination, as it does not produce or attract trips. The freeway provides a route from one location to another, but it does not change the number of daily trips that need to be made from Point A to Point B. Therefore, the 2015 and 2030 a.m. and p.m. traffic volumes and ADT for Alternatives 2 and 3 are the same as those shown previously for the No Build Alternative in Tables 2.6.D and 2.6.E.

Similarly, the project corridor represents one of a very limited number of potential routes for north/south truck trips. United States Route 101 (US-101) is approximately 40 miles west of the project corridor and Interstate 15 (I-15) is approximately 60 miles to the east. Due to the lack of alternative routes in the vicinity of the project corridor, construction of the proposed truck climbing lanes is expected to have a negligible effect in regard to truck trip route selection. As such, truck volumes for the Build Condition would not vary by an appreciable amount compared to the 2030 No Build truck volumes shown in Table 2.6.I.

Tables 2.6.I and 2.6.J list the future (2015 and 2030) No-Build and Build a.m. and p.m. peak-hour traffic LOS for the project segment of I-5 with the proposed project. Compared to the No Build Alternative LOS, the proposed project would improve the LOS in most segments of I-5 within the project limits. As discussed in Section 1.2.1.2, the mountainous and hilly topography, combined with the large volume of trucks and passenger vehicles, results in conflicts and inefficient operations along the project segment of I-5. Provision of truck lanes would reduce congestion and delay by separating trucks from passenger cars and reduce the interaction associated with these vehicle types. In addition, provision of HOV lanes would further reduce congestion and delay in the general-purpose lanes by taking passenger vehicles out of the general-purpose lanes. As shown in Table 2.6.J, under the No Build condition, the I-5 freeway is forecast to operate primarily at LOS E and F during the p.m. peak hour and LOS D, E, and F during the a.m. peak hour by 2030. With the proposed improvements, I-5 would operate primarily at LOS C or D, with a maximum LOS of E on only three southbound segments during the p.m. peak hour. This analysis is

based on allowing use of the HOV lanes for vehicles with occupancies of two or more persons and construction of truck lanes.

Table 2.6.I Existing and Future (2015 and 2030) Annual Travel Times–Southbound Direction AM

Scenario	Annual Travel Time (vehicle-hours/year)	Travel Time (min)[1]	
		Mix-Flow Lanes	HOV Lanes
Existing Conditions	14,138,730	17	N/A
2015 No Build Alternative	21,501,649	21	N/A
2015 Build Alternatives	15,443,297	13	12
Time Saved (2015)	6,058,351	8	9
2030 No Build Alternatives	44,736,162	39	N/A
2030 Build Alternatives	23,245,054	16	14
Time Saved (2030)	21,491,108	23	25

Source: Austin-Foust Associates, Inc., August 2008.
[1] Parker Road to State Route 14 (SR-14)
HOV = high-occupancy vehicle
Min = minutes

Table 2.6.J Southbound Truck Lane Addition LOS Analysis

Freeway Section		SB Between Pico/Lyons Ave & Calgrove Blvd		SB Between Calgrove Blvd & SR-14	
Peak Hour		**AM**	**PM**	**AM**	**PM**
2006 Existing	LOS	E	E	F	F
	Density (pc/mi/ln)	35.5	38.3	*	*
	Ave pc speed (mph)	61.1	58.6	*	*
2010 No Improvements	LOS	E	E	F	F
	Density (pc/mi/ln)	36.4	43.3	*	*
	Ave pc speed (mph)	60.3	54.6	*	*
2010 With Truck Lane	LOS	C	D	D	D
	Density (pc/mi/ln)	23.8	26.1	27.5	29.3
	Ave pc speed (mph)	69.2	68.1	67.3	66.0

Source: Source: Austin-Foust Associates, Inc., October 2007.
*Density and average passenger car speed are not calculated for LOS F.
LOS = level of service SB = southbound SR-14 = State Route 14
mph = miles per hour pc/mi/ln = passenger car per mile per lane

Existing travel time within the project corridor is approximately 14,100,000 vehicle-hours per year, as shown in Table 2.6.I. Without the proposed project, travel time is expected to increase to approximately 21,500,000 vehicle-hours per year by the year 2015. With the project, in 2015 the annual travel time is shown as approximately 15,400,000 vehicle-hours, representing a reduction of 6,100,000 vehicle-hours.

In 2030, travel time within the project corridor is expected to increase to approximately 44,700,000 vehicle-hours per year without the project. With the proposed project, the 2030 annual travel time is estimated as approximately 23,200,000 vehicle-hours, for a savings of 21,500,000 vehicle-hours.

An example of actual corridor travel time is also provided in Table 2.6.E. Traveling from Parker Road to SR-14 during the a.m. peak hour is currently estimated to take approximately 17 minutes. Without the project, that travel time is expected to increase to approximately 21 minutes by the year 2015. With the project, in 2015 the travel time decreases to 13 minutes for the mixed-flow lanes and 12 minutes for the HOV lane. In 2030, the travel time without the project is expected to increase to approximately 39 minutes. With the project, the 2030 travel time decreases to 16 minutes for the mixed-flow lanes and 14 minutes for the HOV lane. The improvement in travel time would occur as a result of the reduction in congestion and delay provided by the provision of HOV and truck lanes. As discussed above, truck lanes would separate trucks from passenger cars and reduce the interaction between these vehicle types. HOV lanes would reduce the number of passenger vehicles in the general-purpose lanes.

In summary, Alternative 2 would provide a beneficial impact to LOS and travel time in the project corridor by removing vehicles from the general-purpose lanes and reducing the interaction of trucks and passenger vehicles, both of which would result in a reduction in congestion and delay.

Transit Systems/Bicycle and Pedestrian Facilities

Because there are no existing or proposed bicycle facilities in the project area, Alternative 2 would not result in permanent impacts to bicycle facilities.

Alternative 2 would not result in direct permanent impacts to pedestrian facilities or bus routes. All impacts would be temporary during construction, and the existing pedestrian facilities and bus routes would not be altered by the construction of Alternative 2. Therefore, the No Build Alternative would not result in permanent impacts to pedestrian facilities or transit services.

Pedestrian facilities or other types of facilities are not allowed within the project area. Therefore, the Americans with Disabilities Act (ADA) Standards for Accessible Design (28 CFR Part 36) do not apply. Outreach would be conducted as part of the Traffic Management Plan (TMP) described below in Measure T-1.

Alternative 3: Full Median Alternative

Because Alternatives 2 and 3 would provide the same HOV and truck lanes, permanent traffic impacts of Alternative 2 would be the same as those discussed above for Alternative 2. Alternative 3 would provide a beneficial impact to LOS and travel time in the project corridor by removing vehicles from the general-purpose lanes and reducing the interaction of trucks and passenger vehicles, both of which would result in a reduction in congestion and delay.

As discussed above for Alternative 2, Alternative 3 would not result in permanent impacts to bicycle, pedestrian facilities, and transit services.

Early Implementation Project (EIP)

Both the Traffic Study and the Supplemental Traffic Data include evaluation of the EIP. The analysis for the extension of the southbound truck lane was obtained from traffic counts from the sections between Pico/Lyons and Calgrove Boulevard, and between Calgrove Boulevard and SR-14. Based on this analysis, the existing LOS in these segments ranges from LOS E (in the a.m. and p.m. peak hours between Pico/ Lyons and Calgrove Boulevard) and F (between Calgrove Boulevard and SR-14). As shown in Table 2.6.J, the extension of a southbound truck lane is expected to improve the 2010 peak-hour operating conditions from an unacceptable LOS E or F under the No Build condition to an acceptable LOS C or D service level with extension of the truck lane. The highest flow rate is expected to be approximately 410 trucks per hour.

The analysis for the addition of the northbound climbing lane was obtained from traffic counts within the section between SR-14 and Calgrove Boulevard. The addition of the northbound climbing truck lane is forecast to improve the peak-hour operating conditions in 2010 from LOS D (No Build) to LOS C (with truck lane) in the a.m. peak hour and from an unacceptable LOS F (No Build) to LOS D (with truck lane) in the p.m. peak hour (Table 2.6.K). The single truck lane is expected to operate at an acceptable LOS based on an anticipated maximum truck flow rate of approximately 500 trucks per hour.

Construction of the EIP would allow the slower-moving trucks to use the outside lanes in each direction to reduce delays to vehicles caused by slower-moving trucks and to facilitate the movement of freight and goods through the southern portion of this segment of I-5.

Table 2.6.K EIP Northbound Truck Lane Extension LOS Analysis

Freeway Section		NB Between Calgrove Blvd & SR-14	
Peak Hour		**AM**	**PM**
2006 Existing	LOS	C	D
	Density (pc/mi/ln)	22.9	30.3
	Ave pc speed (mph)	69.5	65.3
2010 No Improvements	LOS	D	F
	Density (pc/mi/ln)	30.1	>45.0
	Ave pc speed (mph)	65.4	<53.3
2010 With Truck Lane	LOS	C	D
	Density (pc/mi/ln)	21.1	26.7
	Ave pc speed (mph)	69.9	67.8

Source: Source: Austin-Foust Associates, Inc., August 2008.
LOS = level of service
NB = northbound
SR-14 = State Route 14
mph = miles per hour
pc/mi/ln = passenger car per mile per lane

The EIP improvements would initiate the beneficial impact to LOS in the project corridor and no permanent impacts are anticipated.

The EIP would not result in permanent impacts to bicycle, pedestrian facilities, and transit services.

2.6.4 Avoidance, Minimization, and/or Mitigation Measures

The measures outlined below would avoid or minimize potential impacts on local arterials during construction:

T-1 Prior to construction, the California Department of Transportation (Caltrans) will prepare a final Traffic Management Plan (TMP) that will consist of, but not be limited to, the following standard measures to alleviate traffic inconvenience caused by construction activities.

- **Traffic Control:** This project will require traffic control elements such as lane/shoulder closures and temporary signing/striping on the Interstate 5 (I-5) ramps and the I-5 mainline.
- **Construction Zone Enhanced Enforcement Program (COZEEP):** Through coordination with Caltrans and the California Highway Patrol (CHP), this program was developed to provide a safer work zone for both construction workers and the

motoring public. The program uses two CHP officers who enforce lane closures and also provide a visual deterrent to errant/speeding vehicles.

- **Public Awareness Campaign (PAC):** Although the majority of the major closures will occur at night, vehicles traveling through the construction zone will likely experience longer-than-normal delays. To reduce these delays and confusion to the motoring public during construction activities, Caltrans will implement a PAC. The purpose of the PAC is to keep the surrounding community abreast of the project's progress and construction activities that could affect their travel plans. The use of mailers/ flyers, local newspaper advertising, local radio information, public meetings, a project Web site, and e-mail as appropriate should be effective tools for disseminating this information. In addition, all construction activities would be closely coordinated with the City of Santa Clarita; County of Los Angeles fire, law enforcement, and other emergency services; and other construction projects that may occur at the same time.
- Comprehensive Stage Construction and Traffic Handling Plans.
- **Signing:** The project would require use of real-time communications with motorists, such as changeable message signs and highway advisory announcements to alert motorists of upcoming construction activities, detours, and traffic conditions. Signage should be posted on I-5, SR-14, SR-126, and local arterials.
- Identification of park-and-ride facilities, along with encouragement of other public transit and ridesharing usage.
- **Pedestrian Access:** Provide a pedestrian detour plan to accommodate sidewalk closures.

T-2 Prior to construction, the California Department of Transportation (Caltrans) will prepare a Ramp Closure Study for all ramps that will be closed for more than 10 consecutive days.

Figure 2.6.1 Local Transit System

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I-5 PA&ED HOV & Truck Lanes - SR-14 to Parker Road Traffic Study, Austin-Foust Associations, Inc. (October 2007), pp. 17, 19, 27

I-5 PA&ED HOV & TRUCK LANES – SR-14 TO PARKER ROAD

TRAFFIC STUDY

OCTOBER 2007

AUSTIN-FOUST ASSOCIATES, INC.

I-5 PA&ED HOV & TRUCK LANES – SR-14 TO PARKER ROAD
Traffic Study

07-LA-5, PM R 45.4/R 59.0
EA 2332E0

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October 30, 2007

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I-5 PA&ED HOV & TRUCK LANES – SR-14 TO PARKER ROAD
Traffic Study

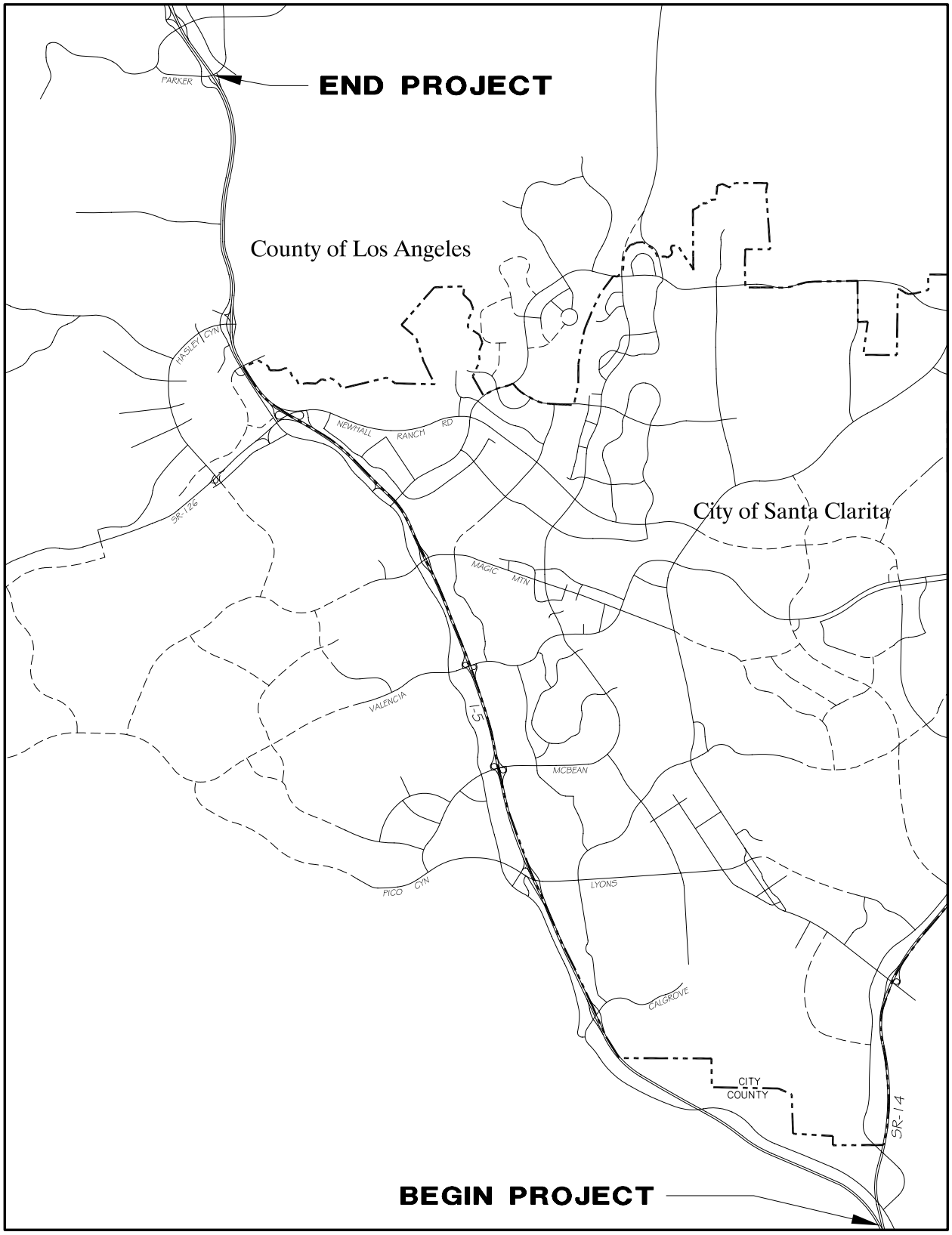
The information presented here comprises a Project Approval and Environmental Document (PA&ED) Traffic Study for the addition of High Occupancy Vehicle (HOV) lanes and Truck lanes for the I-5 freeway in the Santa Clarita Valley (07-LA-5, PM R 45.4/R 59.0, EA 2332E0). The purpose is to provide supporting material for the PA&ED being prepared for this segment of roadway.

1.0 PROJECT DESCRIPTION

The project proposes to add one HOV lane in each direction on I-5 from the State Route 14 (SR-14) interchange at the southern project limit north to Parker Road. The project also proposes to add truck climbing lanes in each direction from the SR-14 interchange to Calgrove Boulevard (northbound) and Pico Canyon Road/Lyons Avenue (southbound). Full auxiliary lanes are proposed between the following interchanges: 1) northbound direction between Valencia Boulevard and Magic Mountain Parkway, 2) southbound direction between Valencia Boulevard and McBean Parkway, and 3) northbound direction between Calgrove Boulevard and Pico Canyon Road/Lyons Avenue.

The project segment of I-5 crosses the City of Santa Clarita, the unincorporated community of Castaic and other parts of unincorporated northern Los Angeles County. This section of I-5 serves interstate travel, travel between Southern and Central/Northern California, as well as local and commuter travel for the Santa Clarita Valley. The project location is illustrated in Figure 1.

The full project is anticipated to be completed around 2014. Additionally, an Early Implementation Project (EIP) consisting of the southbound truck climbing lane between Pico Canyon Road/Lyons Avenue and SR-14 and the extension of the northbound HOV lane from SR-14 to the summit just north of SR-14 is anticipated to start construction around 2009. Subsequently, traffic volume forecasts have been prepared for the following three future horizon years: 2030, which represents the current Regional Transportation Plan (RTP) horizon year and the project design year; 2010, to evaluate opening day conditions for the Early Implementation project; and 2015, to evaluate opening day conditions for the full project. The Highway Capacity Manual (HCM) methodology is utilized to determine Level of Service (LOS) estimates for each horizon year, with and without the proposed project.



Legend

Existing Roadway
Future Roadway

Figure 1

PROJECT LOCATION

2.0 EXISTING CONDITIONS

A summary of existing conditions has been compiled from multiple sources, including published Caltrans data and field surveys by Austin-Foust Associates, Inc. and Korve Engineers. Table 1 summarizes the current lane geometry and grade for the project area.

The I-5 generally consists of four mixed-flow lanes in each direction through the project area, with the exception of through the midpoint of the SR-14 interchange where there are three mixed-flow lanes in each direction. Two truck lanes in each direction pass through the SR-14 interchange area separated from the mainline. Within the project area, this truck bypass route begins/ends just north of the interchange.

The grade through the project area varies from flat to +/- five percent.

A summary of existing (2006) mainline traffic volumes, peak hour by direction and ADT, and the percentage of trucks is provided in Table 2. Traffic count data from multiple sources (as noted in the table) for both the mainline and ramps were used to prepare this comprehensive summary of present day conditions. A detailed listing of mainline and ramp volumes is provided in Appendix A.

Observations of vehicle occupancies were made by Korve Engineers in April 2005 for the segment of I-5 between SR-14 and Calgrove Boulevard. The observations were taken from the Weldon Canyon Road overcrossing during AM and PM time periods, and are summarized in Table 3. The data indicates that average vehicle occupancies for this segment of freeway currently range between 1.3 and 1.4 persons per vehicle. These observations equate to approximately 27 percent of vehicles qualifying to use a HOV (2+ persons/vehicle) lane and just 6 percent of vehicles qualifying to use a 3+ persons/vehicle lane.

LOS for each segment of freeway has been estimated using the HCM methodology for basic freeway segments. A basic freeway segment can be characterized by three performance measures: density in terms of passenger cars per mile per lane, speed in terms of mean passenger-car speed, and volume-to-capacity (v/c) ratio. Each of these measures is an indication of how well traffic flow is being accommodated by the freeway.

Table 1: Existing (2006) Lanes and Grade

I-5 Segment	Southbound		Northbound	
	Lanes	**Grade**	**Lanes**	**Grade**
Between Lake Hughes Road & Parker Road PM 59.49 – 59.01	4 MF	Flat	4 MF	Flat
Between Parker Road & Hasley Canyon Road PM 59.01 – 56.6	4 MF	-1.0%	4 MF	1.0%
Between Hasley Canyon Road & SR-126 PM 56.6 – 55.48	4 MF	Flat	4 MF	Flat
Between SR-126 & Rye Canyon Road PM 55.48 – 54.16	4 MF	Flat	4 MF	Flat
Between Rye Canyon Road & Magic Mountain Parkway PM 54.16 – 53.57	4 MF	Flat	4 MF	Flat
Between Magic Mountain Parkway & Valencia Boulevard PM 53.57 – 52.47	4 MF	2.8%	4 MF	-2.8%
Between Valencia Boulevard & McBean Parkway PM 52.47 – 51.44	4 MF	3.7%	4 MF	-3.7%
Between McBean Parkway & Lyons Avenue/Pico Canyon Road PM 51.44 – 50.33	4 MF	-2.5%	4 MF	2.5%
Between Lyons Avenue/Pico Canyon Road & Calgrove Boulevard PM 50.33 – 49.03	4 MF	Flat	4 MF	Flat
Between Calgrove Boulevard & SR-14 PM 49.03 – 45.58	4 MF	5.1%	4 MF	-5.1%
Through the SR-14 Interchange PM 45.58	3[1] MF + 2 T[2]	-4.5%	3 MF + 2 T[2]	4.5%

[1]4th Southbound Mixed-Flow lane becomes a trap lane to the Northbound SR-14 Connector.
[2]Truck bypass route rejoins the mainline south of the SR-14 interchange.

MF = Mixed-Flow Lane
T = Truck Lane
HOV = HOV Lane

Table 2: Existing (2006) Traffic Volumes

I-5 Segment	% Trucks (Daily)	AM Peak Hour		PM Peak Hour		ADT
		SB	NB	SB	NB	
North of Parker Road	26.6%	1,600	1,190	2,040	2,250	65,000
Between Parker Road & Hasley Canyon Road	20.8%	2,210	1,570	2,420	2,790	83,000
Between Hasley Canyon Road & SR-126	17.3%	3,110	2,170	3,010	3,620	100,000
Between SR-126 & Rye Canyon Road	15.3%	3,420	3,340	4,150	4,080	124,000
Between Rye Canyon Road & Magic Mountain Parkway	14.2%	4,200	3,340	5,350	4,080	134,000
Between Magic Mountain Parkway & Valencia Boulevard	12.2%	4,490	4,490	5,600	5,270	156,000
Between Valencia Boulevard & McBean Parkway	10.6%	5,310	5,430	6,420	6,050	179,000
Between McBean Parkway & Lyons Avenue/Pico Canyon Road	10.1%	5,730	5,560	6,450	6,610	189,000
Between Lyons Avenue/Pico Canyon Road & Calgrove Blvd.	9.5%	6,320	5,620	6,460	7,020	199,000
Between Calgrove Boulevard & SR-14	9.4%[1]	6,610	5,600	6,410	6,970	202,000
South of SR-14	8.6%	13,270	7,390	9,180	13,710	325,000

[1] Peak Hour Truck Percentages (2005 Survey): AM NB = 7.0%; AM SB = 8.2%; PM NB = 6.5%; PM SB = 6.7%

Sources: Korve Engineering, Mainline Counts (Peak Hour), April 2005
Austin-Foust Associates, Inc., Ramp Counts (Peak Hour), 2004-2006
Korve Engineering, Mainline Truck Counts (Peak Hour), April 2005
Caltrans, Mainline AADT, 2005
Caltrans, Ramp Volumes ADT, 2005
Caltrans, AADT Daily Truck Traffic, 2004
Caltrans, Count Station Data (Hourly), 2003

Table 3: Average Vehicle Occupancy Survey

Location	Time	Direction	People per Vehicle			Average Vehicle Occupancy
			1	2	3+	
I-5 at Weldon Canyon Rd.	9:30-9:45 am	NB	378	139	58	1.44
I-5 at Weldon Canyon Rd.	9:30-9:45 am	SB	279	67	12	1.25
I-5 at Weldon Canyon Rd.	3:15-3:30 pm	SB	271	91	15	1.32
I-5 at Weldon Canyon Rd.	6:30-6:45 pm	NB	511	127	31	1.28
Total Vehicles			1,439	424	116	1.33
National Average – To or From Work						*1.14*
National Average – Social and Recreational						*2.03*
National Average – All Purposes						*1.63*

Percentage of observed vehicles that qualify to use a *2 or more persons per vehicle* carpool lane: 27%

Percentage of observed vehicles that qualify to use a *3 or more persons per vehicle* carpool lane: 6%

Sources: Korve Engineering, Mainline Vehicle Occupancy Surveys for I-5 at Weldon Canyon Road, April 2005
U.S. DOT/FHWA, *2001 National Household Travel Survey*, December 2004

The measure used to provide an estimate of LOS is density. The three measures of speed, density and flow or volume are interrelated. LOS thresholds for a basic freeway segment are summarized in Table 4.

Table 4: LOS Thresholds for a Basic Freeway Segment

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	>11 – 18
C	>18 – 26
D	>26 – 35
E	>35 - 45
F	>45
Source: HCM 2000	

As stated in the HCM, the upper value shown for LOS E (45 pc/mi/ln) is the maximum density at which sustained flows at capacity are expected to occur. Failure, breakdown, congestion, and LOS F occur when queues begin to form on the freeway. Density tends to increase sharply within the queue and may be considerably higher than the maximum value of 45 pc/mi/ln for LOS E.

When demand conditions exceed capacity, forced flow results and the formulas used for estimating density and average speed are no longer applicable. As such, estimates for density and average speed are not provided for LOS F conditions due to this limitation of the HCM methodology.

A summary of the HCS operational analysis for existing conditions is provided in Table 5. HCS worksheets are provided in Appendix C for the EIP segments and in Appendix D for the remaining segments.

Observations of the four lane southbound segment of I-5 between Pico Canyon Road/Lyons Avenue and the start of the truck bypass route at SR-14 indicate that the outside lane is used exclusively by trucks. Because of this, the segment has been evaluated by two methods to determine an approach that best reflects the observed conditions. First, the segment was evaluated in the traditional manner as a four lane segment with the measured percentage of trucks. This method calculates LOS D for most time periods except south of Calgrove during the AM peak hour, which is indicated as LOS E. Second, the segment was evaluated as a three lane segment with the fourth lane serving as a truck climbing lane for approximately 80 percent of the trucks. This method indicates LOS E for each peak hour time period for the segment between Pico Canyon Road/Lyons Avenue and Calgrove Boulevard, and LOS F between Calgrove Boulevard and SR-14. This second method has been determined to be more consistent with the observed conditions.

Table 5: LOS Summary - Existing Conditions

I-5 Segment	AM Peak Hour			PM Peak Hour		
	Speed	Density	LOS	Speed	Density	LOS
Northbound						
Lake Hughes to Parker	70.0	5.2	A	70.0	9.9	A
Parker to Hasley Canyon	70.0	6.7	A	70.0	11.9	B
Hasley Canyon to SR-126	70.0	13.1	B	70.0	17.2	B
SR-126 to Rye Canyon	70.0	13.9	B	70.0	17.0	B
Rye Canyon to Magic Mountain	70.0	13.9	B	70.0	16.9	B
Magic Mountain to Valencia	70.0	18.4	C	68.5	25.4	C
Valencia to McBean	69.6	22.3	C	68.5	25.3	C
McBean to Pico	69.1	24.0	C	65.4	30.2	D
Pico to Calgrove	69.4	23.1	C	64.9	30.8	D
Calgrove to Truck Route Bypass	69.5	22.9	C	65.3	30.3	D
Truck Route Bypass to SR-14 Ramp (On)	69.9	20.5	C	63.3	32.8	D
SR-14 Ramp (On) to SR-14 Ramp (Off)	70.0	18.3	C	68.0	26.2	D
Southbound						
Lake Hughes to Parker	70.0	7.0	A	70.0	8.9	A
Parker to Hasley Canyon	70.0	9.5	A	70.0	10.4	A
Hasley Canyon to SR-126	70.0	9.1	A	70.0	12.7	B
SR-126 to Rye Canyon	70.0	14.2	B	70.0	17.3	B
Rye Canyon to Magic Mountain	70.0	17.4	B	69.6	22.3	C
Magic Mountain to Valencia	70.0	19.5	C	68.8	24.7	C
Valencia to McBean	69.1	24.1	C	64.7	31.1	D
McBean to Pico	69.3	23.6	C	67.4	27.2	D
Pico to Calgrove	61.1	35.5	E	58.6	38.3	E
Calgrove to Truck Route Bypass	<53.3	>45.0	F	<53.3	>45.0	F
Truck Route Bypass to SR-14 Ramp (On)	70.0	19.3	C	70.0	19.6	C
SR-14 Ramp (On) to Balboa	70.0	24.7	C	69.3	23.4	C

3.0 PROJECT ANALYSIS - 2030 CONDITIONS

The Santa Clarita Valley is a rapidly growing portion of the Southern California area. Southern California Regional Government (SCAG) projections for the Santa Clarita Valley are summarized in Table 6. The table shows that population is expected to increase by 103 percent and employment is expected to increase by 78 percent over the 28 year period between 1997 and 2025.

The rapid growth noted above for the Santa Clarita Valley is due to significant amounts of ongoing new land use development that is anticipated to continue to occur as the valley builds out over the next 25 years. Table 7 summarizes land use and vehicle trip generation statistics for 2004 and buildout conditions. The table shows that Average Daily Traffic (ADT) generation within the Santa Clarita Valley is forecast to increase by 99 percent between present day and valley wide buildout.

Table 6: Demographic Projections – Santa Clarita Valley

Demographic	1997	2025	Total Growth 1997-2025	Percent Growth 1997-2025
Santa Clarita Population	175,529	356,861	181,332	103%
Santa Clarita Employment	58,029	103,250	45,221	78%

Source: SCAG Regional Forecasts, 2001

Table 7: Land Use and Trip Generation Projections - Santa Clarita Valley

		2004		Long-Range Cumulative (Buildout)	
Land Use Type	**Units**	**Amount**	**ADT**	**Amount**	**ADT**
Single Family Residential	DU	51,300	501,000	92,000	903,000
Multi-Family Residential	DU	25,600	203,000	54,800	423,000
Commercial, Retail, Office & Industrial	MSF	31.8	696,000	81.9	1,539,000
Other	-	-	170,000	-	256,000
Total	-	-	1,570,000	-	3,121,000 (+99%)

DU = Dwelling Unit
MSF = Million Square Feet
ADT = Average Daily Traffic

Source: Santa Clarita Valley Consolidated Traffic Model (SCVCTM) Version 4.1

Future year traffic forecasts have been obtained from the Santa Clarita Valley Consolidated Traffic Model (SCVCTM). The SCVCTM was developed jointly by the County of Los Angeles Department of Public Works and the City of Santa Clarita and is the primary tool used by both agencies for transportation planning in this area. The model has the ability to provide traffic volume forecasts for multiple future year scenarios, including long-range cumulative (buildout) conditions for the Santa Clarita Valley.

In addition to forecasting the theoretical buildout traffic demand, a special version of the SCVCTM has been prepared to reflect the actual flow of traffic volumes south of the I-5/SR-14 confluence, which is constrained by the available (existing and planned) capacity for that heavily traveled section of freeway. The purpose of this constrained flow model is to provide a realistic peak hour volume for the freeway segments north of the I-5/SR-14 confluence by taking into account the geometric constraints that will determine the flow rates south of the interchange.

A summary of 2030 (buildout) traffic volumes derived by the constrained flow model, for peak hour by direction and for ADT, is provided in Table 8. The corresponding peak period volumes for constrained flow conditions are provided in Table 9. An illustration of the peak hour mainline and ramp volumes is provided in Figure 2.

Table 10 summarizes the peak hour and for ADT volumes for the unconstrained condition and Table 11 summarizes the comparable peak period forecasts. An illustration of the peak hour mainline and ramp volumes is provided in Figure 3. As noted above, the unconstrained volumes represent a theoretical demand for the facility, not taking into account the actual capacity available south of the I-5/SR-14 confluence. A comparison of the two sets of forecasts indicates that the total daily volume of traffic south of the I-5/SR-14 confluence is similar for each scenario. Where differences occur is in the peak hours, which are most affected by the constraint. In practice, this reflects an adjustment to travel habits such as driving in the off-peak hours or using transit as an alternative to driving in the peak hour.

For this analysis, no differentiation is made between build and no-build traffic volume forecasts since the I-5 freeway is the only viable option for north-south travel in and out of the Santa Clarita Valley. This is due to the lack of parallel facilities other than The Old Road, which itself has limited capacity for other than local traffic. Also, this approach more accurately demonstrates the true impact to the I-5 corridor for a no-build scenario since it does not presume that freeway traffic will utilize local roadways as a bypass, which can result in understating the need for capacity enhancements.

Table 8: Year 2030 (Santa Clarita Valley Buildout) Peak Hour Traffic Volumes – Constrained Flow Model

I-5 Segment	AM Peak Hour		PM Peak Hour		ADT
	SB	NB	SB	NB	
North of Parker Road	5,200	4,100	6,500	6,800	207,000
Between Parker Road & Hasley Canyon Road	6,700	4,900	7,600	8,200	240,000
Between Hasley Canyon Road & SR-126	7,200	6,500	9,100	8,700	251,000
Between SR-126 & Rye Canyon Road	7,000	6,900	9,200	7,700	234,000
Between Rye Canyon Road & Magic Mountain Parkway	7,200	6,900	10,100	7,700	255,000
Between Magic Mountain Pkwy & Valencia Boulevard	7,300	7,100	9,800	7,900	263,000
Between Valencia Boulevard & McBean Parkway	8,100	7,600	10,000	8,300	268,000
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	7,800	7,500	9,600	8,400	283,000
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	7,300	7,000	8,900	8,400	281,000
Between Calgrove Boulevard & SR-14	7,400	6,400	8,800	8,200	290,000
South of SR-14	17,700	9,200	11,500	16,700	617,000

Source: SCVCTM Ver. 4.1 Year 2030 Constrained Flow Scenario with Centennial (12/27/06)

Table 9: Year 2030 (Santa Clarita Valley Buildout) Peak Period Traffic Volumes – Constrained Flow Model

I-5 Segment	AM Peak Period		PM Peak Period		ADT
	SB	NB	SB	NB	
North of Parker Road	15,300	11,400	24,100	26,200	207,000
Between Parker Road & Hasley Canyon Road	19,700	13,600	28,100	31,500	240,000
Between Hasley Canyon Road & SR-126	21,200	18,300	32,500	32,800	251,000
Between SR-126 & Rye Canyon Road	20,600	19,700	31,700	28,500	234,000
Between Rye Canyon Road & Magic Mountain Parkway	21,200	19,700	34,800	28,500	255,000
Between Magic Mountain Pkwy & Valencia Boulevard	21,500	20,300	33,800	29,300	263,000
Between Valencia Boulevard & McBean Parkway	23,800	22,000	35,100	31,300	268,000
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	22,900	22,100	34,300	32,300	283,000
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	21,500	20,600	31,800	32,300	281,000
Between Calgrove Boulevard & SR-14	21,800	18,800	31,400	31,500	290,000
South of SR-14	53,100	27,600	44,200	66,800	617,000

AM Peak Period = 6 am – 9 am
PM Peak Period = 3 pm – 7 pm

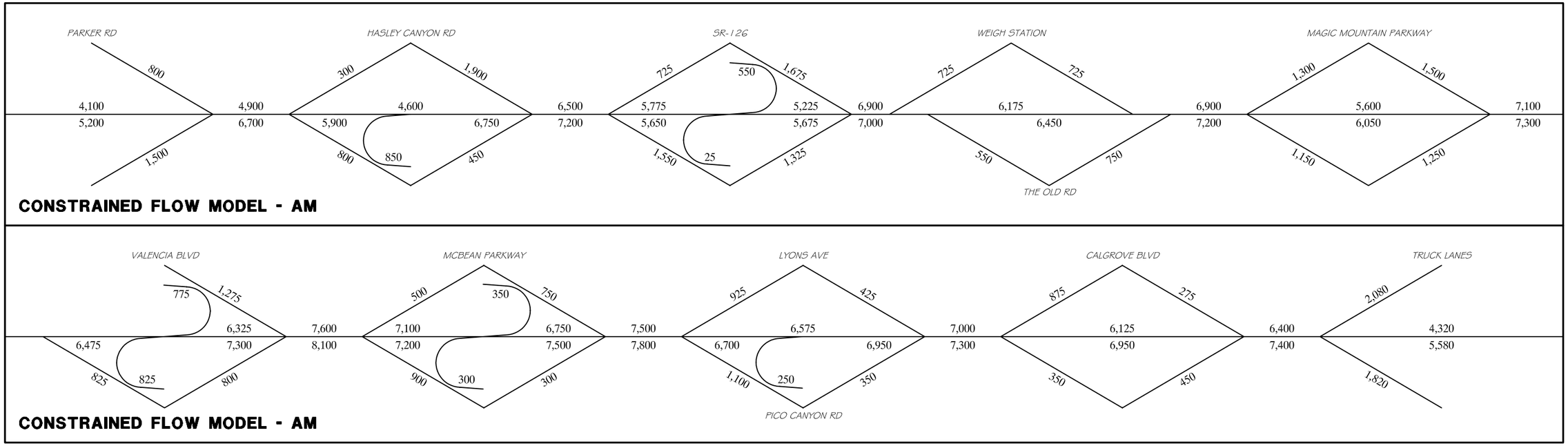


Figure 2

PEAK HOUR VOLUMES
- CONSTRAINED FLOW MODEL

Table 10: Year 2030 (Santa Clarita Valley Buildout) Peak Hour Traffic Volumes – Demand Model

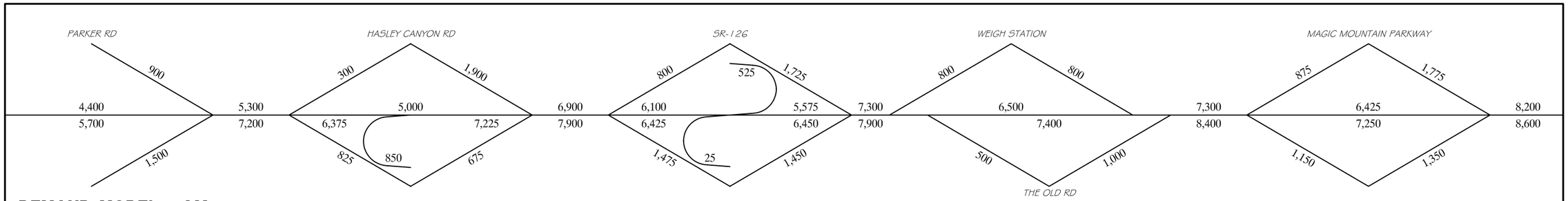
I-5 Segment	AM Peak Hour		PM Peak Hour		ADT
	SB	NB	SB	NB	
North of Parker Road	5,700	4,400	7,200	7,600	207,000
Between Parker Road & Hasley Canyon Road	7,200	5,300	8,300	9,100	241,000
Between Hasley Canyon Road & SR-126	7,900	6,900	9,800	9,600	254,000
Between SR-126 & Rye Canyon Road	7,900	7,300	10,300	8,900	242,000
Between Rye Canyon Road & Magic Mountain Parkway	8,400	7,300	12,100	8,900	273,000
Between Magic Mountain Pkwy & Valencia Boulevard	8,600	8,200	12,100	9,500	294,000
Between Valencia Boulevard & McBean Parkway	9,600	9,100	13,000	10,300	312,000
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	9,500	9,500	12,300	10,500	322,000
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	9,500	9,400	11,900	10,900	324,000
Between Calgrove Boulevard & SR-14	9,600	8,900	11,700	11,000	322,000
South of SR-14	23,000	12,300	15,500	22,300	628,000

Source: SCVCTM Ver. 4.1 Long-Range Cumulative Scenario with Centennial (11/3/06)

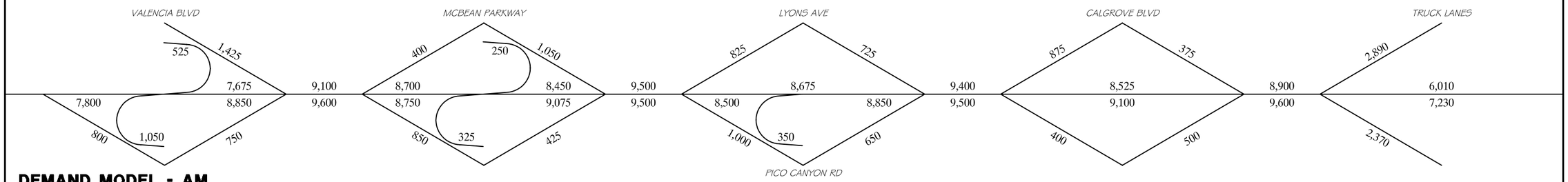
Table 11: Year 2030 (Santa Clarita Valley Buildout) Peak Period Traffic Volumes – Demand Model

I-5 Segment	AM Peak Period		PM Peak Period		ADT
	SB	NB	SB	NB	
North of Parker Road	15,400	11,600	25,700	27,100	207,000
Between Parker Road & Hasley Canyon Road	19,500	13,900	29,600	32,500	241,000
Between Hasley Canyon Road & SR-126	20,800	18,200	33,800	33,700	254,000
Between SR-126 & Rye Canyon Road	20,300	19,200	34,300	30,700	242,000
Between Rye Canyon Road & Magic Mountain Parkway	21,500	19,200	40,300	30,700	273,000
Between Magic Mountain Pkwy & Valencia Boulevard	22,100	21,600	40,300	32,800	294,000
Between Valencia Boulevard & McBean Parkway	24,900	23,900	44,100	36,100	312,000
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	25,000	25,000	42,400	37,500	322,000
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	25,000	24,700	41,000	38,900	324,000
Between Calgrove Boulevard & SR-14	25,300	23,400	40,300	39,300	322,000
South of SR-14	62,200	34,200	55,400	82,600	628,000

AM Peak Period = 6 am – 9 am
PM Peak Period = 3 pm – 7 pm



DEMAND MODEL - AM



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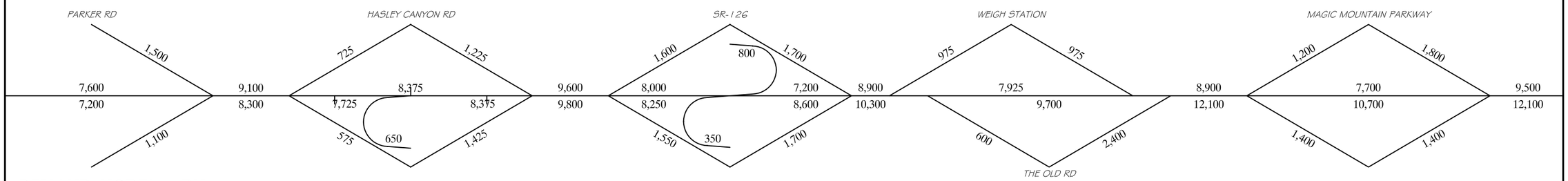

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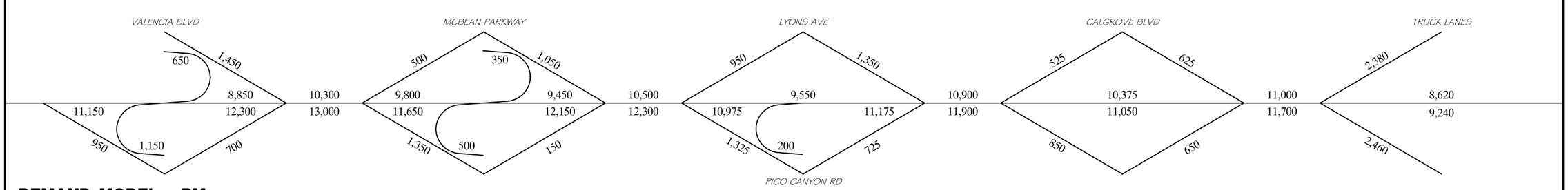

DEMAND MODEL - PM

Figure 3

PEAK HOUR VOLUMES
- DEMAND MODEL

A summary of the HCS operational analysis for 2030 conditions is provided in Table 12 for the no-build scenario and in Table 13 inclusive of the proposed project. Based on this analysis, without the proposed project the I-5 freeway is forecast to operate primarily at LOS E and LOS F during the PM peak hour. During the AM peak hour, LOS is forecast to primarily range between LOS D and F, depending on segment. With the proposed project the maximum forecast LOS is E, which is indicated for three southbound segments during the PM peak hour. The remaining segments are forecast as primarily LOS C or D. HCS worksheets are provided in Appendix D. This analysis is based on allowing use of the HOV lanes for vehicles with occupancies of 2 or more persons. A limitation of a 3 or more persons per vehicle occupancy is discussed in Section 7.0.

A summary of the HCS operational analysis for 2030 unconstrained (i.e., demand) conditions is provided in Table 14 for the no-build scenario and in Table 15 inclusive of the proposed project. Based on this analysis, without the proposed project the I-5 freeway is forecast to operate primarily at LOS F during the PM peak hour. During the AM peak hour, the LOS is forecast to primarily range between LOS E and F in the southbound direction and between LOS D and F in the northbound direction. With the proposed project, LOS F is forecast during the PM peak hour between Rye Canyon Road and the truck bypass route for the southbound direction and between McBean Parkway and Calgrove Boulevard in the northbound direction. LOS F is also forecast for several of the HOV lanes. For the remaining segments during the PM peak hour, the LOS is forecast to range between LOS D and E. During the AM peak hour, the LOS is forecast to primarily range between LOS C and E. HCS worksheets are provided in Appendix D. As noted above, this analysis is based on allowing use of the HOV lanes for vehicles with occupancies of 2 or more persons. A limitation of a 3 or more persons per vehicle occupancy is discussed in Section 7.0.

Table 12: LOS Summary – 2030 No-Build Conditions (Constrained Flow Model)

I-5 Segment	AM Peak Hour			PM Peak Hour		
	Speed	Density	LOS	Speed	Density	LOS
Northbound						
Lake Hughes to Parker	70.0	17.1	B	65.2	30.4	D
Parker to Hasley Canyon	70.0	20.1	C	54.9	42.9	E
Hasley Canyon to SR-126	67.1	27.7	D	<53.3	>45.0	F
SR-126 to Rye Canyon	65.3	30.2	D	60.0	36.7	E
Rye Canyon to Magic Mountain	65.3	30.2	D	60.0	36.7	E
Magic Mountain to Valencia	64.2	31.6	D	58.3	38.8	E
Valencia to McBean	60.8	35.8	E	54.3	43.8	E
McBean to Pico	59.0	37.9	E	<53.3	>45.0	F
Pico to Calgrove	65.0	30.7	D	53.6	44.6	E
Calgrove to Truck Route Bypass	67.7	26.8	D	56.1	41.4	E
Truck Route Bypass to SR-14 Ramp (On)	69.6	22.5	C	56.2	41.3	E
SR-14 Ramp (On) to SR-14 Ramp (Off)	69.8	21.4	C	63.9	32.0	D
Southbound						
Lake Hughes to Parker	69.8	21.7	C	66.6	28.5	D
Parker to Hasley Canyon	66.1	29.1	D	60.5	36.1	E
Hasley Canyon to SR-126	63.6	32.4	D	<53.3	>45.0	F
SR-126 to Rye Canyon	64.8	30.9	D	<53.3	>45.0	F
Rye Canyon to Magic Mountain	63.6	32.4	D	<53.3	>45.0	F
Magic Mountain to Valencia	60.2	36.5	E	<53.3	>45.0	F
Valencia to McBean	<53.3	>45.0	F	<53.3	>45.0	F
McBean to Pico	59.5	37.4	E	<53.3	>45.0	F
Pico to Calgrove	<53.3	>45.0	F	<53.3	>45.0	F
Calgrove to Truck Route Bypass	<53.3	>45.0	F	<53.3	>45.0	F
Truck Route Bypass to SR-14 Ramp (On)	69.8	21.7	C	66.8	28.3	D
SR-14 Ramp (On) to Balboa	66.5	28.6	D	59.3	37.6	E

Table 13: LOS Summary – 2030 Build Conditions (Constrained Flow Model)

	Mixed Flow Lanes						*HOV Lane*				*Truck Lane(s)*			
	AM Peak Hour			**PM Peak Hour**			**AM Peak Hour**		**PM Peak Hour**		**AM Peak Hour**		**PM Peak Hour**	
I-5 Segment	**Speed**	**Density**	**LOS**	**Speed**	**Density**	**LOS**	**D/C**	**LOS**	**D/C**	**LOS**	**D/C**	**LOS**	**D/C**	**LOS**
Northbound														
Lake Hughes to Parker	70.0	17.1	B	65.2	30.4	D	--	--	--	--	--	--	--	--
Parker to Hasley Canyon	70.0	16.1	B	66.4	28.7	D	.49	A	.79	C	--	--	--	--
Hasley Canyon to SR-126	69.0	24.3	C	64.0	31.9	D	.61	A	.79	C	--	--	--	--
SR-126 to Rye Canyon	69.3	23.5	C	68.2	25.8	C	.61	A	.77	C	--	--	--	--
Rye Canyon to Magic Mtn	69.3	23.5	C	68.2	25.8	C	.61	A	.77	C	--	--	--	--
Magic Mtn to Valencia	69.3	23.5	C	67.8	26.7	D	.71	C	.79	C	--	--	--	--
Valencia to McBean	68.2	25.9	C	66.2	29.0	D	.71	C	.79	C	--	--	--	--
McBean to Pico	67.7	26.8	D	63.6	32.4	D	.71	C	.75	C	--	--	--	--
Pico to Calgrove	69.2	23.6	C	65.4	30.1	D	.63	B	.75	C	--	--	--	--
Calgrove to Truck Rte Bypass	70.0	18.6	C	69.0	24.2	C	.60	A	.76	C	.38	A	.48	A
Truck Route Bypass to SR-14 Ramp (On)	70.0	16.2	B	68.2	26.0	D	.60	A	.76	C	--	--	--	--
SR-14 Ramp (On) to SR-14 Ramp (Off)	70.0	14.9	B	69.8	21.5	C	.60	A	.76	C	--	--	--	--
Southbound														
Lake Hughes to Parker	69.8	21.7	C	66.6	28.5	D	--	--	--	--	--	--	--	--
Parker to Hasley Canyon	69.7	22.1	C	68.4	25.6	C	.67	B	.76	C	--	--	--	--
Hasley Canyon to SR-126	69.8	21.7	C	63.1	33.0	D	.67	B	.91	E	--	--	--	--
SR-126 to Rye Canyon	69.3	23.4	C	62.6	33.7	D	.67	B	.92	E	--	--	--	--
Rye Canyon to Magic Mtn	69.0	24.3	C	56.2	41.4	E	.67	B	.99	E	--	--	--	--
Magic Mtn to Valencia	67.9	26.4	D	54.8	43.1	E	.67	B	.98	E	--	--	--	--
Valencia to McBean	68.8	24.6	C	64.6	31.2	D	.67	B	.98	E	--	--	--	--
McBean to Pico	67.3	27.4	D	60.4	36.2	E	.67	B	.96	E	--	--	--	--
Pico to Calgrove	69.8	21.3	C	67.7	26.7	D	.68	B	.83	D	.44	A	.53	A
Calgrove to Truck Route Bypass (1 Truck Lane)	69.2	23.7	C	65.7	29.7	D	.67	B	.80	C	.58	A	.69	B
Calgrove to Truck Route Bypass (2 Truck Lanes)	69.9	20.8	C	68.5	25.3	C	.67	B	.80	C	.29	A	.35	A
Truck Route Bypass to SR-14 Ramp (On)	70.0	16.4	B	69.9	20.8	C	.67	B	.80	C	--	--	--	--
SR-14 Ramp (On) to Balboa	69.9	20.3	C	69.1	23.9	C	.67	B	.80	C	--	--	--	--
D/C calculations based on LOS E/F threshold of 2,000 veh/hr (HOV Lanes) and 1,200 veh/hr (Truck Lanes).														

Table 14: No-Build Conditions (Demand Model)

I-5 Segment	AM Peak Hour			PM Peak Hour		
	Speed	Density	LOS	Speed	Density	LOS
Northbound						
Lake Hughes to Parker	70.0	18.3	C	59.6	37.2	E
Parker to Hasley Canyon	69.7	22.0	C	<53.3	>45.0	F
Hasley Canyon to SR-126	65.3	30.2	D	<53.3	>45.0	F
SR-126 to Rye Canyon	63.0	33.2	D	<53.3	>45.0	F
Rye Canyon to Magic Mountain	63.0	33.2	D	<53.3	>45.0	F
Magic Mountain to Valencia	55.7	41.9	E	<53.3	>45.0	F
Valencia to McBean	<53.3	>45.0	F	<53.3	>45.0	F
McBean to Pico	<53.3	>45.0	F	<53.3	>45.0	F
Pico to Calgrove	<53.3	>45.0	F	<53.3	>45.0	F
Calgrove to Truck Route Bypass	<53.3	>45.0	F	<53.3	>45.0	F
Truck Route Bypass to SR-14 Ramp (On)	60.8	35.7	E	<53.3	>45.0	F
SR-14 Ramp (On) to SR-14 Ramp (Off)	65.2	30.4	D	<53.3	>45.0	F
Southbound						
Lake Hughes to Parker	69.1	24.1	C	62.7	33.5	D
Parker to Hasley Canyon	63.2	32.9	D	53.4	44.9	E
Hasley Canyon to SR-126	58.3	38.8	E	<53.3	>45.0	F
SR-126 to Rye Canyon	58.3	38.8	E	<53.3	>45.0	F
Rye Canyon to Magic Mountain	<53.3	>45.0	F	<53.3	>45.0	F
Magic Mountain to Valencia	<53.3	>45.0	F	<53.3	>45.0	F
Valencia to McBean	<53.3	>45.0	F	<53.3	>45.0	F
McBean to Pico	<53.3	>45.0	F	<53.3	>45.0	F
Pico to Calgrove	<53.3	>45.0	F	<53.3	>45.0	F
Calgrove to Truck Route Bypass	<53.3	>45.0	F	<53.3	>45.0	F
Truck Route Bypass to SR-14 Ramp (On)	65.6	29.9	D	<53.3	>45.0	F
SR-14 Ramp (On) to Balboa	<53.3	>45.0	F	<53.3	>45.0	F

Table 15: LOS Summary – 2030 Build Conditions (Demand Model)

	Mixed Flow Lanes						*HOV Lane*				*Truck Lane(s)*			
	AM Peak Hour			**PM Peak Hour**			**AM Peak Hour**		**PM Peak Hour**		**AM Peak Hour**		**PM Peak Hour**	
I-5 Segment	**Speed**	**Density**	**LOS**	**Speed**	**Density**	**LOS**	**D/C**	**LOS**	**D/C**	**LOS**	**D/C**	**LOS**	**D/C**	**LOS**
Northbound														
Lake Hughes to Parker	70.0	18.3	C	59.6	37.2	E	--	--	--	--	--	--	--	--
Parker to Hasley Canyon	70.0	17.5	B	62.4	33.9	D	.53	A	.89	D	--	--	--	--
Hasley Canyon to SR-126	69.5	22.7	C	64.1	31.8	D	.69	B	.89	D	--	--	--	--
SR-126 to Rye Canyon	68.8	24.6	C	64.1	31.8	D	.69	B	.89	D	--	--	--	--
Rye Canyon to Magic Mtn	68.8	24.6	C	64.1	31.8	D	.69	B	.89	D	--	--	--	--
Magic Mtn to Valencia	67.0	27.9	D	61.1	35.4	E	.82	D	.95	E	--	--	--	--
Valencia to McBean	62.1	34.2	D	53.6	44.6	E	.82	D	.95	E	--	--	--	--
McBean to Pico	55.2	42.6	E	<53.3	>45.0	F	.81	D	1.00	E	--	--	--	--
Pico to Calgrove	59.6	37.3	E	<53.3	>45.0	F	.81	C	1.00	E	--	--	--	--
Calgrove to Truck Rte Bypass	67.7	26.8	D	58.9	38.1	E	.83	D	1.02	F	.53	A	.65	B
Truck Route Bypass to SR-14 Ramp (On)	69.5	22.7	C	54.1	44.0	E	.83	D	1.02	F	--	--	--	--
SR-14 Ramp (On) to SR-14 Ramp (Off)	70.0	19.8	C	64.7	31.0	D	.83	D	1.02	F	--	--	--	--
Southbound														
Lake Hughes to Parker	69.1	24.1	C	62.7	33.5	D	--	--	--	--	--	--	--	--
Parker to Hasley Canyon	69.1	24.1	C	66.3	29.0	D	.72	C	.83	D	--	--	--	--
Hasley Canyon to SR-126	67.3	27.5	D	58.8	38.2	E	.72	C	.98	E	--	--	--	--
SR-126 to Rye Canyon	67.3	27.5	D	58.8	38.2	E	.72	C	1.03	F	--	--	--	--
Rye Canyon to Magic Mtn	64.9	30.8	D	<53.3	>45.0	F	.72	C	1.03	F	--	--	--	--
Magic Mtn to Valencia	63.8	32.2	D	<53.3	>45.0	F	.86	D	1.03	F	--	--	--	--
Valencia to McBean	65.5	30.0	D	<53.3	>45.0	F	.86	D	1.06	F	--	--	--	--
McBean to Pico	59.6	37.2	E	<53.3	>45.0	F	.86	D	1.06	F	--	--	--	--
Pico to Calgrove	66.0	29.3	D	<53.3	>45.0	F	.88	D	1.09	F	.57	A	.72	C
Calgrove to Truck Route Bypass (1 Truck Lane)	61.9	34.5	D	<53.3	>45.0	F	.86	D	1.06	F	.75	C	.92	E
Calgrove to Truck Route Bypass (2 Truck Lanes)	66.6	28.4	D	57.0	40.4	E	.86	D	1.06	F	.38	A	.46	A
Truck Route Bypass to SR-14 Ramp (On)	69.8	21.4	C	66.1	29.2	D	.86	D	1.06	F	--	--	--	--
SR-14 Ramp (On) to Balboa	67.4	27.3	D	60.2	36.5	E	.86	D	1.06	F	--	--	--	--
D/C calculations based on LOS E/F threshold of 2,000 veh/hr (HOV Lanes) and 1,200 veh/hr (Truck Lanes).														

4.0 EARLY IMPLEMENTATION PROJECTS ANALYSIS – 2010 CONDITIONS

Mainline freeway traffic volume forecasts for year 2010 conditions are summarized in Table 16 for the peak hour and ADT. Table 17 summaries the comparable peak period volumes. These forecasts are utilized to evaluate opening day conditions for the EIPs, which are expected to be completed around 2009 or 2010.

Truck Climbing Lane

A truck climbing lane is proposed to be added to the existing four lane southbound facility. Two segments have been analyzed: 1) between Pico Canyon Road/Lyons Avenue and Calgrove Boulevard and 2) between Calgrove Boulevard and SR-14.

A detailed evaluation of the EIP truck climbing lane was prepared in June 2007 by DMJM Harris (see Appendix C.) As with the project analysis discussed in previous sections, an HCM LOS analysis was used to compare the impacts of the study scenarios. The approach of the analysis was to assume that one lane was not usable by passenger cars because of slow moving trucks (see discussion in Section 2.0). The analysis was done by subtracting 80% of the trucks from the volume and subtracting one lane, which results in a three lane freeway segment analysis with two percent trucks. As noted previously, the analysis based on this methodology has been determined to be the most representative of the observed existing conditions.

The results of the analysis of adding the truck lane to southbound I-5 is provided in Table 18. The addition of a truck lane is forecast to improve the peak hour operating conditions in 2010 from LOS E and F to LOS C and D. The single truck lane is expected to operate at an acceptable LOS based on an anticipated truck flow rate of approximately 410 trucks per hour.

Table 16: Year 2010 – Early Implementation Project Opening Day Peak Hour Forecasts

I-5 Segment	AM Peak Hour		PM Peak Hour		ADT
	SB	NB	SB	NB	
North of Parker Road	2,400	1,900	3,000	3,400	100,000
Between Parker Road & Hasley Canyon Road	3,400	2,300	3,500	4,400	122,000
Between Hasley Canyon Road & SR-126	4,200	3,400	4,600	5,000	138,000
Between SR-126 & Rye Canyon Road	4,100	4,400	5,400	4,900	146,000
Between Rye Canyon Road & Magic Mountain Parkway	4,600	4,400	6,600	4,900	160,000
Between Magic Mountain Pkwy & Valencia Boulevard	4,800	5,300	6,500	5,700	176,000
Between Valencia Boulevard & McBean Parkway	5,600	6,100	7,100	6,400	194,000
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	5,800	6,200	7,100	6,800	204,000
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	6,400	6,000	6,800	7,100	206,000
Between Calgrove Boulevard & SR-14	6,600	5,800	6,800	7,100	214,000
South of SR-14	13,800	7,700	9,500	13,900	394,000

Source: SCVCTM Ver. 4.1

Table 17: Year 2010 – Early Implementation Project Opening Day Peak Period Forecasts

I-5 Segment	AM Peak Period		PM Peak Period		ADT
	SB	NB	SB	NB	
North of Parker Road	6,300	5,000	10,300	11,700	100,000
Between Parker Road & Hasley Canyon Road	8,900	6,100	12,100	15,200	122,000
Between Hasley Canyon Road & SR-126	11,100	8,900	15,900	17,200	138,000
Between SR-126 & Rye Canyon Road	10,800	11,600	18,600	16,900	146,000
Between Rye Canyon Road & Magic Mountain Parkway	12,100	11,600	22,800	16,900	160,000
Between Magic Mountain Pkwy & Valencia Boulevard	12,600	13,900	22,400	19,700	176,000
Between Valencia Boulevard & McBean Parkway	14,700	16,100	24,500	22,100	194,000
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	15,300	16,300	24,500	23,400	204,000
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	16,800	15,800	23,400	24,500	206,000
Between Calgrove Boulevard & SR-14	17,400	15,300	23,400	24,500	214,000
South of SR-14	36,300	20,300	32,800	47,900	394,000

AM Peak Period = 6 am – 9 am
PM Peak Period = 3 pm – 7 pm

Table 18: EIP Southbound Truck Lane Addition LOS Analysis Results

Freeway Section		SB Between Lyons Ave & Calgrove Blvd		SB Between Calgrove Blvd & SR-14	
Peak Hour		**AM**	**PM**	**AM**	**PM**
2006 Existing	LOS	E	E	F	F
	Density (pc/mi/ln)	35.5	38.3	>45.0	>45.0
	Ave pc Speed (mph)	61.1	58.6	<53.3	<53.3
2010 No Improvements	LOS	E	E	F	F
	Density (pc/mi/ln)	36.4	43.3	>45.0	>45.0
	Ave pc Speed (mph)	60.3	54.6	<53.3	<53.3
2010 With Truck Lane	LOS	C	D	D	D
	Density (pc/mi/ln)	23.8	26.1	27.5	29.3
	Ave pc Speed (mph)	69.2	68.1	67.3	66.0

HOV Lane Extension

An extension of the northbound HOV lane is proposed in order to continue the HOV lane currently under construction north to the summit, which is just after the merge point of the existing truck bypass route. Two segments have been analyzed: 1) between the off-ramp to SR-14 northbound and the on-ramp from SR-14 southbound and 2) between on-ramp from SR-14 southbound and the truck bypass route on-ramp.

A detailed evaluation of the EIP HOV lane extension was prepared in June 2007 by DMJM Harris (see Appendix C.) As with the other analyses, an HCM LOS analysis was used to compare the effect of extending the HOV lane. The approach of the analysis was to evaluate the build scenario as a four lane freeway even though the added lane was a HOV lane. Based on the number of vehicles eligible to use the HOV lane (see discussion in Section 2.0), a relatively even lane utilization is anticipated. Also, since this represents the final segment of the northbound HOV lane, HOVs will not be separated from the mixed flow lanes. As such, the segment will operate more like a four lane freeway segment than a three lane freeway with a separate HOV lane.

Table 19 provides the results of the analysis of extending the northbound HOV lane to the summit just past the truck route merge point. The extension of the HOV lane is forecast to improve the peak hour operating conditions of this segment in 2010 from LOS C to LOS B in the AM peak hour and from LOS D to LOS C in the PM peak hour.

Table 19: EIP Northbound HOV Lane Extension LOS Analysis Results

Freeway Section		NB Between Off-Ramp to NB SR-14 & On-Ramp From SR-14 SB		NB Between On-Ramp From SR-14 SB & Truck Route On-Ramp	
Peak Hour		**AM**	**PM**	**AM**	**PM**
2006 Existing	LOS	B	C	C	D
	Density (pc/mi/ln)	17.8	25.4	19.5	30.2
	Ave pc Speed (mph)	70.0	68.5	70.0	65.3
2010 No Improvements	LOS	C	C	C	D
	Density (pc/mi/ln)	18.6	25.9	20.4	30.9
	Ave pc Speed (mph)	70.0	68.2	69.9	64.8
2010 With HOV Lane Extension	LOS	B	C	B	C
	Density (pc/mi/ln)	13.9	18.9	15.3	21.5
	Ave pc Speed (mph)	70.0	70.0	70.0	69.8

5.0 FULL PROJECT OPENING DAY ANALYSIS – 2015 CONDITIONS

Table 20 summarizes the peak hour and ADT traffic volume forecasts for year 2015 conditions and Table 21 summarizes the comparable peak period volumes. These forecasts are utilized to evaluate the full project, which is expected to be completed around 2014 or 2015.

A summary of the HCS operational analysis for 2015 conditions is provided in Table 22 for the no-build scenario and in Table 23 inclusive of the proposed project. Based on this analysis, without the proposed project the I-5 freeway is forecast to operate at LOS F for two southbound segments during the PM peak hour. The remaining segments are forecast to operate primarily between LOS D and E during the PM peak hour. During the AM peak hour, LOS is forecast to primarily range between LOS C and D, with the exception of the southbound segments between Pico Canyon Road/Lyons Avenue and the start of the truck bypass route at SR-14, which are forecast to operate at LOS E. With the proposed project the maximum forecast LOS is D, which is indicated for three southbound segments during the PM peak hour. The remaining segments are forecast as primarily LOS B or C. HCS worksheets are provided in Appendix D.

Table 20: Year 2015 – Full Project Opening Day Peak Hour Forecasts

I-5 Segment	AM Peak Hour		PM Peak Hour		ADT
	SB	NB	SB	NB	
North of Parker Road	3,300	2,700	4,100	4,700	137,000
Between Parker Road & Hasley Canyon Road	4,700	3,100	4,700	6,100	163,000
Between Hasley Canyon Road & SR-126	5,300	4,800	6,400	6,500	179,000
Between SR-126 & Rye Canyon Road	4,900	5,600	6,800	5,800	171,000
Between Rye Canyon Road & Magic Mountain Parkway	5,100	5,600	8,100	5,800	191,000
Between Magic Mountain Pkwy & Valencia Boulevard	5,400	6,200	7,800	6,200	203,000
Between Valencia Boulevard & McBean Parkway	6,100	7,000	8,200	6,800	216,000
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	5,900	6,900	8,000	7,000	226,000
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	6,600	6,500	7,400	7,300	220,000
Between Calgrove Boulevard & SR-14	6,700	6,100	7,400	7,200	229,000
South of SR-14	14,500	8,200	9,900	14,100	471,000

Source: SCVCTM Ver. 4.1

Table 21: Year 2015 – Full Project Opening Day Peak Period Forecasts

I-5 Segment	AM Peak Period		PM Peak Period		ADT
	SB	NB	SB	NB	
North of Parker Road	8,700	7,100	14,100	16,200	137,000
Between Parker Road & Hasley Canyon Road	12,400	8,200	16,200	21,000	163,000
Between Hasley Canyon Road & SR-126	13,900	12,600	22,100	22,400	179,000
Between SR-126 & Rye Canyon Road	12,900	14,700	23,400	20,000	171,000
Between Rye Canyon Road & Magic Mountain Parkway	13,400	14,700	27,900	20,000	191,000
Between Magic Mountain Pkwy & Valencia Boulevard	14,200	16,300	26,900	21,400	203,000
Between Valencia Boulevard & McBean Parkway	16,100	18,400	28,300	23,400	216,000
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	15,500	18,200	27,600	24,100	226,000
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	17,400	17,100	25,500	25,200	220,000
Between Calgrove Boulevard & SR-14	17,600	16,100	25,500	24,800	229,000
South of SR-14	38,200	21,600	34,100	48,600	471,000

AM Peak Period = 6 am – 9 am
PM Peak Period = 3 pm – 7 pm

Table 22: LOS Summary – 2015 No-Build Conditions

I-5 Segment	AM Peak Hour			PM Peak Hour		
	Speed	Density	LOS	Speed	Density	LOS
Northbound						
Lake Hughes to Parker	70.0	11.2	B	70.0	19.6	C
Parker to Hasley Canyon	70.0	12.8	B	68.3	25.8	C
Hasley Canyon to SR-126	70.0	19.7	C	67.0	27.9	D
SR-126 to Rye Canyon	69.4	23.2	C	69.0	24.2	C
Rye Canyon to Magic Mountain	69.4	23.2	C	69.0	24.2	C
Magic Mountain to Valencia	68.0	26.2	D	68.0	26.2	D
Valencia to McBean	64.8	30.9	D	65.8	29.6	D
McBean to Pico	63.6	32.3	D	63.0	33.2	D
Pico to Calgrove	67.2	27.5	D	63.2	32.9	D
Calgrove to Truck Route Bypass	68.6	25.2	C	64.0	31.9	D
Truck Route Bypass to SR-14 Ramp (On)	69.8	21.3	C	69.7	21.9	C
SR-14 Ramp (On) to SR-14 Ramp (Off)	69.9	20.4	C	67.9	26.5	D
Southbound						
Lake Hughes to Parker	70.0	13.7	B	70.0	17.1	B
Parker to Hasley Canyon	70.0	19.4	C	70.0	19.4	C
Hasley Canyon to SR-126	69.7	21.9	C	67.4	27.3	D
SR-126 to Rye Canyon	70.0	20.1	C	65.7	29.8	D
Rye Canyon to Magic Mountain	69.9	21.0	C	56.0	41.6	E
Magic Mountain to Valencia	69.2	23.7	C	54.5	43.5	E
Valencia to McBean	66.4	28.8	D	<53.3	>45.0	F
McBean to Pico	68.9	24.4	C	57.7	39.5	E
Pico to Calgrove	59.6	37.2	E	<53.3	>45.0	F
Calgrove to Truck Route Bypass	<53.3	>45.0	F	<53.3	>45.0	F
Truck Route Bypass to SR-14 Ramp (On)	70.0	19.6	C	62.4	33.8	D
SR-14 Ramp (On) to Balboa	68.6	25.1	C	70.0	20.1	C

Table 23: LOS Summary – 2015 Build Conditions

	Mixed Flow Lanes						*HOV Lane*				*Truck Lane(s)*			
	AM Peak Hour			**PM Peak Hour**			**AM Peak Hour**		**PM Peak Hour**		**AM Peak Hour**		**PM Peak Hour**	
I-5 Segment	**Speed**	**Density**	**LOS**	**Speed**	**Density**	**LOS**	**D/C**	**LOS**	**D/C**	**LOS**	**D/C**	**LOS**	**D/C**	**LOS**
Northbound														
Lake Hughes to Parker	70.0	11.2	B	70.0	19.6	C	--	--	--	--	--	--	--	--
Parker to Hasley Canyon	70.0	10.2	A	69.9	20.4	C	.31	A	.58	A	--	--	--	--
Hasley Canyon to SR-126	70.0	15.8	B	69.7	22.0	C	.48	A	.58	A	--	--	--	--
SR-126 to Rye Canyon	70.0	19.1	C	70.0	19.1	C	.48	A	.58	A	--	--	--	--
Rye Canyon to Magic Mtn	70.0	19.1	C	70.0	19.1	C	.48	A	.58	A	--	--	--	--
Magic Mtn to Valencia	69.9	20.4	C	69.9	20.4	C	.62	B	.62	B	--	--	--	--
Valencia to McBean	69.2	23.8	C	69.6	22.5	C	.62	B	.67	B	--	--	--	--
McBean to Pico	68.9	24.5	C	68.9	24.5	C	.62	B	.67	B	--	--	--	--
Pico to Calgrove	69.7	21.9	C	68.8	24.7	C	.57	A	.67	B	--	--	--	--
Calgrove to Truck Rte Bypass	70.0	17.8	B	69.9	21.0	C	.57	A	.67	B	.36	A	.43	A
Truck Route Bypass to SR-14 Ramp (On)	70.0	15.5	B	70.0	16.7	B	.57	A	.67	B	--	--	--	--
SR-14 Ramp (On) to SR-14 Ramp (Off)	70.0	14.3	B	70.0	18.8	C	.57	A	.67	B	--	--	--	--
Southbound														
Lake Hughes to Parker	70.0	13.7	B	70.0	17.1	B	--	--	--	--	--	--	--	--
Parker to Hasley Canyon	70.0	15.5	B	70.0	15.5	B	.47	A	.47	A	--	--	--	--
Hasley Canyon to SR-126	70.0	17.9	B	69.9	21.1	C	.47	A	.64	B	--	--	--	--
SR-126 to Rye Canyon	70.0	16.3	B	70.0	22.8	C	.47	A	.64	B	--	--	--	--
Rye Canyon to Magic Mtn	70.0	17.1	B	65.6	29.9	D	.47	A	.64	B	--	--	--	--
Magic Mtn to Valencia	70.0	18.8	C	65.5	30.0	D	.54	A	.67	B	--	--	--	--
Valencia to McBean	70.0	17.6	B	68.7	25.0	C	.59	A	.67	B	--	--	--	--
McBean to Pico	70.0	19.2	C	66.6	28.5	D	.59	A	.67	B	--	--	--	--
Pico to Calgrove	70.0	19.2	C	69.8	21.7	C	.61	A	.67	B	.40	A	.44	A
Calgrove to Truck Route Bypass (1 Truck Lane)	69.8	21.3	C	69.2	23.7	C	.61	A	.67	B	.53	A	.58	A
Calgrove to Truck Route Bypass (2 Truck Lanes)	70.0	18.8	C	69.9	20.8	C	.61	A	.67	B	.26	A	.29	A
Truck Route Bypass to SR-14 Ramp (On)	70.0	14.9	B	69.3	23.5	C	.61	A	.67	B	--	--	--	--
SR-14 Ramp (On) to Balboa	70.0	18.3	C	70.0	14.9	B	.61	A	.67	B	--	--	--	--
D/C calculations based on LOS E/F threshold of 2,000 veh/hr (HOV Lanes) and 1,200 veh/hr (Truck Lanes).														

6.0 ACCIDENT RATES

A summary of accident rates for the project area is provided in Table 24 with a comparison to the statewide average. This data, which is for the twelve month period of April 2005 through March 2006, indicates that the study area has a total accident rate lower than the statewide average but a higher rate of fatal accidents than the statewide average.

Table 24: Accident Rate Summary - April 2005 through March 2006

			Segment Accident Rates			Statewide Accident Rates		
PostMile	**Name**	**MVM**	**Fatal Accidents**	**Fatal + Injury**	**Total Accidents**	**Fatal Accidents**	**Fatal + Injury**	**Total Accidents**
Northbound								
R45.500 - R59.299	Jct. Rte 14 to Lake Hughes Rd	381.05	.011	.150	.500	.005	.290	.890
Southbound								
R45.500 - R59.299	Jct. Rte 14 to Lake Hughes Rd	381.05	.008	.230	.660	.005	.290	.890

7.0 3+ OCCUPANCY HOV LANE SCENARIO

The operational analyses discussed in previous sections are based on allowing use of the HOV lanes for vehicles with occupancies of 2 or more persons. A limitation of a 3 or more persons per vehicle occupancy would reduce the amount of vehicles eligible to use the HOV lanes and would result in improved levels of service for the HOV lanes, but reduced levels of service for the mixed flow lanes.

The vehicle occupancy survey presented in Section 2.0 shows how 27 percent of existing vehicles are eligible to use a 2+ persons per vehicle HOV lane and that just 6 percent of existing vehicles are eligible to use a 3+ persons per vehicle HOV lane. With a 2+ persons per vehicle configuration, the forecast traffic volumes for 2030 conditions indicate that during the critical peak hour, LOS E conditions would occur for both the mixed flow lanes and the HOV lanes. With a 3+ persons per vehicle configuration, the volume of eligible vehicles reduces to approximately 30 percent of the HOV lane capacity (i.e., LOS A conditions), resulting in improved HOV lane levels of service. However, this also results in more vehicles using the mixed flow lanes. With these additional vehicles the volumes in the mixed flow lanes would exceed capacity and LOS F conditions in the mixed flow lanes would result.

8.0 TWO SOUTHBOUND TRUCK LANES SCENARIO

Consideration has been given to constructing two truck lanes in the uphill portion of southbound I-5 between Calgrove Boulevard and SR-14. The LOS Summary Tables presented in Section 3.0 present the results of both a single truck lane analysis and this two truck lane analysis. The analysis indicates that providing two truck lanes improves the LOS of the mixed flow lanes by one level of service (from D to C for constrained flow conditions and from F to E for demand conditions), and improves the LOS of the truck lanes by one level of service (from B to A) for constrained flow conditions and by four levels of service (from E to A) for demand conditions.

A single truck lane in the uphill grade section is only able to accommodate the slowest trucks since the faster (e.g., unloaded) trucks will use the outside mixed flow lane to pass the slower trucks. Observed conditions indicate that due to the grade the faster trucks travel at a speed slower than the free-flow speed of passenger vehicles, thus reducing the average speeds in the mixed flow lanes. Providing two truck lanes would allow the faster trucks to pass the slower trucks without impacting the adjacent mixed flow lanes and improved levels of service for both the trucks and the vehicles in the mixed flow lanes will result.

9.0 SPECIAL ISSUES

9.1 HOV LANE CONFIGURATION

The HOV component of the project is anticipated to consist of buffer-separated HOV facilities; however the geometric design alternatives do not preclude the implementation of continuous ingress/egress or High Occupancy Toll (HOT) lanes. The location and number of ingress/egress points will be determined at a later stage of design and if a buffer-separated facility is implemented, a minimum ingress/egress length of 1,300 feet will be required.

Barrier-separated HOV facilities are not being proposed and, as such, a separate HOV weave lane is not mandatory. For buffer-separated facilities, an HOV weave lane is optional but would require additional lateral space in order to be implemented.

9.2 DIRECT HOV CONNECTOR – NORTHBOUND I-5 TO WESTBOUND SR-126

As noted in previous sections, the proposed HOV lanes extend north of the existing SR-126 interchange. The need for a direct connector between northbound I-5 and westbound SR-126 has been evaluated based on the anticipated volume of HOVs making this movement.

Traffic forecasts from the SCVCTM indicate the northbound I-5 to westbound SR-126 movement will remain relatively consistent over time with a peak volume of approximately 1,000 vehicles per hour (vph). This movement is not projected to increase due largely to the significant amount of new roadway construction (e.g., Magic Mountain Parkway, Valencia Boulevard, and Commerce Center Drive) along with the new interchange at Hasley Canyon Road (just north of the SR-126 interchange) that will provide access to the western portion of the Santa Clarita Valley.

Based on the average vehicle occupancies noted previously in Table 3, which indicate approximately 27% of the vehicles in this corridor being eligible to use an HOV lane, the demand for a direct connector is a peak of approximately 270 vph. The High Occupancy Vehicle Guidelines (2003 Edition) make note of a 500 vph threshold for providing direct HOV connectors and, as such, there does not appear to be a sufficient demand for a direct connector at this location.

9.3 AUXILIARY LANES AS AN EIP

Full auxiliary lanes are proposed between the following interchanges: 1) northbound direction between Valencia Boulevard and Magic Mountain Parkway, 2) southbound direction between Valencia Boulevard and McBean Parkway, and 3) northbound direction between Calgrove Boulevard and Pico Canyon Road/Lyons Avenue. These auxiliary lanes would provide benefit as stand alone projects and could potentially be implemented prior to the construction of the full project if funding is limited.

APPENDIX A

I-5 FREEWAY – 2006 COUNT SUMMARY

I-5 Freeway - 2006 Count Summary

I-5 SOUTHBOUND						I-5 NORTHBOUND						
	COUNT			%ADT			COUNT			%ADT		TOTAL
LOCATION	AM Pk Hr	PM Pk Hr	SB ADT	AM	PM	LOCATION	AM Pk Hr	PM Pk Hr	NB ADT	AM	PM	ADT
S/B MAINLINE	**1,330**	**1,970**	**32,490**	**4%**	**6%**	**N/B MAINLINE**	**1,210**	**2,020**	**32,300**	**4%**	**6%**	**64,790**
Lake Hughes SB OFF	160	210	4,800	3%	4%	Lake Hughes NB ON	230	350	7,310	3%	5%	
Lake Hughes SB ON	430	280	6,500	7%	4%	Lake Hughes NB OFF	210	580	6,090	3%	10%	
S/B MAINLINE	**1,600**	**2,040**	**34,190**	**5%**	**6%**	**N/B MAINLINE**	**1,190**	**2,250**	**31,080**	**4%**	**7%**	**65,270**
Parker SB ON	610	380	7,200	8%	5%	Parker NB OFF	380	540	10,960	3%	5%	
S/B MAINLINE	**2,210**	**2,420**	**41,390**	**5%**	**6%**	**N/B MAINLINE**	**1,570**	**2,790**	**42,040**	**4%**	**7%**	**83,430**
Hasley Canyon SB OFF	110	100	1,800	6%	6%	Hasley Canyon NB ON	80	200	2,130	4%	9%	
Hasley Canyon SB ON	1,010	690	9,670	10%	7%	Hasley Canyon NB OFF	680	1,030	10,560	6%	10%	
S/B MAINLINE	**3,110**	**3,010**	**49,260**	**6%**	**6%**	**N/B MAINLINE**	**2,170**	**3,620**	**50,470**	**4%**	**7%**	**99,730**
SR-126 SB OFF	350	270	4,000	9%	7%	SR-126 NB DIRECT ON	150	370	3,540	4%	10%	
SR-126 SB DIRECT ON	650	1,220	13,600	5%	9%	SR-126 NB LOOP ON	80	210	3,860	2%	5%	
SR-126 SB LOOP ON	10	190	2,000	1%	10%	SR-126 NB OFF	1,240	620	12,690	10%	5%	
S/B MAINLINE	**3,420**	**4,150**	**60,860**	**6%**	**7%**	**N/B MAINLINE**	**3,340**	**4,080**	**63,480**	**5%**	**6%**	**124,340**
Old Road/Rye Cyn SB OFF	280	170	4,100	7%	4%							
Old Road/Rye Cyn SB ON	1,060	1,370	13,400	8%	10%							
S/B MAINLINE	**4,200**	**5,350**	**70,160**	**6%**	**8%**	**N/B MAINLINE**	**3,340**	**4,080**	**63,480**	**5%**	**6%**	**133,640**
Magic Mountain SB OFF	350	430	5,500	6%	8%	Magic Mountain NB ON	310	500	8,020	4%	6%	
Magic Mountain SB ON	640	680	11,900	5%	6%	Magic Mountain NB OFF	1,460	1,690	24,460	6%	7%	
S/B MAINLINE	**4,490**	**5,600**	**76,560**	**6%**	**7%**	**N/B MAINLINE**	**4,490**	**5,270**	**79,920**	**6%**	**7%**	**156,480**
Valencia SB OFF	450	300	4,320	10%	7%	Valencia NB LOOP ON	250	250	2,840	9%	9%	
Valencia SB DIRECT ON	430	120	4,100	10%	3%							
Valencia SB LOOP ON	840	1,000	10,760	8%	9%	Valencia NB OFF	1,190	1,030	14,820	8%	7%	
S/B MAINLINE	**5,310**	**6,420**	**87,100**	**6%**	**7%**	**N/B MAINLINE**	**5,430**	**6,050**	**91,900**	**6%**	**7%**	**179,000**
Stevenson Ranch SB OFF	190	520	3,600	5%	14%	McBean NB DIRECT ON	100	130	1,470	7%	9%	
Stevenson Ranch SB DIRECT (	390	90	3,720	10%	2%	McBean NB LOOP ON	120	130	2,280	5%	6%	
Stevenson Ranch SB LOOP ON	220	460	6,200	4%	7%	McBean NB OFF	350	820	7,810	4%	10%	
S/B MAINLINE	**5,730**	**6,450**	**93,420**	**6%**	**7%**	**N/B MAINLINE**	**5,560**	**6,610**	**95,960**	**6%**	**7%**	**189,380**
Pico/Lyons SB OFF	480	580	7,800	6%	7%	Lyons NB ON	500	690	9,030	6%	8%	
Pico/Lyons SB LOOP ON	450	270	4,650	10%	6%							
Pico/Lyons SB DIRCT ON	620	320	7,300	8%	4%	Lyons NB OFF	560	1,100	14,920	4%	7%	
S/B MAINLINE	**6,320**	**6,460**	**97,570**	**6%**	**7%**	**N/B MAINLINE**	**5,620**	**7,020**	**101,850**	**6%**	**7%**	**199,420**
Calgrove SB OFF	260	240	2,550	10%	9%	Calgrove NB ON	130	400	3,840	3%	10%	
Calgrove SB ON	550	190	5,330	10%	4%	Calgrove NB OFF	110	350	3,350	3%	10%	
S/B MAINLINE	**6,610**	**6,410**	**100,350**	**7%**	**6%**	**N/B MAINLINE**	**5,600**	**6,970**	**101,360**	**6%**	**7%**	**201,710**
Total I-5 SB OFF (SCV)	*2,630*	*2,820*	*38,470*	7%	7%	***Total I-5 NB ON (SCV)***	*1,950*	*3,230*	*44,320*	4%	7%	
Total I-5 SB ON (SCV)	*7,910*	*7,260*	*106,330*	7%	7%	***Total I-5 NB OFF (SCV)***	*6,180*	*7,760*	*105,660*	6%	7%	
I-5 SB to SR-14 NB (OFF)	590	340	6,210	10%	5%	SR-14 SB to I-5 NB	330	650	6,350	5%	10%	
SR-14 SB to I-5 SB (ON)	6,990	3,420	67,200	10%	5%	I-5 NB to SR-14 NB	2,380	7,080	68,680	3%	10%	
S/B TOTAL	**13,270**	**9,180**	**161,200**	8%	6%	**N/B TOTAL**	**7,390**	**13,710**	**163,830**	5%	8%	**325,030**
SB - Truck Route	1,820	1,560	26,000	7%	6%	NB - Truck Route	1,560	1,820	26,000	6%	7%	52,000
SB - Mixed Flow Mainline	11,450	7,620	135,200	8%	6%	NB - Mixed Flow Mainline	5,830	11,890	137,830	4%	9%	273,030

APPENDIX B

PEAK HOUR VOLUMES BY VEHICLE TYPE AND OCCUPANCY

Table B-1: Peak Hour Traffic Volumes by Vehicle Type and Occupancy – Year 2010

	Southbound				Northbound			
I-5 Segment	**Trucks**	**SOVs**	**HOVs**	**Total**	**Trucks**	**SOVs**	**HOVs**	**Total**
AM Peak Hour								
North of Parker Road	440	1,430	530	2,400	350	1,130	420	1,900
Between Parker Road & Hasley Canyon Road	510	2,110	780	3,400	350	1,420	530	2,300
Between Hasley Canyon Road & SR-126	550	2,660	990	4,200	440	2,160	800	3,400
Between SR-126 & Rye Canyon Road	530	2,610	960	4,100	570	2,800	1,030	4,400
Between Rye Canyon Road & Magic Mountain Parkway	620	2,910	1,070	4,600	590	2,780	1,030	4,400
Between Magic Mountain Pkwy & Valencia Boulevard	580	3,080	1,140	4,800	640	3,400	1,260	5,300
Between Valencia Boulevard & McBean Parkway	590	3,660	1,350	5,600	640	3,990	1,470	6,100
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	590	3,800	1,410	5,800	630	4,070	1,500	6,200
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	610	4,230	1,560	6,400	570	3,960	1,470	6,000
Between Calgrove Boulevard & SR-14	620	4,370	1,610	6,600	550	3,830	1,420	5,800
South of SR-14	1,190	9,210	3,400	13,800	660	5,140	1,900	7,700
PM Peak Hour								
North of Parker Road	560	1,780	660	3,000	630	2,020	750	3,400
Between Parker Road & Hasley Canyon Road	530	2,170	800	3,500	660	2,730	1,010	4,400
Between Hasley Canyon Road & SR-126	600	2,920	1,080	4,600	650	3,180	1,170	5,000
Between SR-126 & Rye Canyon Road	700	3,430	1,270	5,400	640	3,110	1,150	4,900
Between Rye Canyon Road & Magic Mountain Parkway	890	4,170	1,540	6,600	660	3,100	1,140	4,900
Between Magic Mountain Pkwy & Valencia Boulevard	780	4,180	1,540	6,500	680	3,660	1,360	5,700
Between Valencia Boulevard & McBean Parkway	750	4,640	1,710	7,100	670	4,180	1,550	6,400
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	720	4,660	1,720	7,100	690	4,460	1,650	6,800
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	650	4,490	1,660	6,800	670	4,690	1,740	7,100
Between Calgrove Boulevard & SR-14	640	4,500	1,660	6,800	670	4,690	1,740	7,100
South of SR-14	820	6,340	2,340	9,500	1,200	9,270	3,430	13,900

SOV = Single Occupant Vehicle
HOV = High Occupancy Vehicle (2+ Persons/Vehicle) and is HOV lane eligible

Table B-2: Peak Hour Traffic Volumes by Vehicle Type and Occupancy – Year 2015

	Southbound				Northbound			
I-5 Segment	**Trucks**	**SOVs**	**HOVs**	**Total**	**Trucks**	**SOVs**	**HOVs**	**Total**
AM Peak Hour								
North of Parker Road	500	2,040	760	3,300	410	1,670	620	2,700
Between Parker Road & Hasley Canyon Road	610	2,990	1,100	4,700	400	1,970	730	3,100
Between Hasley Canyon Road & SR-126	640	3,400	1,260	5,300	580	3,080	1,140	4,800
Between SR-126 & Rye Canyon Road	590	3,150	1,160	4,900	670	3,600	1,330	5,600
Between Rye Canyon Road & Magic Mountain Parkway	610	3,280	1,210	5,100	670	3,600	1,330	5,600
Between Magic Mountain Pkwy & Valencia Boulevard	620	3,490	1,290	5,400	710	4,010	1,480	6,200
Between Valencia Boulevard & McBean Parkway	640	3,990	1,470	6,100	740	4,570	1,690	7,000
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	600	3,870	1,430	5,900	700	4,530	1,670	6,900
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	630	4,360	1,610	6,600	620	4,290	1,590	6,500
Between Calgrove Boulevard & SR-14	630	4,430	1,640	6,700	570	4,040	1,490	6,100
South of SR-14	1,250	9,670	3,580	14,500	710	5,470	2,020	8,200
PM Peak Hour								
North of Parker Road	620	2,540	940	4,100	710	2,910	1,080	4,700
Between Parker Road & Hasley Canyon Road	610	2,990	1,100	4,700	790	3,880	1,430	6,100
Between Hasley Canyon Road & SR-126	770	4,110	1,520	6,400	780	4,180	1,540	6,500
Between SR-126 & Rye Canyon Road	820	4,370	1,610	6,800	700	3,720	1,380	5,800
Between Rye Canyon Road & Magic Mountain Parkway	970	5,200	1,930	8,100	700	3,720	1,380	5,800
Between Magic Mountain Pkwy & Valencia Boulevard	900	5,040	1,860	7,800	710	4,010	1,480	6,200
Between Valencia Boulevard & McBean Parkway	860	5,360	1,980	8,200	710	4,450	1,640	6,800
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	810	5,250	1,940	8,000	710	4,590	1,700	7,000
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	700	4,890	1,810	7,400	690	4,830	1,780	7,300
Between Calgrove Boulevard & SR-14	700	4,890	1,810	7,400	680	4,760	1,760	7,200
South of SR-14	850	6,610	2,440	9,900	1,210	9,410	3,480	14,100

SOV = Single Occupant Vehicle
HOV = High Occupancy Vehicle (2+ Persons/Vehicle) and is HOV lane eligible

Table B-3: Peak Hour Traffic Volumes by Vehicle Type and Occupancy – Year 2030, Constrained Flow Model

	Southbound				Northbound			
I-5 Segment	**Trucks**	**SOVs**	**HOVs**	**Total**	**Trucks**	**SOVs**	**HOVs**	**Total**
AM Peak Hour								
North of Parker Road	780	3,270	1,150	5,200	620	2,580	900	4,100
Between Parker Road & Hasley Canyon Road	800	4,370	1,530	6,700	590	3,190	1,120	4,900
Between Hasley Canyon Road & SR-126	760	4,770	1,670	7,200	680	4,310	1,510	6,500
Between SR-126 & Rye Canyon Road	740	4,630	1,630	7,000	720	4,570	1,610	6,900
Between Rye Canyon Road & Magic Mountain Parkway	760	4,770	1,670	7,200	720	4,570	1,610	6,900
Between Magic Mountain Pkwy & Valencia Boulevard	770	4,830	1,700	7,300	750	4,700	1,650	7,100
Between Valencia Boulevard & McBean Parkway	850	5,360	1,890	8,100	800	5,030	1,770	7,600
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	740	5,220	1,840	7,800	710	5,020	1,770	7,500
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	690	4,890	1,720	7,300	670	4,680	1,650	7,000
Between Calgrove Boulevard & SR-14	700	4,960	1,740	7,400	600	4,290	1,510	6,400
South of SR-14	1,520	11,970	4,210	17,700	790	6,220	2,190	9,200
PM Peak Hour								
North of Parker Road	980	4,080	1,440	6,500	1,020	4,280	1,500	6,800
Between Parker Road & Hasley Canyon Road	910	4,950	1,740	7,600	980	5,340	1,880	8,200
Between Hasley Canyon Road & SR-126	960	6,020	2,120	9,100	910	5,760	2,030	8,700
Between SR-126 & Rye Canyon Road	970	6,090	2,140	9,200	810	5,100	1,790	7,700
Between Rye Canyon Road & Magic Mountain Parkway	1,060	6,690	2,350	10,100	810	5,100	1,790	7,700
Between Magic Mountain Pkwy & Valencia Boulevard	1,030	6,490	2,280	9,800	830	5,230	1,840	7,900
Between Valencia Boulevard & McBean Parkway	1,050	6,620	2,330	10,000	870	5,500	1,930	8,300
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	910	6,430	2,260	9,600	800	5,620	1,980	8,400
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	850	5,960	2,090	8,900	800	5,620	1,980	8,400
Between Calgrove Boulevard & SR-14	830	5,900	2,070	8,800	770	5,500	1,930	8,200
South of SR-14	990	7,780	2,730	11,500	1,440	11,290	3,970	16,700

SOV = Single Occupant Vehicle
HOV = High Occupancy Vehicle (2+ Persons/Vehicle) and is HOV lane eligible

Table B-4: Peak Hour Traffic Volumes by Vehicle Type and Occupancy – Year 2030, Demand Model

	Southbound				Northbound			
I-5 Segment	**Trucks**	**SOVs**	**HOVs**	**Total**	**Trucks**	**SOVs**	**HOVs**	**Total**
AM Peak Hour								
North of Parker Road	860	3,630	1,210	5,700	660	2,800	940	4,400
Between Parker Road & Hasley Canyon Road	940	4,690	1,570	7,200	690	3,460	1,150	5,300
Between Hasley Canyon Road & SR-126	870	5,270	1,760	7,900	760	4,600	1,540	6,900
Between SR-126 & Rye Canyon Road	870	5,270	1,760	7,900	800	4,870	1,630	7,300
Between Rye Canyon Road & Magic Mountain Parkway	920	5,610	1,870	8,400	800	4,870	1,630	7,300
Between Magic Mountain Pkwy & Valencia Boulevard	860	5,800	1,940	8,600	820	5,530	1,850	8,200
Between Valencia Boulevard & McBean Parkway	960	6,480	2,160	9,600	910	6,140	2,050	9,100
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	900	6,450	2,150	9,500	900	6,450	2,150	9,500
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	900	6,450	2,150	9,500	890	6,380	2,130	9,400
Between Calgrove Boulevard & SR-14	900	6,520	2,180	9,600	840	6,040	2,020	8,900
South of SR-14	1,980	15,760	5,260	23,000	1,060	8,430	2,810	12,300
PM Peak Hour								
North of Parker Road	1,080	4,590	1,530	7,200	1,140	4,840	1,620	7,600
Between Parker Road & Hasley Canyon Road	1,080	5,410	1,810	8,300	1,180	5,940	1,980	9,100
Between Hasley Canyon Road & SR-126	1,080	6,540	2,180	9,800	1,060	6,400	2,140	9,600
Between SR-126 & Rye Canyon Road	1,130	6,880	2,290	10,300	980	5,940	1,980	8,900
Between Rye Canyon Road & Magic Mountain Parkway	1,330	8,080	2,690	12,100	980	5,940	1,980	8,900
Between Magic Mountain Pkwy & Valencia Boulevard	1,210	8,170	2,720	12,100	950	6,410	2,140	9,500
Between Valencia Boulevard & McBean Parkway	1,300	8,770	2,930	13,000	1,030	6,950	2,320	10,300
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	1,170	8,350	2,780	12,300	1,000	7,120	2,380	10,500
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	1,130	8,080	2,690	11,900	1,040	7,390	2,470	10,900
Between Calgrove Boulevard & SR-14	1,100	7,950	2,650	11,700	1,030	7,480	2,490	11,000
South of SR-14	1,330	10,630	3,540	15,500	1,920	15,280	5,100	22,300

SOV = Single Occupant Vehicle
HOV = High Occupancy Vehicle (2+ Persons/Vehicle) and is HOV lane eligible

APPENDIX C
EARLY IMPLEMENTATION PROJECTS TRAFFIC ANALYSIS

I-5 PA&ED HOV & TRUCK LANES EARLY IMPLEMENTATION PROJECTS (EIP) TRAFFIC ANALYSIS

07-LA-5, PM R 45.5/R 59.0
EA 2332E0

Southbound Truck Climbing Lane EA 2332A
Northbound HOV Lane Extension EA 2332C

Prepared for:

The California Department of Transportation

July 9, 2007

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Appendix I-5 HOV and Truck Lanes Projects – SR-14 to Parker Road Traffic Volume Data Summary

Southbound Truck Lane Volume Calculations

HCS2000 Report Sheets
Southbound Truck Climbing Lane Analysis
Northbound HOV Lane Extension Analysis

INTRODUCTION

This traffic analysis evaluates the traffic impact of two early implementation projects (EIP) from the I-5 PA&ED Truck & HOV Lane Widening Improvements from SR-14 to the Parker Road Interchange (07-LA-5, PM R 45.4/R 59.0, EA 2332E0). The two early implementation components are the extension of the northbound HOV lane on I-5 from the SR-14 interchange north to the summit (EA 2332C) and a truck climbing lane southbound from the Lyons Canyon/Pico Canyon Road interchange to the SR-14 interchange (EA 2332A). The analysis conducted considered the following three scenarios:

1. Existing 2006 Conditions
2. 2010 Conditions with No Improvements
3. 2010 Conditions with Improvements

Vehicle counts were obtained from "I-5 HOV and Truck Lanes Projects – SR-14 to Parker Road Traffic Volume Data Summary," prepared by Austin-Foust and Associates, Inc. A copy of the count information from the document is provided in the Appendix. The existing counts given in the document were obtained from multiple sources, including published Caltrans data and field surveys by Austin-Foust Associates, Inc. and Korve Engineering, Inc. Future year forecasts were obtained from the Santa Clarita Valley Consolidated Traffic Model (SCVCTM). The SCVCTM was developed jointly by the County of Los Angeles Department of Public Works and the City of Santa Clarita. The model is the primary tool used by both agencies for transportation planning in this area.

The analysis was accomplished with HCS2000 software using the freeways module. Two freeway sections for each improvement were analyzed for each scenario. The next two sections describe the details of the analyses followed by the results of the analyses.

TRUCK CLIMBING LANE ANALYSIS DETAILS

A truck climbing lane is proposed to be added to the existing four lane southbound facility. The analysis uses counts obtained 1) between Lyons Avenue/Pico Canyon Road and Calgrove Boulevard and 2) between Calgrove Boulevard and SR-14. These two sections were analyzed considering each of the analysis scenarios.

It was assumed that most of the trucks would remain in the outermost lane as they climbed up the grade. However, not all trucks are heavily loaded and will enter the inner lanes in order to pass slow moving trucks. The outermost lane was removed from the analysis of all the scenarios and the trucks anticipated to use that lane were subtracted from the volume. However, in order to represent the lighter trucks passing in the inner lanes a small percentage of trucks was used in the analysis. Approximately 20% of the trucks (2% of the total traffic stream) were assumed to use the inner lanes of the freeway. Tables summarizing these calculations are provided in the Appendix.

To summarize, an analysis of one less lane was done instead of the total number of lanes and the volume was reduced to reflect the trucks that would use the outermost lane. The number of trucks in the outermost lane is not expected to reach the capacity of the truck lane, estimated at 1200 trucks per hour, by 2010. This was done for all scenarios; thus, the outermost lane is considered the truck climbing lane even in the existing and 2010 no improvements scenarios.

The grades used for the two sections analyzed were provided by Caltrans (California Department of Transportation).

HOV LANE EXTENSION ANALYSIS DETAILS

This analysis included two sections: 1) between the off-ramp to SR-14 northbound and the on-ramp from the SR-14 southbound and 2) between the on-ramp from SR-14 southbound and the truck route on-ramp.

Volume data was not available for the two sections listed above. However, by subtracting known off-ramp data and adding known on-ramp data the mainline volumes in these sections were determined for the existing condition. Model data for the on/off-ramps in 2010 was not available; thus, the process used for the existing conditions could not be repeated for the 2010 scenarios. However, the ramp volumes were estimated by calculated the percent change between the existing mainline volumes and 2010 model mainline volumes and then applying the same percent change to the ramp volumes. The same process was then used to obtain the 2010 volumes in the sections desired for the analysis.

The analysis of the existing and 2010 with no improvements was a straight forward three lane section analysis. The 2010 scenario with improvements was analyzed as a four lane freeway even though the added lane was a HOV lane. Based on an occupancy study conducted in April 2005, Korve Engineering employees found that eligible vehicles for the HOV lane make up 27% of the total volume. It is expected that the maximum percentage of volume in the HOV lane of a four lane freeway would be 25%. Any greater proportion of the volume would result in a negative benefit for eligible vehicles. Therefore, eligible motorists would chose to use the mixed flow lanes instead of the HOV lane.

RESULTS OF THE ANALYSIS

An HCM Level of Service (LOS) analysis was used to compare the impacts of the study scenarios. The detailed report sheets are provided in the Appendix. LOS is a quality measure describing operation conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six LOS are defined for each type of facility that has analysis procedures available. Letters designate each level, from A to F, with LOS A representing the best operating conditions and LOS F the worst. Each LOS

represents a range of operating conditions and the driver's perception of those conditions. The LOS for a basic freeway segment is based on density given in units of passenger cars per mile per lane (*1*). The LOS thresholds are given in Table 1.

TABLE 1
LOS Thresholds for a Basic Freeway Segment (*1*)

LOS	Density Range (pc/mi/ln)
A	0-11
B	>11-18
C	>18-26
D	>26-35
E	>35-45
F	>45

The results of analysis of the truck lane addition to southbound I-5 are provided in Table 2. The approach of the analysis was to assume that one lane was not usable by passenger cars because of slow moving trucks. The analysis was done by subtracting most of the trucks from the volume and subtracting one lane. For example, the 2006 existing condition was analyzed as a three lane freeway with 2% percent trucks. The analysis based on the methodology is anticipated to be representative of actual conditions in this segment of I-5. Based on this analysis the addition of a truck lane will improve the peak hour operating conditions in 2010 from LOS E and F to LOS C and D.

TABLE 2
Southbound Truck Lane Addition LOS Analysis Results

Freeway Section		SB Between Lyons Ave & Calgrove Blvd		SB Between Calgrove Blvd & SR-14	
Peak Hour		AM	PM	AM	PM
2006 Existing	LOS	E	E	F	F
	Density (pc/mi/ln)	35.5	38.3	*	*
	Ave pc Speed (mph)	61.1	58.6	*	*
2010 No Improvements	LOS	E	E	F	F
	Density (pc/mi/ln)	36.4	43.3	*	*
	Ave pc Speed (mph)	60.3	54.6	*	*
2010 With Truck Lane	LOS	C	D	D	D
	Density (pc/mi/ln)	23.8	26.1	27.5	29.3
	Ave pc Speed (mph)	69.2	68.1	67.3	66.0

*Density and average passenger car speed are not calculated when LOS F.

As shown in Table 2, the addition of a southbound truck lane is expected to improve the 2010 operating conditions from an unacceptable (LOS E or F) to an acceptable (LOS C or D) service level. The single truck lane is expected to operate at an acceptable level of service. The highest flow rate is expected to be about 410 trucks per hour. Capacity of a truck lane in the grapevine was measured by Caltrans to be 1200 trucks per hour. Based on this capacity, the truck lane is expected to have a volume-to-capacity ratio of 0.34.

The results of the HOV lane extension analysis are provided in Table 3. The analysis shows that extending the HOV lane will generally improve the operating conditions by one service level during the peak hours in 2010.

TABLE 3
Northbound HOV Lane Extension LOS Analysis Results

Freeway Section		NB Between Off-Ramp to SR-14 & On-Ramp From SR-14		NB Between On-ramp From SR-14 & Truck Route On-Ramp	
Peak Hour		AM	PM	AM	PM
2006 Existing	LOS	B	C	C	D
	Density (pc/mi/ln)	17.8	25.4	19.5	30.2
	Ave pc Speed (mph)	70.0	68.5	70.0	65.3
2010 No Improvements	LOS	C	C	C	D
	Density (pc/mi/ln)	18.6	25.9	20.4	30.9
	Ave pc Speed (mph)	70.0	68.2	69.9	64.8
2010 With Improvements	LOS	B	C	B	C
	Density (pc/mi/ln)	13.9	18.9	15.3	21.5
	Ave pc Speed (mph)	70.0	70.0	70.0	69.8

REFERENCES

1. Highway Capacity Manual 2000. Transportation Research Board, National Research Council, Washington, D.C., 2000, pp. 2-2 – 2-3.

APPENDIX

I-5 HOV and Truck Lanes Projects – SR-14 to Parker Road Traffic Volume Data Summary

Southbound Truck Lane Volume Calculations

HCS2000 Report Sheets

Southbound Truck Climbing Lane Analysis
Northbound HOV Lane Extension Analysis

I-5 HOV and Truck Lanes Projects – SR-14 to Parker Road Traffic Volume Data Summary

Table 2: Existing (2006) Traffic Volumes

I-5 Segment	% Trucks (Daily)	AM Peak Hour		PM Peak Hour		ADT
		SB	NB	SB	NB	
North of Parker Road	26.6%	1,600	1,190	2,040	2,250	65,000
Between Parker Road & Hasley Canyon Road	20.8%	2,210	1,570	2,420	2,790	83,000
Between Hasley Canyon Road & SR-126	17.3%	3,110	2,170	3,010	3,620	100,000
Between SR-126 & Rye Canyon Road	15.3%	3,420	3,340	4,150	4,080	124,000
Between Rye Canyon Road & Magic Mountain Parkway	14.2%	4,200	3,340	5,350	4,080	134,000
Between Magic Mountain Parkway & Valencia Boulevard	12.2%	4,490	4,490	5,600	5,270	156,000
Between Valencia Boulevard & McBean Parkway	10.6%	5,310	5,430	6,420	6,050	179,000
Between McBean Parkway & Lyons Avenue/Pico Canyon Road	10.1%	5,730	5,560	6,450	6,610	189,000
Between Lyons Avenue/Pico Canyon Road & Calgrove Blvd.	9.5%	6,320	5,620	6,460	7,020	199,000
Between Calgrove Boulevard & SR-14	9.4%[1]	6,610	5,600	6,410	6,970	202,000
South of SR-14	5.8%	13,270	7,390	9,180	13,710	325,000

[1] Peak Hour Truck Percentages (2005 Survey): AM NB = 7.0%; AM SB = 8.2%; PM NB = 6.5%; PM SB = 6.7%

Sources:
Korve Engineering, Mainline Counts (Peak Hour), April 2005
Austin-Foust Associates, Inc., Ramp Counts (Peak Hour), 2004-2006
Korve Engineering, Mainline Truck Counts (Peak Hour), April 2005
Caltrans, Mainline AADT, 2005
Caltrans, Ramp Volumes ADT, 2005
Caltrans, AADT Daily Truck Traffic, 2004
Caltrans, Count Station Data (Hourly), 2003

Table 8: Year 2010 – Early Implementation Project Opening Day Forecasts

I-5 Segment	AM Peak Hour		PM Peak Hour		ADT
	SB	NB	SB	NB	
North of Parker Road	2,400	1,900	3,000	3,400	100,000
Between Parker Road & Hasley Canyon Road	3,400	2,300	3,500	4,400	122,000
Between Hasley Canyon Road & SR-126	4,200	3,400	4,600	5,000	138,000
Between SR-126 & Rye Canyon Road	4,100	4,400	5,400	4,900	146,000
Between Rye Canyon Road & Magic Mountain Parkway	4,600	4,400	6,600	4,900	160,000
Between Magic Mountain Pkwy & Valencia Boulevard	4,800	5,300	6,500	5,700	176,000
Between Valencia Boulevard & McBean Parkway	5,600	6,100	7,100	6,400	194,000
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	5,800	6,200	7,100	6,800	204,000
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	6,400	6,000	6,800	7,100	206,000
Between Calgrove Boulevard & SR-14	6,600	5,800	6,800	7,100	214,000
South of SR-14	13,800	7,700	9,500	13,900	394,000

Source: SCVCTM Ver. 4.1

Table 9: Year 2015 – Full Project Opening Day Forecasts

I-5 Segment	AM Peak Hour		PM Peak Hour		ADT
	SB	NB	SB	NB	
North of Parker Road	3,300	2,700	4,100	4,700	137,000
Between Parker Road & Hasley Canyon Road	4,700	3,100	4,700	6,100	163,000
Between Hasley Canyon Road & SR-126	5,300	4,800	6,400	6,500	179,000
Between SR-126 & Rye Canyon Road	4,900	5,600	6,800	5,800	171,000
Between Rye Canyon Road & Magic Mountain Parkway	5,100	5,600	8,100	5,800	191,000
Between Magic Mountain Pkwy & Valencia Boulevard	5,400	6,200	7,800	6,200	203,000
Between Valencia Boulevard & McBean Parkway	6,100	7,000	8,200	6,800	216,000
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	5,900	6,900	8,000	7,000	226,000
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	6,600	6,500	7,400	7,300	220,000
Between Calgrove Boulevard & SR-14	6,700	6,100	7,400	7,200	229,000
South of SR-14	14,500	8,200	9,900	14,100	471,000

Source: SCVCTM Ver. 4.1

Southbound Truck Lane Volume Calculations

2006 Existing Southbound Traffic on I-5

Section	AM				Remaining volume to use inner lanes	PM				Remaining volume to use inner lanes
	Volume (veh/hr)	Total % Trucks	% Trucks to use outermost lane	Number of trucks to use outermost lane (tr/hr)		Volume (veh/hr)	Total % Trucks	% Trucks to use outermost lane	Number of trucks to use outermost lane (tr/hr)	
SB Between Lyons Ave & Calgrove Blvd	6320	8.2%	6.2%	392	**5928**	6460	6.7%	4.7%	304	**6156**
SB Between Calgrove Blvd & SR-14	6610	8.2%	6.2%	410	**6200**	6410	6.7%	4.7%	301	**6109**

2010 Southbound Traffic on I-5

Section	AM				Remaining volume to use inner lanes	PM				Remaining volume to use inner lanes
	Volume (veh/hr)	Total % Trucks	% Trucks to use outermost lane	Number of trucks to use outermost lane (tr/hr)		Volume (veh/hr)	Total % Trucks	% Trucks to use outermost lane	Number of trucks to use outermost lane (tr/hr)	
SB Between Lyons Ave & Calgrove Blvd	6400	8.2%	6.2%	397	**6003**	6800	6.7%	4.7%	320	**6480**
SB Between Calgrove Blvd & SR-14	6600	8.2%	6.2%	409	**6191**	6800	6.7%	4.7%	320	**6480**

HCS2000 Report Sheets

Southbound Truck Climbing Land Analysis
Northbound HOV Lane Extension Analysis

Southbound Truck Climbing Lane Analysis

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Operational Analysis

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Date Performed:	1/25/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-5/SB
From/To:	Between Lyons Ave & Calgrove B
Jurisdiction:	
Analysis Year:	Existing 2006
Description:	Removing lane for trucks

Flow Inputs and Adjustments

Volume, V	5928	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1528	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, fp	0.95	
Flow rate, vp	2166	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2166	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	61.1	mi/h
Number of lanes, N	3	
Density, D	35.5	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

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Analysis Time Period:	PM Peak
Freeway/Direction:	I-5/SB
From/To:	Between Lyons Ave & Calgrove B
Jurisdiction:	
Analysis Year:	Existing 2006
Description:	Removing lane for trucks

Flow Inputs and Adjustments

Volume, V	6156	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1587	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, fp	0.95	
Flow rate, vp	2249	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2249	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	58.6	mi/h
Number of lanes, N	3	
Density, D	38.3	pc/mi/ln
Level of service, LOS	E	

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Analysis Time Period:	AM Peak
Freeway/Direction:	I-5/SB
From/To:	Between Calgrove Blvd & SR-14
Jurisdiction:	
Analysis Year:	Existing 2006
Description:	Removing lane for trucks

Flow Inputs and Adjustments

Volume, V	6200	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1598	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	1.84	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, fp	0.95	
Flow rate, vp	2467	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2467	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

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Analysis Time Period:	PM Peak
Freeway/Direction:	I-5/SB
From/To:	Between Calgrove Blvd & SR-14
Jurisdiction:	
Analysis Year:	Existing 2006
Description:	Removing lane for trucks

Flow Inputs and Adjustments

Volume, V	6109	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1574	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	1.84	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, fp	0.95	
Flow rate, vp	2431	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2431	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

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Date Performed:	1/25/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-5/SB
From/To:	Between Lyons Ave & Calgrove B
Jurisdiction:	
Analysis Year:	2010 No Improvements
Description:	Removing truck lane

Flow Inputs and Adjustments

Volume, V	6003	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1547	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, fp	0.95	
Flow rate, vp	2193	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2193	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	60.3	mi/h
Number of lanes, N	3	
Density, D	36.4	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

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Analysis Time Period:	PM Peak
Freeway/Direction:	I-5/SB
From/To:	Between Lyons Ave & Calgrove B
Jurisdiction:	
Analysis Year:	2010 No Improvements
Description:	Removing truck lane

Flow Inputs and Adjustments

Volume, V	6480	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1670	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, fp	0.95	
Flow rate, vp	2367	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2367	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	54.6	mi/h
Number of lanes, N	3	
Density, D	43.3	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

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Date Performed:	1/25/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-5/SB
From/To:	Between Calgrove Blvd & SR-14
Jurisdiction:	
Analysis Year:	2010 No Improvements

Description: Removing truck lane

Flow Inputs and Adjustments

Volume, V	6191	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1596	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	1.84	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, fp	0.95	
Flow rate, vp	2463	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2463	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

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Date Performed:	1/25/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-5/SB
From/To:	Between Calgrove Blvd & SR-14
Jurisdiction:	
Analysis Year:	2010 No Improvements

Description: Removing truck lane

Flow Inputs and Adjustments

Volume, V	6480	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1670	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	1.84	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, fp	0.95	
Flow rate, vp	2578	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2578	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

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Date Performed:	1/25/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-5/SB
From/To:	Between Lyons Ave & Calgrove B
Jurisdiction:	
Analysis Year:	2010 With EIP
Description:	Removing truck lane

Flow Inputs and Adjustments

Volume, V	6003	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1547	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, fp	0.95	
Flow rate, vp	1645	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1645	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.2	mi/h
Number of lanes, N	4	
Density, D	23.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-5/SB
From/To:	Between Lyons Ave & Calgrove B
Jurisdiction:	
Analysis Year:	2010 With EIP
Description:	Removing truck lane

Flow Inputs and Adjustments

Volume, V	6480	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1670	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, fp	0.95	
Flow rate, vp	1776	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1776	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.1	mi/h
Number of lanes, N	4	
Density, D	26.1	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-5/SB
From/To:	Between Calgrove Blvd & SR-14
Jurisdiction:	
Analysis Year:	2010 With EIP
Description:	Removing truck lane

Flow Inputs and Adjustments

Volume, V	6191	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1596	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	1.84	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, fp	0.95	
Flow rate, vp	1848	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1848	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	67.3	mi/h
Number of lanes, N	4	
Density, D	27.5	pc/mi/ln
Level of service, LOS	D	

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Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-5/SB
From/To:	Between Calgrove Blvd & SR-14
Jurisdiction:	
Analysis Year:	2010 With EIP
Description:	Removing truck lane

Flow Inputs and Adjustments

Volume, V	6480	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1670	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	1.84	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, fp	0.95	
Flow rate, vp	1934	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1934	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	66.0	mi/h
Number of lanes, N	4	
Density, D	29.3	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

Northbound HOV Lane Extension Analysis

HCS2000: Basic Freeway Segments Release 4.1f

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Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-5/NB
From/To:	SR-14 Off to SR-14 On-Ramp
Jurisdiction:	
Analysis Year:	Existing 2006
Description:	

Flow Inputs and Adjustments

Volume, V	3450	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	889	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	0.95	
Flow rate, vp	1248	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1248	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	17.8	pc/mi/ln
Level of service, LOS	B	

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Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-5/NB
From/To:	SR-14 Off to SR-14 On-Ramp
Jurisdiction:	
Analysis Year:	Existing 2006
Description:	

Flow Inputs and Adjustments

Volume, V	4810	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1240	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	2.0*	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	0.95	
Flow rate, vp	1740	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1740	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.5	mi/h
Number of lanes, N	3	
Density, D	25.4	pc/mi/ln
Level of service, LOS	C	

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Date Performed:	1/25/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-5/NB
From/To:	SR-14 On Ramp & Truck Rte On
Jurisdiction:	
Analysis Year:	Existing 2006
Description:	

Flow Inputs and Adjustments

Volume, V	3780	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	974	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	0.95	
Flow rate, vp	1367	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1367	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	19.5	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

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Date Performed:	1/25/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-5/NB
From/To:	SR-14 On Ramp & Truck Rte On
Jurisdiction:	
Analysis Year:	Existing 2006
Description:	

Flow Inputs and Adjustments

Volume, V	5460	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1407	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	0.95	
Flow rate, vp	1975	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1975	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	65.3	mi/h
Number of lanes, N	3	
Density, D	30.2	pc/mi/ln
Level of service, LOS	D	

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Operational Analysis

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Date Performed:	1/25/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-5/NB
From/To:	SR-14 Off To SR-14 On-Ramp
Jurisdiction:	
Analysis Year:	2010 No Improvements
Description:	

Flow Inputs and Adjustments

Volume, V	3595	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	927	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	0.95	
Flow rate, vp	1300	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1300	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	18.6	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-5/NB
From/To:	SR-14 Off to SR-14 On-Ramp
Jurisdiction:	
Analysis Year:	2010 No Improvements
Description:	

Flow Inputs and Adjustments

Volume, V	4877	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1257	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	0.95	
Flow rate, vp	1764	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1764	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.2	mi/h
Number of lanes, N	3	
Density, D	25.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-5/NB
From/To:	SR-14 On Ramp & Truck Rte On
Jurisdiction:	
Analysis Year:	2010 No Improvements
Description:	

Flow Inputs and Adjustments

Volume, V	3939	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1015	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	0.95	
Flow rate, vp	1425	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1425	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.9	mi/h
Number of lanes, N	3	
Density, D	20.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

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Date Performed:	1/25/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-5/NB
From/To:	SR-14 On Ramp & Truck Rte On
Jurisdiction:	
Analysis Year:	2010 No Improvements
Description:	

Flow Inputs and Adjustments

Volume, V	5536	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1427	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	0.95	
Flow rate, vp	2003	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2003	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	64.8	mi/h
Number of lanes, N	3	
Density, D	30.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

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Date Performed:	1/25/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-5/NB
From/To:	SR-14 Off and SR-14 On-Ramp
Jurisdiction:	
Analysis Year:	2010 With EIP
Description:	

Flow Inputs and Adjustments

Volume, V	3595	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	927	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	0.95	
Flow rate, vp	975	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	975	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	13.9	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

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Date Performed:	1/25/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-5/NB
From/To:	SR-14 Off to SR-14 On-Ramp
Jurisdiction:	
Analysis Year:	2010 With EIP
Description:	

Flow Inputs and Adjustments

Volume, V	4877	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1257	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	0.95	
Flow rate, vp	1323	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1323	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	18.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

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Phone: 801-569-2131 Fax: 801-569-2149
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Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-5/NB
From/To:	SR-14 On Ramp & Truck Rte On
Jurisdiction:	
Analysis Year:	2010 With EIP
Description:	

Flow Inputs and Adjustments

Volume, V	3939	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1015	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	0.95	
Flow rate, vp	1069	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1069	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	15.3	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-5/NB
From/To:	SR-14 On Ramp & Truck Rte On
Jurisdiction:	
Analysis Year:	2010 With EIP
Description:	

Flow Inputs and Adjustments

Volume, V	5536	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1427	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	0.95	
Flow rate, vp	1502	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1502	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.8	mi/h
Number of lanes, N	4	
Density, D	21.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

District 7 Projects, I-5/SR-14 Direct HOV Connector (Current), Caltrans website accessed 1/31/2011

Back to List / Map

District 7 Projects

I-5/SR-14 Direct HOV Connector Current

THE PROJECT
An elevated two-lane High Occupancy Vehicle (HOV or carpool) lane connector will be constructed to connect the HOV lanes of the Golden State Freeway (I-5) and the Antelope Valley Freeway (SR-14). Funding for the program is provided by the State Transportation Improvement Program (STIP), federal government and the Los Angeles County Metropolitan Transportation Authority (Metro).

SUMMARY
The Direct HOV project involves the construction of an elevated two-lane direct HOV connector at the I-5 and State Route 14 interchange and construction of HOV lanes in the north- and southbound directions of I-5 at the interchange. A direct HOV connector will allow motorists a freeway-to-freeway transfer without exiting the carpool lane.

BENEFITS
Construction of the direct HOV connector and HOV lanes will relieve congestion, improve traffic flow, enhance safety and improve traffic operations of both freeways at the I-5/SR-14 interchange.

COST
$156.6 million.

STATUS
The project is 60% complete. All major retaining walls are complete, as are drainage systems, part of the concrete paving, a substantial portion of foundation-related work, and most of the West Sylmar bridge widening. Crews are currently working on the HOV connector, the remaining retaining walls, and the West Sylmar Bridge widening and deck construction.

SCHEDULE
Anticipated project completion date is fall, 2012.

Press Releases

Project Related Press Releases

Map

Photos

What ARE they Doing? The I-5/SR-14 Direct Connector Slide Show
You've seen the cones, the giant trucks and the crews, but most of the work underway on the I-5/SR-14 direct HOV connector project isn't visible from the freeway. To get a behind-the-scenes look at what workers are up to, check out this slide show.

Columns, some of which are 120 feet tall, are installed to support overhead bridges.

Mission Village (Newhall Ranch) - I-5 Share Calculations, Austin-Foust Associates, Inc. (March 8, 2011)

AUSTIN-FOUST ASSOCIATES, INC.
TRAFFIC ENGINEERING AND TRANSPORTATION PLANNING

MEMORANDUM

TO: Mark Subbotin, Newhall Land

FROM: Daryl Zerfass, P.E.

DATE: March 8, 2011

SUBJECT: **MISSION VILLAGE (NEWHALL RANCH) I-5 SHARE CALCULATIONS**

Traffic shares for the Mission Village project (part of the Newhall Ranch Specific Plan area) have been calculated using a methodology provided by Caltrans[1] for the purpose of calculating the project's share of the unfunded portion of the planned I-5 HOV and Truck Lane Project from SR-14 to Parker Road. The procedure is as follows:

Step 1: Calculating the Number of Vehicle Trips

a) Prepare a Select-Zone assignment for the traffic analysis zone(s) representing the project site. From this, identify the total volume of project traffic on the subject roadway link(s). [example: 1,000 project vehicles total]

b) Prepare a full assignment model run with the project traffic, and a second full assignment model run without the project traffic. From this, identify the net change in traffic volume on the subject roadway link(s) that is due to the project. [example: 200 project vehicles total]

c) Determine the number of project trips subject to the fair-share mitigation cost based on the following "Full-Trip" and "1/2 Trip" allocation method:

i) The net change in traffic volume due to the project (from Step 1b) represents the number of trips fully attributable to the project. [example: 200 trips]

ii) The total volume of project traffic (from Step 1a) minus the trips fully attributable to the project (from Step 1b) represents the number of trips that are 1/2 attributable to the project, and 1/2 attributable to the non-project end of the trip. [example: (1,000 - 200)/2 = 400 trips]

iii) The total number of project trips that are subject to the fair-share mitigation cost is the sum of the fully

[1] Per the October 12, 2010 conference call between Austin-Foust Associates, Inc. (Daryl Zerfass), Caltrans (Marc Birnbaum, Jonathan Osborn, David Sosa, and Elmer Alvarez), and Newhall Land (Mark Subbotin), and confirmed through an email with Marc Birnbaum on October 13, 2010.

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attributable trips (from Step 1ci) and 1/2 attributable trips (from Step 1cii). [example: 200 + 400 = 600 trips]

Step 2: Calculating the Mitigation Measure's Cost per Trip

a) Determine the amount of future traffic on the subject roadway link(s) by subtracting existing traffic volumes from the total future volume. [example: 10,000 - 7,000 = 3,000 trips]

b) Determine the cost of the highway improvement project (mitigation measure) on a per trip basis by dividing the improvement project cost by the total amount of future traffic on the subject roadway link(s) (from Step 2a). [example: $300,000/3,000 trips = $100/trip]

Step 3: Calculating the Project's Fair-Share Cost

a) Determine the project's fair-share cost of the highway improvement project (mitigation measure) by multiplying the number of project trips on the subject roadway link(s) (from Step 1ciii) by the cost per trip (from Step 2b). [example: 600 x $100 = $60,000]

The calculations for the Mission Village project are shown in the attached Table 1. The calculations show that for the I-5 freeway, the cost per future trip is $918.54, and that Mission Village is responsible for 1,047 trips within the limits of the planned I-5 HOV and Truck Lane Project from SR-14 to Parker Road. Newhall Land has already contributed $4,400,000 to fund the Project Approval/Environmental Document (PA/ED) and the construction documents (PS&E) for the I-5 project, and Mission Village's share of that expenditure has been prorated as $501,375 based on the project's amount of traffic generation. Therefore, the Mission Village net share of the project cost is $460,336 ($918.54 X 1,047 - $501,375), as shown in Table 1.

Enclosure

Table 1: I-5 Freeway Mitigation Share Calculations for Mission Village

	PM Peak Hour Traffic Volumes					
Location	**Total Project Volumes[1]**	**Net Change due to Project[2]**	**Project Trips Subject to Mitigation Cost[3]**	**Existing Volumes (2010)**	**Total Future Volumes (2035)**	**Net Increase (Net Future Trips)**
1. I-5 btwn Parker & Hasley Cyn	167	49	108	5,500	17,000	11,500
2. I-5 btwn Hasley Cyn & SR-126	158	55	107	7,100	18,600	11,500
3. I-5 btwn SR-126 & Rye Canyon	62	-15	24	8,600	17,200	8,600
4. I-5 btwn Rye Canyon & Magic Mtn	53	1	27	9,800	18,400	8,600
5. I-5 btwn Magic Mtn & Valencia	247	38	143	10,800	18,000	7,200
6. I-5 btwn Valencia & McBean	318	-2	158	12,400	19,300	6,900
7. I-5 btwn McBean & Pico/Lyons	294	31	163	13,000	18,400	5,400
8. I-5 btwn Pico/Lyons & Calgrove	266	60	163	13,300	18,900	5,600
9. I-5 btwn Calgrove & SR-14	257	51	154	13,300	19,200	5,900
Total			***1,047***			***71,200***

Cost of Mitigation Measure (Unfunded Portion):	***$65,400,000.00***
Cost per Future Trip:	***$918.54***
Cost to Mission Village (Gross):	***$961,711.38***
NLF Expenditures for I-5 PA/ED and PS&E:	***$4,400,000.00***
Proportion Credited to Mission Village:	***$501,375.25***
Cost to Mission Village (Net):	***$460,336.13***

[1] Total project volumes obtained from a select-zone model run.
[2] Net change due to project obtained by subtracting a "no-project" model run from a "with-project" model run.
[3] Project Trips subject to mitigation cost = "Net Change due to Project" plus 1/2 of the remainder of total project volumes (2 + (1 – 2)/2).

2010 Volume Source: Mission Village TIA (October 2010)
2035 Volume Source: Revised Mission Village VTTM Model Run (February 2011)

Table 2: Newhall Land Westside Project Summary

Sub-Area/Land Use	Units		ADT
Landmark Village			
Residential	1,444	DU	12,000
Office/Industrial	695	TSF	8,000
Commercial Retail	338	TSF	20,000
Other (Schools, Parks, etc.)	--	--	1,000
Sub-total	--	--	41,000
Mission Village			
Residential	4,055	DU	29,000
Office/Industrial	1,331	TSF	15,000
Commercial Retail	224	TSF	8,000
Other (Schools, Parks, etc.)	--	--	3,000
Sub-total	--	--	55,000
Entrada South			
Residential	1,640	DU	14,000
Office/Industrial	436	TSF	5,000
Commercial Retail	290	TSF	16,000
Other (Schools, Parks, etc.)	--	--	1,000
Sub-total	--	--	36,000
Legacy Village			
Residential	3,457	DU	23,000
Office/Industrial	316	TSF	4,000
Commercial Retail	186	TSF	10,000
Other (Schools, Parks, etc.)	--	--	1,000
Sub-total	--	--	38,000
Homestead			
Residential	5,686	DU	47,000
Office/Industrial	1,275	TSF	13,000
Commercial Retail	55	TSF	5,000
Other (Schools, Parks, etc.)	--	--	9,000
Sub-total	--	--	74,000
Potrero Village			
Residential	9,343	DU	75,000
Office/Industrial	100	TSF	1,000
Commercial Retail	1,257	TSF	50,000
Other (Schools, Parks, etc.)	--	--	1,000
Sub-total	--	--	127,000
Entrada North			
Residential	1,693	DU	14,000
Office/Industrial	629	TSF	7,000
Commercial Retail	1,788	TSF	75,000
Hotel	300	Room	2,000
Sub-total	--	--	98,000
Commerce Center			
Office/Industrial	4,311	TSF	34,000
Commercial Retail	62	TSF	3,000
Sub-total	--	--	37,000
Total			
Residential	27,318	DU	214,000
Office/Industrial	9,093	TSF	87,000
Commercial Retail	4,200	TSF	187,000
Hotel	300	Room	2,000
Other (Schools, Parks, etc.)	--	--	16,000
Total	--	--	506,000

Mission Village Traffic Impact Analysis – Existing Plus Project Scenario,
Austin-Foust Associates, Inc. (March 1, 2011)

AUSTIN-FOUST ASSOCIATES, INC.
TRAFFIC ENGINEERING AND TRANSPORTATION PLANNING

MEMORANDUM

TO: Susan Tebo, Impact Sciences, Inc.

FROM: Daryl Zerfass, P.E.

DATE: March 1, 2011

SUBJECT: **MISSION VILLAGE TRAFFIC IMPACT ANALYSIS – EXISTING PLUS PROJECT SCENARIO**

This memo serves as a supplement to the original Mission Village Traffic Impact Analysis (TIA, October 2010) and provides an analysis of the project's traffic impacts by comparing existing conditions (i.e., Existing No-Project) against the Existing Plus Project traffic. This CEQA impact evaluation approach compares existing conditions against post-project conditions to determine whether thresholds of significance are exceeded. This memo, therefore, documents project related trips and their addition to the observed traffic count data (i.e., existing conditions) to create an Existing Plus Project scenario.

Preliminarily, the Existing Plus Project scenario generally is regarded by traffic engineers, including this engineer, as a hypothetical scenario when used in connection with a long-range development project such as the proposed Mission Village project, which is not anticipated to reach full buildout until approximately 2021. The scenario is hypothetical because it assumes that the proposed project would be fully built out immediately and the corresponding full buildout traffic volumes added to existing roadway volumes and infrastructure. The Existing Plus Project analysis presumes that the existing environment (existing traffic volumes, existing roadway infrastructure, and existing land uses) will not change over the long-term buildout of the project. As a result, future increases in traffic volumes attributable to other development projects (i.e., cumulative traffic volumes) are not accounted for in the analysis. This results in the analysis potentially understating project impacts because capacity that otherwise would be utilized by future development that precedes the proposed project is now available to the project. On the other hand, because the scenario does not account for future planned roadway network improvements that would increase roadway capacities, the analysis potentially results in overstating project impacts. Furthermore, because the analysis does not take into account future development and related changing land uses, the analysis does not account for the corresponding change in trip distribution patterns that accompanies changing land uses.

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Mission Village (Vesting Tentative Tract Map (VTTM) 61105) consists of a portion of the Newhall Ranch Specific Plan area and is located within the Santa Clarita Valley in unincorporated County of Los Angeles. Mission Village (VTTM 61105) consists of a variety of land uses and as described in the traffic study, these land uses have been categorized based on the land use categories used by the SCVCTM and the Institute of Transportation Engineers (ITE) Trip Generation Manual. The SCVCTM is a computerized travel demand model that utilizes a sophisticated trip distribution function to derive the distribution of vehicle trips and which has previously been calibrated to the existing conditions of the Santa Clarita Valley. A special model run utilizing the SCVCTM determined the geographic distribution of project-generated trips independent of any additional future Santa Clarita development.

The conclusions reached through this Existing Plus Project scenario analysis are summarized here. Peak hour ICU values that correspond with the Existing Plus Project conditions traffic forecasts referenced above can be found in Table 1, which provides a comparison between the no-project and the with-project conditions. The table indicates that under Existing Plus Project conditions, the following intersections are significantly impacted by the project:

25. The Old Road & Rye Canyon Road (County)
45. McBean Parkway & Magic Mountain Parkway (City)
48. McBean Parkway & Newhall Ranch Road (City)
66. Bouquet Canyon Road & Newhall Ranch Road (City)
94. Commerce Center Drive & SR-126 (Caltrans/County)

Roadway improvements have been identified to mitigate the project impacts identified above. Table 2 lists the proposed mitigation measures for existing conditions with project. Table 3 summarizes the resulting ICUs and LOS with the mitigation in place. Detailed ICU worksheets are provided at the end of this memo.

In addition to an intersection level of analysis, an evaluation of the I-5 freeway for conditions with and without the project was conducted. As stated in the Project's TIA, the Mission Village project is located approximately 1.25 miles west of I-5, and approximately 0.5 miles south of SR-126. In the vicinity of the project site, I-5 is generally an eight-lane (four lanes in each direction) freeway.

As stated in the Project's TIA, the freeway impact analysis has been prepared using a methodology developed through consultation with Caltrans District 7 staff. The determination of significant impacts is based on the Los Angeles County Congestion Management Program (CMP) criteria. This criteria identifies a significant project impact as when project traffic causes or worsens LOS F conditions by a V/C of .02 or more.

At the I-5/SR-14 interchange, Caltrans is currently constructing the I-5/SR-14 Direct HOV Connector project. This project involves the construction of an elevated two-lane direct HOV connector at the I-5 and SR-14 interchange and construction of HOV lanes in the north- and southbound directions of I-5 south of the interchange, which will address the existing deficiency south of SR-14.

An evaluation of the I-5 freeway for conditions with and without the project is provided in Table 4. Since the aforementioned I-5/SR-14 Direct HOV Connector project is currently under construction and scheduled to be completed in next few years (i.e., prior to the buildout of the Mission Village project), the analysis evaluates conditions both with and without the HOV Connector Project in place.

Table 1: ICU and LOS Summary – Existing Conditions with and without Project

	Existing Conditions without Project				Existing Conditions with Project				Project Increment	
	AM		PM		AM		PM			
Intersection	**ICU**	**LOS**	**ICU**	**LOS**	**ICU**	**LOS**	**ICU**	**LOS**	**AM**	**PM**
Freeway Ramp Intersections (County)										
7. I-5 SB Ramps & Henry Mayo Drive (SR-126)	.71	C	.43	A	.68	B	.42	A	-.03	-.01
9. The Old Road & I-5 SB Ramps	.72	C	.91	E	.72	C	.91	E	.00	.00
10. I-5 SB Ramps & Magic Mountain Parkway	.36	A	.37	A	.52	A	.48	A	.16	.11
12. I-5 SB Ramps & Valencia Boulevard	.52	A	.46	A	.61	B	.61	B	.09	.15
14. I-5 SB Ramps & McBean Parkway	.38	A	.50	A	.38	A	.51	A	.00	.01
16. I-5 SB/Marriott & Pico Canyon Road/Lyons Avenue	.58	A	.59	A	.59	A	.62	B	.01	.03
Freeway Ramp Intersections (City)										
8. I-5 NB Ramps & Henry Mayo Drive (SR-126)	.66	B	.68	B	.66	B	.68	B	.00	.00
11. I-5 NB Ramps & Magic Mountain Parkway	.42	A	.42	A	.60	A	.49	A	.18	.07
13. I-5 NB Ramps & Valencia Boulevard	.59	A	.49	A	.61	B	.52	A	.02	.03
15. I-5 NB Ramps & McBean Parkway	.43	A	.48	A	.44	A	.52	A	.01	.04
17. I-5 NB On/Off & Lyons Avenue	.53	A	.66	B	.55	A	.68	B	.02	.02
County Arterial Intersections										
25. The Old Road & Rye Canyon	.61	B	.66	B	.62	B	.82	D	.01	**.16**
26. The Old Road & Magic Mountain Parkway	.28	A	.32	A	.66	B	.43	A	.38	.11
27. The Old Road & Valencia Boulevard	.67	B	.44	A	.72	C	.60	A	.05	.16
28. The Old Road & McBean Parkway	.58	A	.76	C	.72	C	.79	C	.14	.03
29. The Old Road & Pico Canyon Road	.63	B	.71	C	.62	B	.72	C	-.01	.01
94. Commerce Center Drive & SR-126	.54	A	.78	C	.86	D	.90	D	**.32**	**.12**
105. Westridge Parkway & Valencia Boulevard	.55	A	.20	A	.73	C	.67	B	.18	.47
108. Stevenson Ranch Parkway & Pico Canyon Road	.49	A	.51	A	.49	A	.51	A	.00	.00
109. Stevenson Ranch Parkway & Poe Parkway/Chase	.63	B	.39	A	.65	B	.40	A	.02	.01

(Continued)

Table 1: ICU and LOS Summary – Existing Conditions with and without Project (Continued)

	Existing Conditions without Project				Existing Conditions with Project				Project Increment	
	AM		PM		AM		PM			
Intersection	**ICU**	**LOS**	**ICU**	**LOS**	**ICU**	**LOS**	**ICU**	**LOS**	**AM**	**PM**
City Arterial Intersections										
30. Avenue Stanford & Rye Canyon Road	.51	A	.54	A	.54	A	.61	B	.03	.07
33. Copper Hill Drive & Newhall Ranch Road	.63	B	.70	B	.65	B	.74	C	.02	.04
35. Copper Hill Drive & Decoro Drive	.57	A	.51	A	.59	A	.53	A	.02	.02
36. Tourney Road & Valencia Boulevard	.45	A	.48	A	.47	A	.49	A	.02	.01
37. Tourney Road & Magic Mountain Parkway	.49	A	.45	A	.54	A	.55	A	.05	.10
44. McBean Parkway & Valencia Boulevard	.61	B	.74	C	.62	B	.75	C	.01	.01
45. McBean Parkway & Magic Mountain Parkway	.61	B	.76	C	.71	C	.81	D	.10	**.05**
48. McBean Parkway & Newhall Ranch Road	.73	C	.78	C	.76	C	.85	D	.03	**.07**
49. McBean Parkway & Decoro Drive	.77	C	.54	A	.78	C	.56	A	.01	.02
51. Wiley Canyon Road & Lyons Avenue	.60	A	.69	B	.62	B	.72	C	.02	.03
54. Orchard Village Road & Wiley Canyon Road	.60	A	.62	B	.61	B	.64	B	.01	.02
55. Orchard Village Road & McBean Parkway	.57	A	.68	B	.59	A	.70	B	.02	.02
57. Valencia Boulevard & Magic Mountain Parkway	.58	A	.66	B	.62	B	.70	B	.04	.04
65. Bouquet Canyon Road & Soledad Canyon Road	.68	B	.77	C	.71	C	.77	C	.03	.00
66. Bouquet Canyon Road & Newhall Ranch Road	.66	B	.82	D	.69	B	.84	D	.03	**.02**

Bold = Significant Impact

Level of service ranges:					
	.00 - .60	A	.71 - .80	C	.91 – 1.00	E
	.61 - .70	B	.81 - .90	D	Above 1.00	F

Table 2: Mitigation Measures for Project Intersection Impacts – Existing Conditions With Project

Location	Jurisdiction	Mitigation
25. The Old Road & Rye Canyon Road	County	Add a 2nd northbound through lane and a 2nd southbound left-turn lane. Convert the northbound and westbound free-flow right-turn lanes to conventional right-turn lanes with overlap phasing.
45. McBean Parkway & Magic Mountain Parkway	City	Add right-turn overlap phase for the westbound right-turn lane.
48. McBean Parkway & Newhall Ranch Road	City	Reconstruct the northbound approach to reconfigure as a free right-turn lane.
66. Bouquet Canyon Road & Newhall Ranch Road	City	Add right-turn overlap phase for the westbound right-turn lane.
94. Commerce Center & SR-126	Caltrans/County	Existing intersection to be replaced by a grade separated interchange. (Project is in the final design stage)

Table 3: ICU and LOS Summary – With Mitigation

	Existing Conditions without Project				Existing Conditions plus Project with Mitigation				Change	
	AM		PM		AM		PM			
Intersection	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	AM	PM
25. The Old Road & Rye Canyon	.61	B	.66	B	.62	B	.67	B	.01	.01
45. McBean Parkway & Magic Mountain Parkway	.61	B	.76	C	.71	C	.79	C	.10	.03
48. McBean Parkway & Newhall Ranch Road	.73	C	.78	C	.76	C	.79	C	.03	.01
66. Bouquet Canyon Road & Newhall Ranch Road	.66	B	.82	D	.69	B	.81	D	.03	-.01
94. Commerce Center & SR-126	.54	A	.78	C	n/a (Grade Separated Interchange)					

Level of service ranges: .00 - .60 A; .61 - .70 B; .71 - .80 C; .81 - .90 D; .91 – 1.00 E; Above 1.00 F

Table 4: Freeway Volumes and V/C Ratios – Existing + Project Conditions

			Existing Without Project				Existing With Project				Project Increment	
			AM Pk Hr		PM Pk Hr		AM Pk Hr		PM Pk Hr			
Segment	**Lanes**	**Capacity**	**Vol**	**V/C**	**Vol**	**V/C**	**Vol**	**V/C**	**Vol**	**V/C**	**AM**	**PM**
Northbound												
401. North of Lake Hughes	4M	8,000	1,300	.16	2,200	.28	1,314	.16	2,241	.28	.00	.00
402. Between Lake Hughes & Parker	4M	8,000	1,400	.18	2,500	.31	1,418	.18	2,567	.32	.00	.01
403. Between Parker & Hasley Canyon	4M	8,000	1,700	.21	3,100	.39	1,731	.22	3,197	.40	.01	.01
404. Between Hasley Canyon & SR-126	4M	8,000	2,300	.29	4,100	.51	2,198	.27	4,196	.52	-.02	.01
405. Between SR-126 & Rye Canyon	4M	8,000	3,200	.40	4,400	.55	2,981	.37	4,388	.55	-.03	.00
406. Between Rye Canyon & Magic Mtn	4M	8,000	3,200	.40	4,400	.55	2,981	.37	4,388	.55	-.03	.00
407. Between Magic Mtn & Valencia	4M	8,000	4,100	.51	5,200	.65	4,177	.52	5,189	.65	.01	.00
408. Between Valencia & McBean	4M	8,000	5,200	.65	6,000	.75	5,522	.69	6,360	.80	.04	.05
409. Between McBean & Pico/Lyons	4M	8,000	5,200	.65	6,300	.79	5,616	.70	6,664	.83	.05	.04
410. Between Pico/Lyons & Calgrove	4M	8,000	5,100	.64	6,800	.85	5,460	.68	7,105	.89	.04	.04
411. Between Calgrove & SR-14	4M	8,000	5,100	.64	6,800	.85	5,428	.68	7,079	.88	.04	.03
412. South of SR-14	6M + 2T (6M + 1H + 2T)	14,400 (16,000)	6,700 (6,700)	.47 (.42)	13,500 (13,500)	.94 (.84)	6,950 (6,950)	.48 (.43)	13,739 (13,739)	.95 (.86)	.01 (.01)	.01 (.02)
Southbound												
401. North of Lake Hughes	4M	8,000	1,400	.18	1,800	.23	1,417	.18	1,835	.23	.00	.00
402. Between Lake Hughes & Parker	4M	8,000	1,700	.21	2,000	.25	1,740	.22	2,047	.26	.01	.01
403. Between Parker & Hasley Canyon	4M	8,000	2,200	.28	2,400	.30	2,200	.28	2,400	.30	.00	.00
404. Between Hasley Canyon & SR-126	4M	8,000	3,100	.39	3,000	.38	3,200	.40	3,062	.38	.01	.00
405. Between SR-126 & Rye Canyon	4M	8,000	3,500	.44	4,200	.53	3,493	.44	4,134	.52	.00	-.01
406. Between Rye Canyon & Magic Mtn	4M	8,000	4,400	.55	5,400	.68	4,395	.55	5,345	.67	.00	-.01
407. Between Magic Mtn & Valencia	4M	8,000	4,600	.58	5,600	.70	4,641	.58	5,549	.69	.00	-.01
408. Between Valencia & McBean	4M	8,000	5,600	.70	6,400	.80	5,977	.75	6,935	.87	.05	.07
409. Between McBean & Pico/Lyons	4M	8,000	6,200	.78	6,700	.84	6,577	.82	7,217	.90	.04	.06
410. Between Pico/Lyons & Calgrove	4M	8,000	6,700	.84	6,500	.81	7,011	.88	6,922	.87	.04	.06
411. Between Calgrove & SR-14	4M*	6,400	6,900	1.08	6,500	1.02	7,184	1.12	6,891	1.08	**.04**	**.06**
412. South of SR-14	5M + 2T (6M + 1H + 2T)	12,400 (16,000)	13,900 (13,900)	1.12 (.87)	9,300 (9,300)	.75 (.58)	14,157 (14,157)	1.14 (.88)	9,560 (9,560)	.77 (.60)	**.02** (.01)	.02 (.02)

M = Mixed-Flow/General Purpose Lane (Capacity = 2,000 vehicles per hour)
M* = Mixed-Flow Lane on an Extended Uphill Grade, Without a Truck Lane (Capacity = 1,600 vehicles per hour)
T = Truck Lane (Capacity = 1,200 vehicles per hour)
H = HOV Lane (Capacity = 1,600 vehicles per hour)
() = Currently under construction
Bold = Significant impact
Capacities derived from PeMS data and through discussions with Caltrans staff.

The previously referenced Table 4 indicates that under existing plus project conditions, the following freeway segment is significantly impacted by the project:

411. Southbound I-5 between Calgrove & SR-14

South of the SR-14 interchange, significant project impacts do not occur with the completion of the HOV connector project that is currently under construction. Although extremely unlikely in light of the fact that the improvement project is already partially completed, in the event the Direct HOV Connector project were not completed, under the existing plus project scenario, the proposed project would result in significant impacts on I-5 south of the SR-14 interchange south to the I-210 interchange.

Freeway improvements have been identified to mitigate the project impact identified above and are listed in Table 5. Table 6 summarizes the resulting V/C with the mitigation in place. This freeway mitigation is based on the Caltrans and the Metropolitan Transportation Authority (Metro) plans which expand the I-5 freeway to include HOV and truck lanes. In September 2009, Caltrans approved a Final Environmental Impact Report/Environmental Assessment for the I-5 HOV/Truck Lanes Project SR-14 to Parker Road. The project will add: one HOV lane in each direction on I-5 from the SR-14 interchange north to Parker Road; truck climbing lanes in each direction from the SR-14 interchange to Calgrove Boulevard (northbound) and Pico Canyon Road/Lyons Avenue (southbound); and full auxiliary lanes within portions of the Project study area. The Caltrans EIR/EIS reports the project is included in the 2008 Regional Transportation Plan and is fully funded, and construction is anticipated to begin in 2011, with completion scheduled for 2015. Subsequent communications with Caltrans indicate that the first phase of construction, or Early Implementation Project, is estimated to be completed in July, 2013, and the full project is estimated to be completed in February, 2016. The project's impacts under existing plus project conditions are mitigated by the Early Implementation Project which will include a truck lane in the southbound direction from Pico/Lyons to the SR-14.

Under Existing Plus Project conditions, the project adds a greater volume of project traffic to the I-5 freeway than it will under long-range conditions when the Newhall Ranch Specific Plan area (and adjacent development areas) is fully built out. The built out Specific Plan area results in a significant amount of employment and commercial retail development that will provide trip destinations for residents of the Mission Village project. Likewise, the employment and commercial retail areas of Mission Village will provide trip destinations for future residents of the Specific Plan area. As such, the build out conditions result in fewer project trips that leave the Santa Clarita Valley, which translates to fewer project trips on the I-5 freeway. Project freeway impacts under buildout conditions were addressed in the Project's TIA, which determined that no freeway segments are significantly impacted by the project.

Table 5: Mitigation Measures for Project Freeway Impacts – Existing Conditions With Project

Location	Mitigation
411. Between Calgrove & SR-14	Add 1 Truck lane in southbound direction.

Table 6: Freeway Volumes and V/C Ratios – Existing + Project + Mitigation Conditions

			Existing Without Project				Existing With Project				Project Increment	
			AM Pk Hr		PM Pk Hr		AM Pk Hr		PM Pk Hr			
Segment	Lanes	Capacity	Vol	V/C	Vol	V/C	Vol	V/C	Vol	V/C	AM	PM
Southbound												
411. Between Calgrove & SR-14	4M + 1T	9,200	6,900	1.08	6,500	1.02	7,184	.78	6,891	.75	-.30	-.27

M = Mixed-Flow/General Purpose Lane (Capacity = 2,000 vehicles per hour)
T = Truck Lane (Capacity = 1,200 vehicles per hour)
Capacities derived from PeMS data and through discussions with Caltrans staff.

7. I-5 SB Ramps & Henry Mayo (SR-126)

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	574	.20*	378	.13*
SBT	0	0	0		0	
SBR	2	3200	134	.04	114	.04
EBL	0	0	0		0	
EBT	4	6400	441	.07	901	.14
EBR	f		606		1197	
WBL	0	0	0		0	
WBT	3	4800	1973	.41*	941	.20*
WBR	f		483		663	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .71 .43

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	574	.20*	378	.13*
SBT	0	0	0		0	
SBR	2	3200	134	.04	114	.04
EBL	0	0	0		0	
EBT	4	6400	443	.07	903	.14
EBR	f		602		1135	
WBL	0	0	0		0	
WBT	3	4800	1803	.38*	930	.19*
WBR	f		483		663	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .68 .42

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	574	.20*	378	.13*
SBT	0	0	0		0	
SBR	2	3200	238	.07	179	.06
EBL	0	0	0		0	
EBT	4	6400	479	.07	1002	.16
EBR	f		602		1135	
WBL	0	0	0		0	
WBT	3	4800	1806	.38*	935	.19*
WBR	f		483		663	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .68 .42

8. I-5 NB Ramps & Henry Mayo (SR-126)

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	3	5250	1248	.24*	597	.11*
NBT	0	0	0		0	
NBR	1	1750	709	.41	729	.42
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	4	7000	881	.13	1056	.15
EBR	f		127		185	
WBL	0	0	0		0	
WBT	3	5250	1208	.23*	919	.18*
WBR	f		331		597	
Right Turn Adjustment			NBR	.09*	NBR	.29*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.66**		**.68**

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	3	5250	1159	.22*	586	.11*
NBT	0	0	0		0	
NBR	1	1750	710	.41	729	.42
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	4	7000	883	.13	1058	.15
EBR	f		127		185	
WBL	0	0	0		0	
WBT	3	5250	1126	.21*	919	.18*
WBR	f		331		597	
Right Turn Adjustment			NBR	.13*	NBR	.29*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.66**		**.68**

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	3	5250	1159	.22*	586	.11*
NBT	0	0	0		0	
NBR	1	1750	710	.41	729	.42
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	4	7000	888	.13	1060	.15
EBR	f		158		282	
WBL	0	0	0		0	
WBT	3	5250	1129	.22*	924	.18*
WBR	f		331		597	
Right Turn Adjustment			NBR	.12*	NBR	.29*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.66**		**.68**

9. The Old Rd & I-5 SB Ramps

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	44	.03	16	.01
NBT	2	3200	407	.13*	329	.10*
NBR	1	1600	887	.55	1177	.74
SBL	1	1600	103	.06*	111	.07*
SBT	2	3200	372	.12	439	.14
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1.5		107		64	
WBT	0	3200	0	.04*	0	.02*
WBR	0.5		7		1	
Right Turn Adjustment			NBR	.39*	NBR	.62*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.72**		**.91**

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	44	.03	16	.01
NBT	2	3200	220	.07*	299	.09*
NBR	1	1600	887	.55	1190	.74
SBL	1	1600	103	.06*	111	.07*
SBT	2	3200	302	.09	355	.11
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1.5		104		64	
WBT	0	3200	0	.03*	0	.02*
WBR	0.5		7		1	
Right Turn Adjustment			NBR	.46*	NBR	.63*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.72**		**.91**

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	44	.03	16	.01
NBT	2	3200	221	.07*	300	.09*
NBR	1	1600	887	.55	1190	.74
SBL	1	1600	103	.06*	111	.07*
SBT	2	3200	302	.09	356	.11
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1.5		104		64	
WBT	0	3200	0	.03*	0	.02*
WBR	0.5		7		1	
Right Turn Adjustment			NBR	.46*	NBR	.63*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.72**		**.91**

10. I-5 SB Ramps & Magic Mtn

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		294		253	
SBT	0.5	3200	0	.09*	6	.08*
SBR	2	3200	28	.01	39	.01
EBL	0	0	0		0	
EBT	3	4800	154	.03	356	.07*
EBR	2	3200	45	.01	119	.04
WBL	2	2880	414	.14	350	.12*
WBT	4	6400	1076	.17*	823	.13
WBR	0	0	0		0	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .36 .37

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		294		253	
SBT	0.5	3200	0	.09*	6	.08*
SBR	2	3200	28	.01	39	.01
EBL	0	0	0		0	
EBT	3	4800	157	.03	354	.07*
EBR	2	3200	45	.01	119	.04
WBL	2	2880	364	.13	354	.12*
WBT	4	6400	1207	.19*	824	.13
WBR	0	0	0		0	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .38 .37

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		294		253	
SBT	0.5	3200	0	.09*	6	.08*
SBR	2	3200	28	.01	39	.01
EBL	0	0	0		0	
EBT	3	4800	469	.10	857	.18*
EBR	2	3200	142	.04	119	.04
WBL	2	2880	364	.13	354	.12*
WBT	4	6400	2091	.33*	1243	.19
WBR	0	0	0		0	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .52 .48

11. I-5 NB Ramps & Magic Mtn

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	786	.22*	603	.17
NBT	0.5	3500	0	.11	1	{.18}*
NBR	1.5		399		664	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	2	3500	17	.00	46	.01*
EBT	3	5250	396	.08	544	.10
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3.5	8750	698	.10*	599	.11*
WBR	1.5		206	{.04}	444	.13
Right Turn Adjustment					WBR	.02*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.42**		**.42**

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	803	.23*	603	.17
NBT	0.5	3500	0	{.10}	1	{.18}*
NBR	1.5		394		664	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	2	3500	17	.00	46	.01*
EBT	3	5250	399	.08	542	.10
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3.5	8750	761	.11*	603	.11*
WBR	1.5		206	{.03}	444	.13
Right Turn Adjustment					WBR	.02*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.44**		**.42**

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	1088	.31*	603	.17
NBT	0.5	3500	0	{.09}	1	.19*
NBR	1.5		394		664	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	2	3500	17	.00	46	.01
EBT	3	5250	711	.14	1045	.20*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3.5	8750	1359	.19*	1022	.17
WBR	1.5		206		444	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.60**		**.49**

12. I-5 SB Ramps & Valencia

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	237	.08*	136	.05*
SBT	0	0	0		0	
SBR	1	1600	258	.16	71	.04
EBL	0	0	0		0	
EBT	3	4800	789	.16	515	.11
EBR	f		447		118	
WBL	0	0	0		0	
WBT	2	3200	819	.26*	997	.31*
WBR	f		877		945	
Right Turn Adjustment			SBR	.08*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.52**		**.46**

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	235	.08*	136	.05*
SBT	0	0	0		0	
SBR	1	1600	254	.16	20	.01
EBL	0	0	0		0	
EBT	3	4800	784	.16	510	.11
EBR	f		447		118	
WBL	0	0	0		0	
WBT	2	3200	873	.27*	997	.31*
WBR	f		927		965	
Right Turn Adjustment			SBR	.08*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.53**		**.46**

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	235	.08*	136	.05*
SBT	0	0	0		0	
SBR	1	1600	254	.16	20	.01
EBL	0	0	0		0	
EBT	3	4800	866	.18	672	.14
EBR	f		727		634	
WBL	0	0	0		0	
WBT	2	3200	1118	.35*	1459	.46*
WBR	f		927		965	
Right Turn Adjustment			SBR	.08*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.61**		**.61**

13. I-5 NB Ramps & Valencia

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	368	.11*	226	.06*
NBT	0	0	0		0	
NBR	2	3500	1011	.29	794	.23
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5250	833	.19*	733	.15
EBR	0	0	183		77	
WBL	2	3500	111	.03*	119	.03
WBT	4	7000	1357	.19	1490	.21*
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.16*	NBR	.12*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.59**		**.49**

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	368	.11*	226	.06*
NBT	0	0	0		0	
NBR	2	3500	1044	.30	794	.23
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5250	831	.19*	733	.15
EBR	0	0	179		71	
WBL	2	3500	59	.02*	118	.03
WBT	4	7000	1461	.21	1509	.22*
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.17*	NBR	.12*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.59**		**.50**

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	522	.15*	592	.17*
NBT	0	0	0		0	
NBR	2	3500	1044	.30	794	.23
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5250	913	.21*	895	.18
EBR	0	0	179		71	
WBL	2	3500	59	.02*	118	.03
WBT	4	7000	1552	.22	1606	.23*
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.13*	NBR	.02*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.61**		**.52**

14. I-5 SB Ramps & McBean

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1600	163	.10*	155	.10*
SBT	0	0	0		0	
SBR	1	1600	151	.09	169	.11
EBL	0	0	0		0	
EBT	2	3200	569	.18*	861	.27
EBR	1	1600	347	.22	142	.09
WBL	0	0	0		0	
WBT	2	3200	464	.15	915	.29*
WBR	1	1600	451	.28	490	.31
Right Turn Adjustment					SBR	.01*
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for WBR

TOTAL CAPACITY UTILIZATION .38 .50

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1600	163	.10*	155	.10*
SBT	0	0	0		0	
SBR	1	1600	151	.09	153	.10
EBL	0	0	0		0	
EBT	2	3200	473	.15	856	.27
EBR	1	1600	348	.22	142	.09
WBL	0	0	0		0	
WBT	2	3200	464	.15*	915	.29*
WBR	1	1600	451	.28	459	.29
Right Turn Adjustment			WBR	.03*		
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for WBR

TOTAL CAPACITY UTILIZATION .38 .49

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1600	163	.10*	155	.10*
SBT	0	0	0		0	
SBR	1	1600	151	.09	153	.10
EBL	0	0	0		0	
EBT	2	3200	534	.17	1001	.31
EBR	1	1600	348	.22	142	.09
WBL	0	0	0		0	
WBT	2	3200	582	.18*	979	.31*
WBR	1	1600	451	.28	459	.29
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for WBR

TOTAL CAPACITY UTILIZATION .38 .51

15. I-5 NB Ramps & McBean

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	85	.02*	205	.06*
NBT	0	0	0		0	
NBR	2	3500	536	.15	456	.13
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3500	619	.18	858	.25
EBR	1	1750	203	.12	207	.12
WBL	0	0	0		0	
WBT	3	5250	870	.20*	1124	.25*
WBR	0	0	185		165	
Right Turn Adjustment			NBR	.11*	NBR	.07*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .43 .48

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	85	.02*	205	.06*
NBT	0	0	0		0	
NBR	2	3500	507	.14	456	.13
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3500	619	.18	859	.25*
EBR	1	1750	107	.06	201	.11
WBL	0	0	0		0	
WBT	3	5250	870	.20*	1093	.24
WBR	0	0	159		165	
Right Turn Adjustment			NBR	.10*	NBR	.07*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .42 .48

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	85	.02*	205	.06*
NBT	0	0	0		0	
NBR	2	3500	507	.14	456	.13
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3500	680	.19	1004	.29*
EBR	1	1750	107	.06	201	.11
WBL	0	0	0		0	
WBT	3	5250	988	.22*	1157	.25
WBR	0	0	159		165	
Right Turn Adjustment			NBR	.10*	NBR	.07*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .44 .52

16. I-5 SB/Marriott & Pico/Lyons

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	1	1600	73	.05	87	.05
SBL	1.5		369		397	
SBT	0.5	3200	82	.14*	95	.15*
SBR	1	1600	33	.02	113	.07
EBL	0	0	0		0	
EBT	2	3200	843	.28*	872	.28
EBR	0	0	54		39	
WBL	1	1600	51	.03*	57	.04
WBT	2	3200	517	.16	1075	.34*
WBR	1	1600	359	.22	276	.17
Right Turn Adjustment			NBR	.03*		
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .58 .59

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	1	1600	73	.05	87	.05
SBL	1.5		369		396	
SBT	0.5	3200	82	.14*	97	.15*
SBR	1	1600	33	.02	111	.07
EBL	0	0	0		0	
EBT	2	3200	795	.27*	872	.28
EBR	0	0	54		39	
WBL	1	1600	51	.03*	57	.04
WBT	2	3200	517	.16	1075	.34*
WBR	1	1600	359	.22	276	.17
Right Turn Adjustment			NBR	.03*		
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .57 .59

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	1	1600	73	.05	87	.05
SBL	1.5		425		477	
SBT	0.5	3200	94	.16*	97	.18*
SBR	1	1600	33	.02	125	.08
EBL	0	0	0		0	
EBT	2	3200	795	.27*	872	.28
EBR	0	0	54		39	
WBL	1	1600	51	.03*	57	.04
WBT	2	3200	517	.16	1075	.34*
WBR	1	1600	359	.22	276	.17
Right Turn Adjustment			NBR	.03*		
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .59 .62

17. I-5 NB On/Off & Lyons Ave

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		240	{.07}*	567	{.16}*
NBT	0.5	3500	0	.07	2	.16
NBR	f		302		546	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1750	158	.09*	244	.14*
EBT	2	3500	682	.19	1192	.34
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	5250	730	.21*	1023	.26*
WBR	0	0	471	.27	366	
Right Turn Adjustment			WBR	.06*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.53**		**.66**

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		240	{.07}*	567	{.16}*
NBT	0.5	3500	0	.07	2	.16
NBR	f		298		546	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1750	131	.07*	244	.14*
EBT	2	3500	680	.19	1191	.34
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	5250	729	.21*	1021	.26*
WBR	0	0	465	.27	366	
Right Turn Adjustment			WBR	.06*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.51**		**.66**

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		240	{.07}*	567	{.16}*
NBT	0.5	3500	0	.07	2	.16
NBR	f		298		546	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1750	131	.07*	244	.14*
EBT	2	3500	728	.21	1272	.36
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	5250	729	.21*	1021	.28*
WBR	0	0	546	.31	429	
Right Turn Adjustment			WBR	.10*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.55**		**.68**

25. The Old Rd & Rye Canyon

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	311	.19*	268	.17*
NBR	f		1026		818	
SBL	1	1600	261	.16*	243	.15*
SBT	2	3200	189	.06	267	.08
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	252	.16*	378	.24*
WBT	0	0	0		0	
WBR	f		990		1231	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .61 .66

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	121	.08*	238	.15*
NBR	f		1035		818	
SBL	1	1600	258	.16*	243	.15*
SBT	2	3200	119	.04	184	.06
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	252	.16*	377	.24*
WBT	0	0	0		0	
WBR	f		990		1244	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .50 .64

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	124	.08*	249	.16*
NBR	f		1387		1098	
SBL	1	1600	258	.16*	243	.15*
SBT	2	3200	119	.04	193	.06
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	447	.28*	660	.41*
WBT	0	0	0		0	
WBR	f		990		1244	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .62 .82

Existing Volumes With Project With Mitigation

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	124	.04*	249	.08*
NBR	2	3200	1387	.43	1098	.34
SBL	2	2880	258	.09*	243	.08*
SBT	2	3200	119	.04	193	.06
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	447	.28*	660	.41*
WBT	0	0	0		0	
WBR	2	3200	990	.31	1244	.39
Right Turn Adjustment			NBR	.11*		
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for WBR NBR

TOTAL CAPACITY UTILIZATION .62 .67

26. The Old Rd & Magic Mountain

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	2880	17	.01	16	.01
NBT	3	4800	411	.09*	451	.09*
NBR	1	1600	70	.04	184	.12
SBL	2	2880	143	.05*	215	.07*
SBT	3	4800	287	.06	414	.09
SBR	1	1600	2	.00	1	.00
EBL	2	2880	26	.01	20	.01
EBT	4	6400	21	.00*	51	.01*
EBR	1	1600	4	.00	9	.01
WBL	2	2880	123	.04*	151	.05*
WBT	4	6400	17	.00	9	.00
WBR	f		976		797	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .28 .32

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	2880	233	.08*	30	.01
NBT	3	4800	349	.07	444	.09*
NBR	1	1600	70	.04	184	.12
SBL	2	2880	92	.03	171	.06*
SBT	3	4800	276	.06*	392	.08
SBR	1	1600	-4	.00	-14	{.01}
EBL	2	2880	19	.01*	5	.00
EBT	4	6400	74	.01	93	.01*
EBR	1	1600	16	.01	77	.05
WBL	2	2880	123	.04	151	.05*
WBT	4	6400	257	.04*	17	.00
WBR	f		866		790	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .29 .31

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	2880	535	.19*	65	.02
NBT	3	4800	349	.07	444	.09*
NBR	1	1600	70	.04	184	.12
SBL	2	2880	92	.03	171	.06*
SBT	3	4800	276	.06*	392	.08
SBR	1	1600	194	.12	285	.18
EBL	2	2880	382	.13*	303	.11*
EBT	4	6400	483	.08	596	.09
EBR	1	1600	49	.03	119	.07
WBL	2	2880	123	.04	151	.05
WBT	4	6400	1141	.18*	436	.07*
WBR	f		866		790	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .66 .43

27. The Old Rd & Valencia

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	2880	668	.23*	96	.03
NBT	3	4800	257	.05	497	.10*
NBR	1	1600	107	.07	247	.15
SBL	2	2880	121	.04	201	.07*
SBT	3	4800	157	.03*	422	.09
SBR	1	1600	233	.15	93	.06
EBL	2	2880	312	.11*	77	.03
EBT	4	6400	886	.14	209	.03*
EBR	1	1600	542	.34	61	.04
WBL	2	2880	107	.04	395	.14*
WBT	3	4800	756	.16*	248	.05
WBR	f		137		330	
Right Turn Adjustment			SBR	.04*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.67**		**.44**

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	2880	668	.23*	96	.03
NBT	3	4800	383	.08	504	.11*
NBR	1	1600	106	.07	244	.15
SBL	2	2880	121	.04	201	.07*
SBT	3	4800	157	.03*	468	.10
SBR	1	1600	233	.15	91	.06
EBL	2	2880	288	.10*	77	.03
EBT	4	6400	883	.14	205	.03*
EBR	1	1600	542	.34	61	.04
WBL	2	2880	106	.04	366	.13*
WBT	3	4800	754	.16*	229	.05
WBR	f		188		330	
Right Turn Adjustment			SBR	.04*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.66**		**.44**

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	2880	762	.26*	287	.10*
NBT	3	4800	584	.12	504	.11
NBR	1	1600	106	.07	244	.15
SBL	2	2880	121	.04	201	.07
SBT	3	4800	157	.03*	468	.10*
SBR	1	1600	237	.15	91	.06
EBL	2	2880	288	.10*	77	.03
EBT	4	6400	1245	.19	883	.14*
EBR	1	1600	682	.43	392	.25
WBL	2	2880	106	.04	366	.13*
WBT	3	4800	929	.19*	691	.14
WBR	f		258		330	
Right Turn Adjustment			SBR	.04*	EBR	.03*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.72**		**.60**

28. The Old Rd & McBean

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	63	.04*	232	.15*
NBT	3	4800	326	.07	546	.11
NBR	1	1600	103	.06	632	.40
SBL	1	1600	67	.04	79	.05
SBT	2	3200	458	.14*	589	.18*
SBR	1	1600	369	.23	278	.17
EBL	2	2880	614	.21*	197	.07
EBT	3	4800	616	.13	369	.08*
EBR	1	1600	184	.12	136	.09
WBL	2	2880	337	.12	720	.25*
WBT	2	3200	216	.09*	568	.20
WBR	0	0	73		68	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.58**		**.76**

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	63	.04*	232	.15*
NBT	3	4800	355	.07	547	.11
NBR	1	1600	103	.06	629	.39
SBL	1	1600	67	.04	79	.05
SBT	2	3200	458	.14*	590	.18*
SBR	1	1600	369	.23	295	.18
EBL	2	2880	708	.25*	200	.07
EBT	3	4800	522	.11	366	.08*
EBR	1	1600	184	.12	136	.09
WBL	2	2880	337	.12	722	.25*
WBT	2	3200	216	.09*	552	.19
WBR	0	0	73		68	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.62**		**.76**

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	63	.04*	232	.15*
NBT	3	4800	416	.09	642	.13
NBR	1	1600	103	.06	629	.39
SBL	1	1600	128	.08	224	.14
SBT	2	3200	496	.16*	686	.21*
SBR	1	1600	409	.26	387	.24
EBL	2	2880	824	.29*	232	.08
EBT	3	4800	522	.11	366	.08*
EBR	1	1600	184	.12	136	.09
WBL	2	2880	337	.12	722	.25*
WBT	2	3200	216	.13*	552	.21
WBR	0	0	191		132	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.72**		**.79**

29. The Old Rd & Pico Canyon

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	86	.05	170	.11
NBT	2	3200	338	.13*	411	.15*
NBR	0	0	80		64	
SBL	2	2880	341	.12*	543	.19*
SBT	2	3200	520	.17	304	.11
SBR	0	0	28		54	
EBL	1	1600	69	.04	48	.03*
EBT	2	3200	760	.24*	431	.13
EBR	1	1600	86	.05	30	.02
WBL	1	1600	67	.04*	49	.03
WBT	2	3200	349	.11	753	.24*
WBR	f		391		778	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .63 .71

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	86	.05	170	.11
NBT	2	3200	344	.13*	411	.15*
NBR	0	0	80		64	
SBL	2	2880	341	.12*	543	.19*
SBT	2	3200	520	.17	304	.11
SBR	0	0	28		54	
EBL	1	1600	89	.06	48	.03*
EBT	2	3200	711	.22*	431	.13
EBR	1	1600	85	.05	30	.02
WBL	1	1600	67	.04*	49	.03
WBT	2	3200	349	.11	753	.24*
WBR	f		391		775	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .61 .71

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	86	.05	170	.11
NBT	2	3200	353	.14*	437	.16*
NBR	0	0	80		64	
SBL	2	2880	341	.12*	543	.19*
SBT	2	3200	528	.17	326	.12
SBR	0	0	28		54	
EBL	1	1600	120	.08	48	.03*
EBT	2	3200	711	.22*	431	.13
EBR	1	1600	85	.05	30	.02
WBL	1	1600	67	.04*	49	.03
WBT	2	3200	349	.11	767	.24*
WBR	f		391		775	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .62 .72

30. Ave Stanford & Rye Canyon

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	89	.03*	383	.11*
NBT	1	1750	39	.03	40	.03
NBR	0	0	12		16	
SBL	1	1750	15	.01	92	.05
SBT	1	1750	27	.02*	83	.05*
SBR	1	1750	31	.02	262	.15
EBL	1	1750	214	.12*	39	.02
EBT	3	5250	625	.18	925	.20*
EBR	0	0	453	.26	129	
WBL	1	1750	22	.01	18	.01*
WBT	3	5250	1151	.24*	888	.17
WBR	0	0	99		24	
Right Turn Adjustment					SBR	.07*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .51 .54

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	89	.03*	382	.11*
NBT	1	1750	39	.03	40	.03
NBR	0	0	12		16	
SBL	1	1750	15	.01	92	.05
SBT	1	1750	27	.02*	83	.05*
SBR	1	1750	31	.02	262	.15
EBL	1	1750	214	.12*	39	.02
EBT	3	5250	633	.18	925	.20*
EBR	0	0	453	.26	129	
WBL	1	1750	22	.01	18	.01*
WBT	3	5250	1153	.24*	901	.18
WBR	0	0	99		24	
Right Turn Adjustment					SBR	.08*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .51 .55

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	108	.03*	487	.14*
NBT	1	1750	39	.03	40	.03
NBR	0	0	12		16	
SBL	1	1750	15	.01	92	.05
SBT	1	1750	27	.02*	83	.05*
SBR	1	1750	31	.02	262	.15
EBL	1	1750	214	.12*	39	.02
EBT	3	5250	865	.25	1185	.25*
EBR	0	0	573	.33	150	
WBL	1	1750	22	.01	18	.01*
WBT	3	5250	1330	.27*	1079	.21
WBR	0	0	99		24	
Right Turn Adjustment					SBR	.06*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .54 .61

33. Rye/Copper Hill & Newhall Ranch

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	41	.01*	115	.03
NBT	3	5250	381	.07	1070	.20*
NBR	f		32		219	
SBL	2	3500	133	.04	220	.06*
SBT	3	5250	1240	.24*	516	.10
SBR	f		358		192	
EBL	2	3500	441	.13*	922	.26*
EBT	4	7000	510	.07	983	.14
EBR	1	1750	76	.04	43	.02
WBL	2	3500	366	.10	168	.05
WBT	4	7000	1038	.15*	553	.08*
WBR	f		217		148	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .63 .70

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	41	.01*	115	.03
NBT	3	5250	388	.07	1070	.20*
NBR	f		32		219	
SBL	2	3500	133	.04	220	.06*
SBT	3	5250	1253	.24*	530	.10
SBR	f		346		192	
EBL	2	3500	441	.13*	922	.26*
EBT	4	7000	510	.07	984	.14
EBR	1	1750	76	.04	43	.02
WBL	2	3500	382	.11	168	.05
WBT	4	7000	965	.14*	553	.08*
WBR	f		217		148	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .62 .70

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	41	.01*	115	.03
NBT	3	5250	503	.10	1268	.24*
NBR	f		32		228	
SBL	2	3500	133	.04	220	.06*
SBT	3	5250	1400	.27*	604	.12
SBR	f		346		192	
EBL	2	3500	441	.13*	922	.26*
EBT	4	7000	510	.07	984	.14
EBR	1	1750	76	.04	43	.02
WBL	2	3500	382	.11	168	.05
WBT	4	7000	965	.14*	553	.08*
WBR	f		217		148	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .65 .74

35. Copper Hill & Decoro

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5250	591	.11	1769	.34*
NBR	1	1750	173	.10	421	.24
SBL	1	1750	325	.19	44	.03*
SBT	3	5250	1920	.37*	625	.12
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3500	343	.10*	151	.04*
WBT	0	0	0		0	
WBR	1	1750	264	.15	60	.03
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .57 .51

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5250	598	.11	1769	.34*
NBR	1	1750	173	.10	421	.24
SBL	1	1750	325	.19	44	.03*
SBT	3	5250	1921	.37*	640	.12
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3500	344	.10*	151	.04*
WBT	0	0	0		0	
WBR	1	1750	264	.15	60	.03
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .57 .51

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5250	636	.12	1872	.36*
NBR	1	1750	184	.11	491	.28
SBL	1	1750	325	.19	44	.03*
SBT	3	5250	2026	.39*	677	.13
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3500	367	.10*	151	.04*
WBT	0	0	0		0	
WBR	1	1750	264	.15	60	.03
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .59 .53

36. Tourney & Valencia

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3500	37	.01*	254	.07*
SBT	0	0	0		0	
SBR	1	1750	48	.03	338	.19
EBL	2	3500	361	.10*	63	.02*
EBT	4	7000	1272	.18	1404	.20
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	4	7000	1377	.24*	1226	.19*
WBR	0	0	290		82	
Right Turn Adjustment					SBR	.10*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .45 .48

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3500	37	.01*	254	.07*
SBT	0	0	0		0	
SBR	1	1750	48	.03	338	.19
EBL	2	3500	361	.10*	63	.02*
EBT	4	7000	1302	.19	1404	.20
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	4	7000	1428	.25*	1245	.19*
WBR	0	0	295		82	
Right Turn Adjustment					SBR	.10*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .46 .48

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3500	37	.01*	254	.07*
SBT	0	0	0		0	
SBR	1	1750	48	.03	338	.19
EBL	2	3500	361	.10*	63	.02*
EBT	4	7000	1384	.20	1566	.22
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	4	7000	1519	.26*	1342	.20*
WBR	0	0	295		82	
Right Turn Adjustment					SBR	.10*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .47 .49

37. Tourney & Magic Mountain

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	134	.04*	221	.06*
NBT	0	0	0		0	
NBR	1	1750	70	.04	253	.14
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5250	666	.13*	1074	.20*
EBR	1	1750	233	.13	70	.04
WBL	1	1750	387	.22*	109	.06*
WBT	3	5250	713	.14	764	.15
WBR	0	0	0		0	
Right Turn Adjustment					NBR	.03*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.49**		**.45**

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	134	.04*	221	.06*
NBT	0	0	0		0	
NBR	1	1750	70	.04	253	.14
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5250	662	.13*	1071	.20*
EBR	1	1750	233	.13	70	.04
WBL	1	1750	384	.22*	109	.06*
WBT	3	5250	776	.15	767	.15
WBR	0	0	0		0	
Right Turn Adjustment					NBR	.03*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.49**		**.45**

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	143	.04*	261	.07*
NBT	0	0	0		0	
NBR	1	1750	70	.04	253	.14
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5250	922	.18*	1554	.30*
EBR	1	1750	285	.16	90	.05
WBL	1	1750	384	.22*	109	.06*
WBT	3	5250	1365	.26	1146	.22
WBR	0	0	0		0	
Right Turn Adjustment					NBR	.02*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.54**		**.55**

44. McBean & Valencia

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	218	.06*	193	.06
NBT	3	5250	772	.15	1105	.21*
NBR	2	3500	182	.05	342	.10
SBL	2	3500	97	.03	195	.06*
SBT	3	5250	672	.13*	931	.18
SBR	2	3500	584	.17	296	.08
EBL	2	3500	360	.10*	535	.15
EBT	3	5250	722	.14	1213	.23*
EBR	1	1750	78	.04	57	.03
WBL	2	3500	314	.09	505	.14*
WBT	3	5250	1149	.22*	890	.17
WBR	1	1750	31	.02	116	.07
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR

TOTAL CAPACITY UTILIZATION .61 .74

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	218	.06*	194	.06
NBT	3	5250	778	.15	1106	.21*
NBR	2	3500	165	.05	342	.10
SBL	2	3500	97	.03	195	.06*
SBT	3	5250	673	.13*	931	.18
SBR	2	3500	633	.18	280	.08
EBL	2	3500	358	.10*	535	.15
EBT	3	5250	739	.14	1213	.23*
EBR	1	1750	78	.04	57	.03
WBL	2	3500	315	.09	505	.14*
WBT	3	5250	1148	.22*	894	.17
WBR	1	1750	31	.02	116	.07
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR

TOTAL CAPACITY UTILIZATION .61 .74

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	232	.07*	210	.06
NBT	3	5250	814	.16	1115	.21*
NBR	2	3500	165	.05	342	.10
SBL	2	3500	113	.03	200	.06*
SBT	3	5250	686	.13*	935	.18
SBR	2	3500	633	.18	280	.08
EBL	2	3500	358	.10*	535	.15
EBT	3	5250	739	.14	1259	.24*
EBR	1	1750	78	.04	98	.06
WBL	2	3500	315	.09	505	.14*
WBT	3	5250	1176	.22*	894	.17
WBR	1	1750	35	.02	129	.07
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR

TOTAL CAPACITY UTILIZATION .62 .75

45. McBean & Magic Mtn

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	50	.01*	94	.03
NBT	3	5250	900	.17	1384	.26*
NBR	f		21		98	
SBL	2	3500	387	.11	250	.07*
SBT	4	7000	1871	.27*	1296	.19
SBR	f		534		203	
EBL	2	3500	592	.17*	570	.16*
EBT	2	3500	475	.14	548	.16
EBR	1	1750	107	.06	126	.07
WBL	2	3500	58	.02	172	.05
WBT	3	5250	330	.06*	369	.07*
WBR	1	1750	113	.06	387	.22
Right Turn Adjustment					WBR	.10*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .61 .76

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	58	.02*	95	.03
NBT	3	5250	898	.17	1384	.26*
NBR	f		21		98	
SBL	2	3500	388	.11	250	.07*
SBT	4	7000	1920	.27*	1279	.18
SBR	f		487		206	
EBL	2	3500	585	.17*	570	.16*
EBT	2	3500	477	.14	545	.16
EBR	1	1750	107	.06	125	.07
WBL	2	3500	58	.02	172	.05
WBT	3	5250	430	.08*	369	.07*
WBR	1	1750	112	.06	387	.22
Right Turn Adjustment					WBR	.10*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .64 .76

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	110	.03*	162	.05
NBT	3	5250	898	.17	1384	.26*
NBR	f		21		98	
SBL	2	3500	388	.11	250	.07*
SBT	4	7000	1920	.27*	1279	.18
SBR	f		741		335	
EBL	2	3500	632	.18*	734	.21*
EBT	2	3500	622	.18	749	.21
EBR	1	1750	161	.09	188	.11
WBL	2	3500	58	.02	172	.05
WBT	3	5250	680	.13*	516	.10*
WBR	1	1750	112	.06	387	.22
Right Turn Adjustment					WBR	.07*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .71 .81

Existing Volumes With Project With Mitigation

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	110	.03*	162	.05
NBT	3	5250	898	.17	1384	.26*
NBR	f		21		98	
SBL	2	3500	388	.11	250	.07*
SBT	4	7000	1920	.27*	1279	.18
SBR	f		741		335	
EBL	2	3500	632	.18*	734	.21*
EBT	2	3500	622	.18	749	.21
EBR	1	1750	161	.09	188	.11
WBL	2	3500	58	.02	172	.05
WBT	3	5250	680	.13*	516	.10*
WBR	1	1750	112	.06	387	.22
Right Turn Adjustment					WBR	.05*
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for WBR

TOTAL CAPACITY UTILIZATION .71 .79

48. McBean & Newhall Ranch

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	394	.11*	353	.10
NBT	3	5250	431	.08	1499	.29*
NBR	1	1750	212	.12	690	.39
SBL	2	3500	275	.08	206	.06*
SBT	4	7000	1542	.22*	706	.10
SBR	f		187		48	
EBL	2	3500	103	.03*	198	.06
EBT	4	7000	566	.08	1402	.20*
EBR	1	1750	193	.11	323	.18
WBL	2	3500	639	.18	440	.13*
WBT	3	5250	1397	.27*	727	.14
WBR	1	1750	111	.06	270	.15
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .73 .78

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	393	.11*	353	.10
NBT	3	5250	424	.08	1499	.29*
NBR	1	1750	211	.12	690	.39
SBL	2	3500	275	.08	206	.06*
SBT	4	7000	1532	.22*	692	.10
SBR	f		197		48	
EBL	2	3500	103	.03	198	.06
EBT	4	7000	566	.08*	1402	.20*
EBR	1	1750	193	.11	327	.19
WBL	2	3500	698	.20*	442	.13*
WBT	3	5250	1323	.25	727	.14
WBR	1	1750	111	.06	270	.15
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .71 .78

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	393	.11*	353	.10
NBT	3	5250	435	.08	1539	.29*
NBR	1	1750	244	.14	805	.46
SBL	2	3500	275	.08	206	.06*
SBT	4	7000	1660	.24*	720	.10
SBR	f		197		48	
EBL	2	3500	103	.03	202	.06
EBT	4	7000	566	.08*	1402	.20*
EBR	1	1750	193	.11	327	.19
WBL	2	3500	809	.23*	499	.14*
WBT	3	5250	1323	.25	727	.14
WBR	1	1750	111	.06	270	.15
Right Turn Adjustment					NBR	.06*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .76 .85

Existing Volumes With Project With Mitigation

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	393	.11*	353	.10
NBT	3	5250	435	.08	1539	.29*
NBR	f		244		805	
SBL	2	3500	275	.08	206	.06*
SBT	4	7000	1660	.24*	720	.10
SBR	f		197		48	
EBL	2	3500	103	.03	202	.06
EBT	4	7000	566	.08*	1402	.20*
EBR	1	1750	193	.11	327	.19
WBL	2	3500	809	.23*	499	.14*
WBT	3	5250	1323	.25	727	.14
WBR	1	1750	111	.06	270	.15
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .76 .79

49. McBean & Decoro

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	183	.10*	121	.07
NBT	3	5250	434	.08	1072	.20*
NBR	1	1750	168	.10	403	.23
SBL	1	1750	120	.07	75	.04*
SBT	3	5250	856	.16*	486	.09
SBR	1	1750	382	.22	79	.05
EBL	2	3500	241	.07*	398	.11*
EBT	2	3500	189	.05	456	.13
EBR	1	1750	103	.06	53	.03
WBL	2	3500	615	.18	233	.07
WBT	2	3500	997	.33*	251	.09*
WBR	0	0	144		77	
Right Turn Adjustment			SBR	.01*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.77**		**.54**

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	183	.10*	121	.07
NBT	3	5250	427	.08	1072	.20*
NBR	1	1750	168	.10	403	.23
SBL	1	1750	120	.07	75	.04*
SBT	3	5250	856	.16*	469	.09
SBR	1	1750	377	.22	79	.05
EBL	2	3500	241	.07*	398	.11*
EBT	2	3500	189	.05	456	.13
EBR	1	1750	103	.06	53	.03
WBL	2	3500	616	.18	235	.07
WBT	2	3500	985	.32*	251	.09*
WBR	0	0	144		77	
Right Turn Adjustment			SBR	.01*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.76**		**.54**

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	183	.10*	121	.07
NBT	3	5250	427	.08	1097	.21*
NBR	1	1750	169	.10	416	.24
SBL	1	1750	120	.07	75	.04*
SBT	3	5250	920	.18*	481	.09
SBR	1	1750	377	.22	79	.05
EBL	2	3500	243	.07*	430	.12*
EBT	2	3500	198	.06	494	.14
EBR	1	1750	103	.06	53	.03
WBL	2	3500	656	.19	246	.07
WBT	2	3500	1008	.33*	251	.09*
WBR	0	0	144		77	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.78**		**.56**

51. Wiley Cyn & Lyons

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	179	.10*	190	.11
NBT	2	3500	200	.06	399	.11*
NBR	1	1750	124	.07	237	.14
SBL	1	1750	125	.07	160	.09*
SBT	2	3500	382	.11*	261	.07
SBR	1	1750	371	.21	256	.15
EBL	2	3500	134	.04	288	.08
EBT	2	3500	647	.18*	983	.28*
EBR	1	1750	115	.07	118	.07
WBL	1	1750	164	.09*	199	.11*
WBT	3	5250	775	.17	769	.18
WBR	0	0	94		157	
Right Turn Adjustment			SBR	.02*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.60**		**.69**

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	179	.10*	190	.11
NBT	2	3500	200	.06	399	.11*
NBR	1	1750	124	.07	237	.14
SBL	1	1750	125	.07	160	.09*
SBT	2	3500	382	.11*	261	.07
SBR	1	1750	371	.21	256	.15
EBL	2	3500	128	.04	288	.08
EBT	2	3500	647	.18*	982	.28*
EBR	1	1750	115	.07	118	.07
WBL	1	1750	164	.09*	199	.11*
WBT	3	5250	771	.16	767	.18
WBR	0	0	94		157	
Right Turn Adjustment			SBR	.02*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.60**		**.69**

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	194	.11*	199	.11
NBT	2	3500	200	.06	399	.11*
NBR	1	1750	124	.07	237	.14
SBL	1	1750	125	.07	175	.10*
SBT	2	3500	382	.11*	263	.08
SBR	1	1750	371	.21	256	.15
EBL	2	3500	128	.04	288	.08
EBT	2	3500	684	.20*	1041	.30*
EBR	1	1750	119	.07	127	.07
WBL	1	1750	164	.09*	199	.11*
WBT	3	5250	822	.17	812	.18
WBR	0	0	94		157	
Right Turn Adjustment			SBR	.01*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.62**		**.72**

54. Orchard Village & Wiley Cyn

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	218	.12*	132	.08
NBT	2	3500	754	.25	807	.27*
NBR	0	0	113		153	
SBL	1	1750	117	.07	124	.07*
SBT	2	3500	777	.22*	731	.21
SBR	1	1750	283	.16	215	.12
EBL	2	3500	172	.05	282	.08
EBT	2	3500	125	.07*	254	.12*
EBR	0	0	272	.16	179	
WBL	1	1750	152	.09*	98	.06*
WBT	2	3500	268	.08	240	.07
WBR	1	1750	96	.05	101	.06
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .60 .62

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	218	.12*	132	.08
NBT	2	3500	750	.25	807	.27*
NBR	0	0	113		153	
SBL	1	1750	117	.07	124	.07*
SBT	2	3500	777	.22*	731	.21
SBR	1	1750	283	.16	216	.12
EBL	2	3500	172	.05	282	.08
EBT	2	3500	121	.07*	254	.12*
EBR	0	0	270	.15	179	
WBL	1	1750	152	.09*	98	.06*
WBT	2	3500	268	.08	239	.07
WBR	1	1750	81	.05	101	.06
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .60 .62

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	218	.12*	132	.08
NBT	2	3500	788	.26	822	.28*
NBR	0	0	113		153	
SBL	1	1750	118	.07	139	.08*
SBT	2	3500	794	.23*	768	.22
SBR	1	1750	283	.16	216	.12
EBL	2	3500	172	.05	282	.08
EBT	2	3500	121	.07*	254	.12*
EBR	0	0	270	.15	179	
WBL	1	1750	152	.09*	98	.06*
WBT	2	3500	268	.08	239	.07
WBR	1	1750	88	.05	104	.06
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .61 .64

55. Orchard Village & McBean

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		327		215	
NBT	0.5	3500	39	.10*	17	.07*
NBR	2	3500	592	.17	757	.22
SBL	0	0	25		64	
SBT	1	1750	32	.03*	40	.06*
SBR	d	1750	19	.01	31	.02
EBL	1	1750	38	.02	28	.02
EBT	3	5250	436	.12*	860	.22*
EBR	0	0	253	.14	319	
WBL	2	3500	778	.22*	799	.23*
WBT	3	5250	507	.11	566	.11
WBR	0	0	48		19	
Clearance Interval				.10*		.10*

Note: Assumes N/S Split Phasing
Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .57 .68

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		314		215	
NBT	0.5	3500	39	.10*	17	.07*
NBR	2	3500	591	.17	757	.22
SBL	0	0	25		64	
SBT	1	1750	32	.03*	40	.06*
SBR	d	1750	19	.01	31	.02
EBL	1	1750	38	.02	28	.02
EBT	3	5250	419	.12*	861	.22*
EBR	0	0	253	.14	320	
WBL	2	3500	778	.22*	800	.23*
WBT	3	5250	497	.10	563	.11
WBR	0	0	48		19	
Clearance Interval				.10*		.10*

Note: Assumes N/S Split Phasing
Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .57 .68

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		374		237	
NBT	0.5	3500	39	.12*	17	.07*
NBR	2	3500	591	.17	757	.22
SBL	0	0	25		64	
SBT	1	1750	32	.03*	40	.06*
SBR	d	1750	19	.01	31	.02
EBL	1	1750	38	.02	28	.02
EBT	3	5250	419	.12*	870	.24*
EBR	0	0	276	.16	382	
WBL	2	3500	778	.22*	800	.23*
WBT	3	5250	501	.10	565	.11
WBR	0	0	48		19	
Clearance Interval				.10*		.10*

Note: Assumes N/S Split Phasing
Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .59 .70

57. Valencia & Magic Mtn

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	32	.02*	56	.03
NBT	3	5250	682	.14	1406	.30*
NBR	0	0	71		154	
SBL	1	1750	25	.01	56	.03*
SBT	3	5250	1632	.31*	1115	.21
SBR	2	3500	429	.12	371	.11
EBL	2	3500	145	.04	500	.14*
EBT	2	3500	153	.05*	420	.13
EBR	0	0	29		29	
WBL	1	1750	176	.10*	148	.08
WBT	2	3500	351	.10	303	.09*
WBR	1	1750	26	.01	61	.03
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .58 .66

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	32	.02*	56	.03
NBT	3	5250	683	.14	1406	.30*
NBR	0	0	74		154	
SBL	1	1750	25	.01	56	.03*
SBT	3	5250	1631	.31*	1120	.21
SBR	2	3500	505	.14	371	.11
EBL	2	3500	146	.04	500	.14*
EBT	2	3500	153	.05*	420	.13
EBR	0	0	29		29	
WBL	1	1750	175	.10*	148	.08
WBT	2	3500	372	.11	303	.09*
WBR	1	1750	26	.01	61	.03
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .58 .66

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	32	.02*	56	.03
NBT	3	5250	683	.14	1436	.30*
NBR	0	0	74		163	
SBL	1	1750	25	.01	56	.03*
SBT	3	5250	1659	.32*	1120	.21
SBR	2	3500	645	.18	406	.12
EBL	2	3500	188	.05*	601	.17*
EBT	2	3500	195	.06	448	.14
EBR	0	0	29		29	
WBL	1	1750	175	.10	148	.08
WBT	2	3500	453	.13*	365	.10*
WBR	1	1750	26	.01	61	.03
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .62 .70

65. Bouquet & Soledad

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	21	.01*	24	.01
NBT	3	5250	399	.08	1109	.21*
NBR	1	1750	182	.10	286	.16
SBL	3	5250	331	.06	461	.09*
SBT	2.5	7000	1218	{.30}*	832	{.18}
SBR	1.5		917		669	
EBL	3	5250	240	.05*	986	.19*
EBT	3	5250	499	.10	1366	.26
EBR	0	0	9		4	
WBL	3	5250	307	.06	315	.06
WBT	2.5	7000	1139	.22*	947	{.18}*
WBR	1.5		230		391	{.16}
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .68 .77

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	21	.01*	24	.01
NBT	3	5250	398	.08	1109	.21*
NBR	1	1750	181	.10	286	.16
SBL	3	5250	331	.06	461	.09*
SBT	2.5	7000	1217	.30*	831	{.18}
SBR	1.5		917		671	
EBL	3	5250	241	.05*	986	.19*
EBT	3	5250	499	.10	1366	.26
EBR	0	0	9		4	
WBL	3	5250	309	.06	315	.06
WBT	2.5	7000	1170	.22*	947	{.18}*
WBR	1.5		229		391	{.16}
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .68 .77

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	21	.01*	24	.01
NBT	3	5250	398	.08	1109	.21*
NBR	1	1750	181	.10	286	.16
SBL	3	5250	331	.06	461	.09*
SBT	2.5	7000	1217	.30*	831	{.18}
SBR	1.5		917		671	
EBL	3	5250	241	.05*	986	.19*
EBT	3	5250	536	.10	1474	.28
EBR	0	0	9		4	
WBL	3	5250	345	.07	337	.06
WBT	2.5	7000	1327	.25*	963	{.18}*
WBR	1.5		229		391	{.16}
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .71 .77

66. Bouquet & Newhall Ranch

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	291	.08*	445	.13
NBT	4	7000	561	.08	2044	.29*
NBR	1	1750	33	.02	44	.03
SBL	1	1750	324	.19	210	.12*
SBT	4	7000	2079	.30*	1328	.19
SBR	1	1750	584	.33	356	.20
EBL	3	5250	260	.05*	1020	.19*
EBT	3	5250	369	.07	786	.15
EBR	2	3500	261	.07	454	.13
WBL	2	3500	120	.03	209	.06
WBT	4	7000	890	.13*	634	.09*
WBR	1	1750	89	.05	359	.21
Right Turn Adjustment					WBR	.03*
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR EBR

TOTAL CAPACITY UTILIZATION .66 .82

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	289	.08*	445	.13
NBT	4	7000	561	.08	2044	.29*
NBR	1	1750	33	.02	44	.03
SBL	1	1750	324	.19	210	.12*
SBT	4	7000	2073	.30*	1328	.19
SBR	1	1750	595	.34	356	.20
EBL	3	5250	260	.05*	1020	.19*
EBT	3	5250	369	.07	786	.15
EBR	2	3500	261	.07	454	.13
WBL	2	3500	123	.04	209	.06
WBT	4	7000	864	.12*	634	.09*
WBR	1	1750	90	.05	359	.21
Right Turn Adjustment					WBR	.03*
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR EBR

TOTAL CAPACITY UTILIZATION .65 .82

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	291	.08*	453	.13
NBT	4	7000	561	.08	2044	.29*
NBR	1	1750	33	.02	44	.03
SBL	1	1750	324	.19	210	.12*
SBT	4	7000	2073	.30*	1328	.19
SBR	1	1750	675	.39	384	.22
EBL	3	5250	275	.05*	1081	.21*
EBT	3	5250	369	.07	796	.15
EBR	2	3500	267	.08	459	.13
WBL	2	3500	123	.04	209	.06
WBT	4	7000	866	.12*	641	.09*
WBR	1	1750	90	.05	359	.21
Right Turn Adjustment			SBR	.04*	WBR	.03*
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR EBR

TOTAL CAPACITY UTILIZATION .69 .84

Existing Volumes With Project With Mitigation

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	291	.08*	453	.13
NBT	4	7000	561	.08	2044	.29*
NBR	1	1750	33	.02	44	.03
SBL	1	1750	324	.19	210	.12*
SBT	4	7000	2073	.30*	1328	.19
SBR	1	1750	675	.39	384	.22
EBL	3	5250	275	.05*	1081	.21*
EBT	3	5250	369	.07	796	.15
EBR	2	3500	267	.08	459	.13
WBL	2	3500	123	.04	209	.06
WBT	4	7000	866	.12*	641	.09*
WBR	1	1750	90	.05	359	.21
Right Turn Adjustment			SBR	.04*		
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR WBR EBR

TOTAL CAPACITY UTILIZATION .69 .81

94. Commerce Center & SR-126

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	47	.03	65	.04*
NBT	1	1600	84	.05*	55	.03
NBR	1	1600	20	.01	13	.01
SBL	2	2880	435	.15*	1047	.36*
SBT	1	1600	50	.03	214	.13
SBR	1	1600	39	.02	38	.02
EBL	1	1600	81	.05*	38	.02
EBT	2	3200	554	.17	876	.27*
EBR	d	1600	28	.02	35	.02
WBL	1	1600	73	.05	20	.01*
WBT	2	3200	604	.19*	662	.21
WBR	f		1799		439	
Clearance Interval				.10*		.10*

Note: Assumes N/S Split Phasing

TOTAL CAPACITY UTILIZATION .54 .78

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	125	.08	71	.04
NBT	1	1600	311	.19*	62	.04*
NBR	1	1600	20	.01	13	.01
SBL	2	2880	436	.15*	1004	.35*
SBT	1	1600	51	.03	263	.16
SBR	1	1600	39	.02	38	.02
EBL	1	1600	81	.05*	38	.02
EBT	2	3200	549	.17	853	.27*
EBR	d	1600	35	.02	59	.04
WBL	1	1600	73	.05	20	.01*
WBT	2	3200	528	.17*	656	.21
WBR	f		1700		435	
Clearance Interval				.10*		.10*

Note: Assumes N/S Split Phasing

TOTAL CAPACITY UTILIZATION .66 .77

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	167	.10	131	.08
NBT	1	1600	524	.33*	190	.12*
NBR	1	1600	56	.04	112	.07
SBL	2	2880	436	.15*	1004	.35*
SBT	1	1600	149	.09	450	.28
SBR	1	1600	39	.02	38	.02
EBL	1	1600	81	.05	38	.02
EBT	2	3200	549	.17*	853	.27*
EBR	d	1600	86	.05	116	.07
WBL	1	1600	180	.11*	90	.06*
WBT	2	3200	528	.17	656	.21
WBR	f		1700		435	
Clearance Interval				.10*		.10*

Note: Assumes N/S Split Phasing

TOTAL CAPACITY UTILIZATION .86 .90

105. Westridge & Valencia

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	65	.04	4	.00
NBT	1	1600	9	.01*	0	.00*
NBR	1	1600	62	.04	26	.02
SBL	2	2880	287	.10*	91	.03*
SBT	1	1600	20	.01	0	.00
SBR	1	1600	53	.03	2	.00
EBL	1	1600	7	.00	1	.00
EBT	3	4800	1255	.26	219	.05*
EBR	0	0	7		4	
WBL	1	1600	12	.01	30	.02*
WBT	3	4800	1615	.34*	191	.04
WBR	1	1600	100	.06	99	.06
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.55**		**.20**

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	65	.04	4	.00
NBT	1	1600	9	.01*	0	.00*
NBR	1	1600	62	.04	26	.02
SBL	2	2880	287	.10*	94	.03*
SBT	1	1600	20	.01	0	.00
SBR	1	1600	53	.03	2	.00
EBL	1	1600	7	.00	1	.00
EBT	3	4800	1255	.26	219	.05*
EBR	0	0	7		4	
WBL	1	1600	12	.01	30	.02*
WBT	3	4800	1615	.34*	191	.04
WBR	1	1600	105	.07	99	.06
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.55**		**.20**

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	65	.04	4	.00
NBT	1	1600	9	.01*	0	.00*
NBR	1	1600	62	.04	26	.02
SBL	2	2880	793	.28*	1111	.39*
SBT	1	1600	20	.01	0	.00
SBR	1	1600	53	.03	2	.00
EBL	1	1600	7	.00	1	.00
EBT	3	4800	1255	.26	219	.05*
EBR	0	0	7		4	
WBL	1	1600	12	.01	30	.02*
WBT	3	4800	1615	.34*	191	.04
WBR	1	1600	386	.24	758	.47
Right Turn Adjustment					WBR	.11*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.73**		**.67**

108. Stevenson Rnch & Pico Cyn

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	749	.26*	295	.10*
SBT	0	0	0		0	
SBR	1	1600	51	.03	68	.04
EBL	1	1600	108	.07*	49	.03*
EBT	2	3200	138	.04	134	.04
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	88	.06*	103	.06*
WBR	1	1600	337	.21	582	.36
Right Turn Adjustment					WBR	.22*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.49**		**.51**

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	748	.26*	295	.10*
SBT	0	0	0		0	
SBR	1	1600	51	.03	68	.04
EBL	1	1600	108	.07*	49	.03*
EBT	2	3200	138	.04	134	.04
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	88	.06*	103	.06*
WBR	1	1600	337	.21	581	.36
Right Turn Adjustment					WBR	.22*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.49**		**.51**

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	748	.26*	295	.10*
SBT	0	0	0		0	
SBR	1	1600	53	.03	75	.05
EBL	1	1600	115	.07*	51	.03*
EBT	2	3200	138	.04	134	.04
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	88	.06*	103	.06*
WBR	1	1600	337	.21	581	.36
Right Turn Adjustment					WBR	.22*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.49**		**.51**

109. Stevenson Rnch & Poe/Chase

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	175	.11*	278	.17*
NBT	2	3200	435	.14	255	.09
NBR	0	0	10		23	
SBL	1	1600	72	.05	3	.00
SBT	2	3200	714	.22*	167	.05*
SBR	d	1600	88	.06	112	.07
EBL	1	1600	266	.17*	100	.06*
EBT	1	1600	34	.02	4	.00
EBR	1	1600	365	.23	168	.11
WBL	1	1600	41	.03	12	.01
WBT	1	1600	10	.03*	1	.01*
WBR	0	0	43		11	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .63 .39

Existing Volumes With MV Redistribution

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	175	.11*	278	.17*
NBT	2	3200	436	.14	255	.09
NBR	0	0	10		23	
SBL	1	1600	72	.05	3	.00
SBT	2	3200	713	.22*	167	.05*
SBR	d	1600	88	.06	112	.07
EBL	1	1600	266	.17*	100	.06*
EBT	1	1600	34	.02	4	.00
EBR	1	1600	365	.23	168	.11
WBL	1	1600	41	.03	12	.01
WBT	1	1600	10	.03*	1	.01*
WBR	0	0	43		11	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .63 .39

Existing Volumes With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	175	.11*	278	.17*
NBT	2	3200	443	.14	257	.09
NBR	0	0	10		23	
SBL	1	1600	72	.05	3	.00
SBT	2	3200	715	.22*	174	.05*
SBR	d	1600	100	.06	143	.09
EBL	1	1600	303	.19*	109	.07*
EBT	1	1600	34	.02	4	.00
EBR	1	1600	365	.23	168	.11
WBL	1	1600	41	.03	12	.01
WBT	1	1600	10	.03*	1	.01*
WBR	0	0	43		11	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .65 .40

Long-Range Buildout Conditions Without Potrero Canyon Road Bridge, AFA (February 22, 2011)

AUSTIN-FOUST ASSOCIATES, INC.
TRAFFIC ENGINEERING AND TRANSPORTATION PLANNING

MEMORANDUM

TO: Susan Tebo, Impact Sciences, Inc.

FROM: Daryl Zerfass, P.E.

DATE: February 22, 2011

SUBJECT: **LONG-RANGE BUILDOUT CONDITIONS WITHOUT POTRERO CANYON ROAD BRIDGE**

This memo serves as a supplement to the original Mission Village Traffic Impact Analysis (TIA) (DEIR, Appendix 4.5, Mission Village Traffic Impact Analysis, October 2010) and provides an analysis of Long-Range Buildout Conditions (2035) for a scenario that does not include the future Potrero Canyon Road Bridge over the Santa Clara River. Potrero Canyon Road is depicted on the Los Angeles County Highway Plan as a future roadway that intersects with State Route 126 (SR-126) just east of the Ventura County line and extends south through the Newhall Ranch Specific Plan area to an intersection with the future Long Canyon Road. The connection to SR-126 requires a bridge crossing of the Santa Clara River.

Background

The Newhall Ranch Specific Plan (Specific Plan) identifies three future bridge crossings of the Santa Clara River within the Specific Plan boundary – Commerce Center Drive Bridge, Long Canyon Road Bridge, and Potrero Canyon Road Bridge. The Specific Plan EIR addresses a long-range scenario in which all three crossings are envisioned. Subsequent to the EIR, a separate study was prepared to identify a timeframe for construction of the roadways, including these bridges, that would support the increased traffic levels resulting from development of the Specific Plan, Entrada/Legacy Village, and Valencia Commerce Center buildout (i.e., all the projects that will build out in the Westside of the Santa Clarita Valley over the next 25 years). That study, the *Westside Santa Clarita Valley Roadway Phasing Analysis*, November 2006 (Phasing Study), was reviewed and approved by the Los Angeles County Department of Public Works for the purpose of phasing the roadway improvements necessary to support development of these projects.

The process utilized to prepare the Phasing Study consisted of first identifying the amount of development anticipated to occur each year as the Westside area first begins to develop, and continuing

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through complete buildout of the Westside area. The Newhall Ranch master developer provided these anticipated absorption amounts along with the specific geographical areas anticipated to be developed each year. Based on the geographical areas being developed, the roadway infrastructure needed to serve those areas was then identified and separated into seven distinct stages. Special versions of the Santa Clarita Valley Consolidated Traffic Model (SCVCTM) used by the County of Los Angeles were then prepared for each of the seven stages.

The Phasing Study included the calculation of levels of service (LOS) for each stage based on the amount of new land development estimated to be in place at the time of road improvement construction. If deficiencies were identified, the road improvements for that stage were modified such that acceptable LOS (defined as LOS D or better) was obtained. The study ultimately determined that each stage of road improvement construction would accommodate the concurrent level of development with acceptable levels of service.

Specific to the three bridge crossings, the Phasing Study determined that in order to maintain acceptable levels of service, the Commerce Center Drive Bridge would be included as part of development Stage 2, the Long Canyon Road Bridge would be included as part of Stage 3, and construction of the Potrero Canyon Road Bridge would not occur until the final stage, Stage 7.

Mission Village TIA

The Mission Village TIA and supplemental studies have evaluated three horizon years for potential project impacts. First, an Existing plus Project impact analysis has been prepared, which evaluates project impacts in relation to the existing roadway network. Second, a Project Buildout horizon year of 2021 was prepared, which evaluates project impacts under a cumulative setting based on the project's buildout year of 2021. For each of these two analyses, the Potrero Canyon Road Bridge is not included as part of the background roadway network, consistent with the Phasing Study discussed above. However, a third analysis included in the Mission Village TIA was prepared for a Long-Range Buildout Cumulative setting (2035), which is based on full buildout of the Newhall Ranch Specific Plan (including the Mission Village project), the County Highway Plan, and land use development consistent with the Los Angeles County Area Plan and the City of Santa Clarita General Plan. For that long-range buildout cumulative setting, the Potrero Canyon Road Bridge was included as part of the background condition, consistent with the Newhall Ranch Specific Plan.

Analysis

As noted above, the purpose of this memorandum is to evaluate future conditions for a scenario without the Potrero Canyon Road Bridge over the Santa Clara River for the Long-Range Buildout Cumulative setting (2035), and provide a comparison to the Long-Range Buildout Cumulative setting ICUs and freeway V/C ratios presented in the Mission Village TIA, which is a scenario that includes the Bridge. For the analysis, Long-Range Cumulative intersection ICUs and freeway V/C ratios for the No-Bridge scenario were calculated using the SCVCTM, consistent with the methodology used for the Mission Village TIA analysis, allowing for a direct comparison to the TIA results.

Mission Village (Vesting Tentative Tract Map (VTTM) 61105) consists of a portion of the Newhall Ranch Specific Plan area and is located within the Santa Clarita Valley in unincorporated County of Los Angeles. Mission Village consists of a variety of land uses and as described in the TIA, these land uses have been categorized based on the land use categories used by the SCVCTM and the Institute of Transportation Engineers (ITE) Trip Generation Manual. The SCVCTM is a computerized

travel demand model that utilizes a sophisticated trip distribution function to derive the distribution of vehicle trips, and which has previously been calibrated to the existing conditions of the Santa Clarita Valley. The SCVCTM was utilized for this analysis to model a Long-Range Buildout Cumulative conditions scenario that does not include the future Potrero Canyon Road Bridge over the Santa Clara River.

Specific to the Mission Village internal (i.e., on-site) roadways, Long-Range Buildout Cumulative conditions without the Potrero Canyon Road Bridge were assessed by comparing SCVCTM model runs for the internal roadways under conditions with and without the bridge. The SCVCTM showed no discernable change to the traffic volumes on the arterial roadways within the Mission Village site with the bridge removed, as illustrated in the attached Figure 1. Local and collector streets within the project site are beyond the level of detail provided by the SCVCTM; however, traffic on these local/collector streets would not be affected by removal of the bridge as evidenced by the lack of discernable change to the Mission Village arterial roadway volumes.

As to the off-site roadways, peak hour ICU values that correspond with the long-range No-Bridge scenario referenced above were calculated and are presented in Table 1, which also provides a comparison to the long-range with-bridge ICU results presented in the Mission Village TIA (DEIR, Appendix 4.5, Mission Village Traffic Impact Analysis, Tables 4-8 and 4-10). As shown on Table 1, there are no locations where the removal of the Potrero Canyon Road Bridge would create a deficiency (i.e., LOS E or F) or worsen an otherwise deficient condition as compared to the with-bridge scenario. That is, in each case where the conditions with the Bridge are LOS E or F, removal of the Bridge either has no effect on the intersection ICU, or in some cases, removal of the Bridge improves conditions due to the resulting changes in travel patterns. The detailed ICU calculation worksheets are attached to this memorandum for reference.

With respect to the I-5 freeway, Table 2 provides a comparison between the Long-Range Buildout Cumulative conditions for the I-5 freeway without the bridge to the Long-Range Buildout Cumulative with-bridge conditions presented in the Mission Village TIA (DEIR, Appendix 4.5, Mission Village Traffic Impact Analysis, Table 4-4), as revised by the supplemental analysis for Caltrans (FEIR, Appendix F4.5 Response to Comments, Letter A5, Response 7). The comparison shows that there are no freeway segments where removal of the Bridge would result in a new deficiency (i.e., V/C > 1.00) or worsen an otherwise deficient location previously identified in the TIA.

The Mission Village TIA identifies mitigation that reduces the Project impacts to less than significant for each off-site location significantly impacted by the Project (DEIR, Appendix 4.5, Mission Village Traffic Impact Analysis, Tables 4-10). As shown in the tables referenced above, the removal of the Potrero Canyon Road Bridge from the Long-Range Buildout Cumulative conditions setting would not result in the creation of new intersection or freeway deficiencies. At locations where the Mission Village TIA identified deficiencies under the Long-Range Buildout Cumulative conditions setting, this analysis shows that removal of the Potrero Canyon Road Bridge would not worsen those deficient conditions or result in newly identified deficient conditions. Since the Mission Village TIA provides mitigation for all significantly impacted deficient locations, and since removal of the Potrero Canyon Road Bridge from the Long-Range Buildout Cumulative setting would not result in new or worsened deficient locations, the mitigation measures presented in the Project's TIA are applicable to the no-bridge scenario and all identified impacts would be fully mitigated under the no bridge scenario with the improvements identified in the TIA.

Conclusion

The Phasing Study, in combination with the supplemental analysis presented here, establishes that full buildout of the Specific Plan area, including Mission Village, can occur without the Potrero Canyon Road Bridge in place while maintaining acceptable levels of service. This is due primarily to the fact that the Potrero Canyon Road Bridge was included as part of the Specific Plan for purposes other than maintaining acceptable LOS, such as facilitating access to State Route 126. Thus, the Potrero Canyon Road Bridge is not essential to provide acceptable levels of service upon buildout of the Mission Village project and its absence does not affect the results of the traffic impacts analysis, including the identification of significant impacts, provided in the Draft EIR.

Table 1: ICU and LOS Comparison – Long-Range Buildout Cumulative Conditions (2035) with and without Potrero Canyon Road Bridge

	Long-Range Buildout Cumulative Conditions with Potrero Bridge				Long-Range Buildout Cumulative Conditions without Potrero Bridge				Net Change	
	AM		PM		AM		PM			
Intersection	**ICU**	**LOS**	**ICU**	**LOS**	**ICU**	**LOS**	**ICU**	**LOS**	**AM**	**PM**
Freeway Ramp Intersections (County)										
7. I-5 SB Ramps & Henry Mayo Drive (SR-126)	.83	D	.90	D	.84	D	.90	D	.01	.00
9. The Old Road & I-5 SB Ramps	.81	D	1.06	F	.82	D	1.03	F	.01	-.03
10. I-5 SB Ramps & Magic Mountain Parkway	.75	C	.82	D	.76	C	.82	D	.01	.00
12. I-5 SB Ramps & Valencia Boulevard	.65	B	.96	E	.65	B	.96	E	.00	.00
14. I-5 SB Ramps & McBean Parkway	.62	B	.84	D	.62	B	.84	D	.00	.00
16. I-5 SB/Marriott & Pico Canyon Road/Lyons Avenue	.69	B	1.08	F	.66	B	.99	E	-.03	-.09
Freeway Ramp Intersections (City)										
8. I-5 NB Ramps & Henry Mayo Drive (SR-126)	.60	A	.71	C	.62	B	.71	C	.02	.00
11. I-5 NB Ramps & Magic Mountain Parkway	.76	C	.84	D	.76	C	.85	D	.00	.01
13. I-5 NB Ramps & Valencia Boulevard	.79	C	.84	D	.79	C	.85	D	.00	.01
15. I-5 NB Ramps & McBean Parkway	.62	B	.69	B	.61	B	.69	B	-.01	.00
17. I-5 NB On/Off & Lyons Avenue	.57	A	.79	C	.55	A	.79	C	-.02	.00
County Arterial Intersections										
25. The Old Road & Rye Canyon	.83	D	.89	D	.83	D	.89	D	.00	.00
26. The Old Road & Magic Mountain Parkway	.78	C	.89	D	.79	C	.90	D	.01	.01
27. The Old Road & Valencia Boulevard	.79	C	.89	D	.80	C	.89	D	.01	.00
28. The Old Road & McBean Parkway	.70	B	.89	D	.70	B	.90	D	.00	.01
29. The Old Road & Pico Canyon Road	.91	E	.97	E	.88	D	.95	E	-.03	-.02
81. Commerce Center Drive & Henry Mayo Drive	.71	C	.71	C	.71	C	.69	B	.00	-.02
82. Commerce Center Drive & SR-126 EB Ramps	.42	A	.43	A	.42	A	.43	A	.00	.00
83. Commerce Center Drive & SR-126 WB Ramps	.85	D	.83	D	.83	D	.82	D	-.02	-.01
105. Westridge Parkway & Valencia Boulevard	.59	A	.76	C	.58	A	.75	C	-.01	-.01

(Continued)

Table 1: ICU and LOS Comparison – Long-Range Buildout Cumulative Conditions (2035) with and without Potrero Canyon Road Bridge (Continued)

	Long-Range Buildout Cumulative Conditions with Potrero Bridge				Long-Range Buildout Cumulative Conditions without Potrero Bridge				Net Change	
	AM		PM		AM		PM			
Intersection	**ICU**	**LOS**	**ICU**	**LOS**	**ICU**	**LOS**	**ICU**	**LOS**	**AM**	**PM**
108. Stevenson Ranch Parkway & Pico Canyon Road	.61	B	.79	C	.54	A	.79	C	-.07	.00
109. Stevenson Ranch Parkway & Poe Parkway/Chase	.48	A	.58	A	.48	A	.58	A	.00	.00
City Arterial Intersections										
30. Avenue Stanford & Rye Canyon Road	.57	A	.78	C	.57	A	.81	D	.00	.03
33. Copper Hill Drive & Newhall Ranch Road	.81	D	.87	D	.81	D	.86	D	.00	-.01
35. Copper Hill Drive & Decoro Drive	.72	C	.81	D	.72	C	.81	D	.00	.00
36. Tourney Road & Valencia Boulevard	.68	B	.88	D	.67	B	.90	D	-.01	.02
37. Tourney Road & Magic Mountain Parkway	.74	C	.82	D	.75	C	.81	D	.01	-.01
44. McBean Parkway & Valencia Boulevard	.70	B	.94	E	.69	B	.94	E	-.01	.00
45. McBean Parkway & Magic Mountain Parkway	.81	D	1.06	F	.83	D	1.06	F	.02	.00
48. McBean Parkway & Newhall Ranch Road	.83	D	.89	D	.83	D	.89	D	.00	.00
49. McBean Parkway & Decoro Drive	.65	B	.66	B	.65	B	.66	B	.00	.00
51. Wiley Canyon Road & Lyons Avenue	.63	B	.96	E	.63	B	.92	E	.00	-.04
54. Orchard Village Road & Wiley Canyon Road	.98	E	1.27	F	.97	E	1.27	F	-.01	.00
55. Orchard Village Road & McBean Parkway	.91	E	1.18	F	.91	E	1.18	F	.00	.00
57. Valencia Boulevard & Magic Mountain Parkway	.93	E	1.12	F	.93	E	1.11	F	.00	-.01
65. Bouquet Canyon Road & Soledad Canyon Road	.79	C	.99	E	.80	C	.99	E	.01	.00
66. Bouquet Canyon Road & Newhall Ranch Road	.95	E	.97	E	.95	E	.96	E	.00	-.01

Note: ICUs include Project Mitigation as identified in the Mission Village TIA.

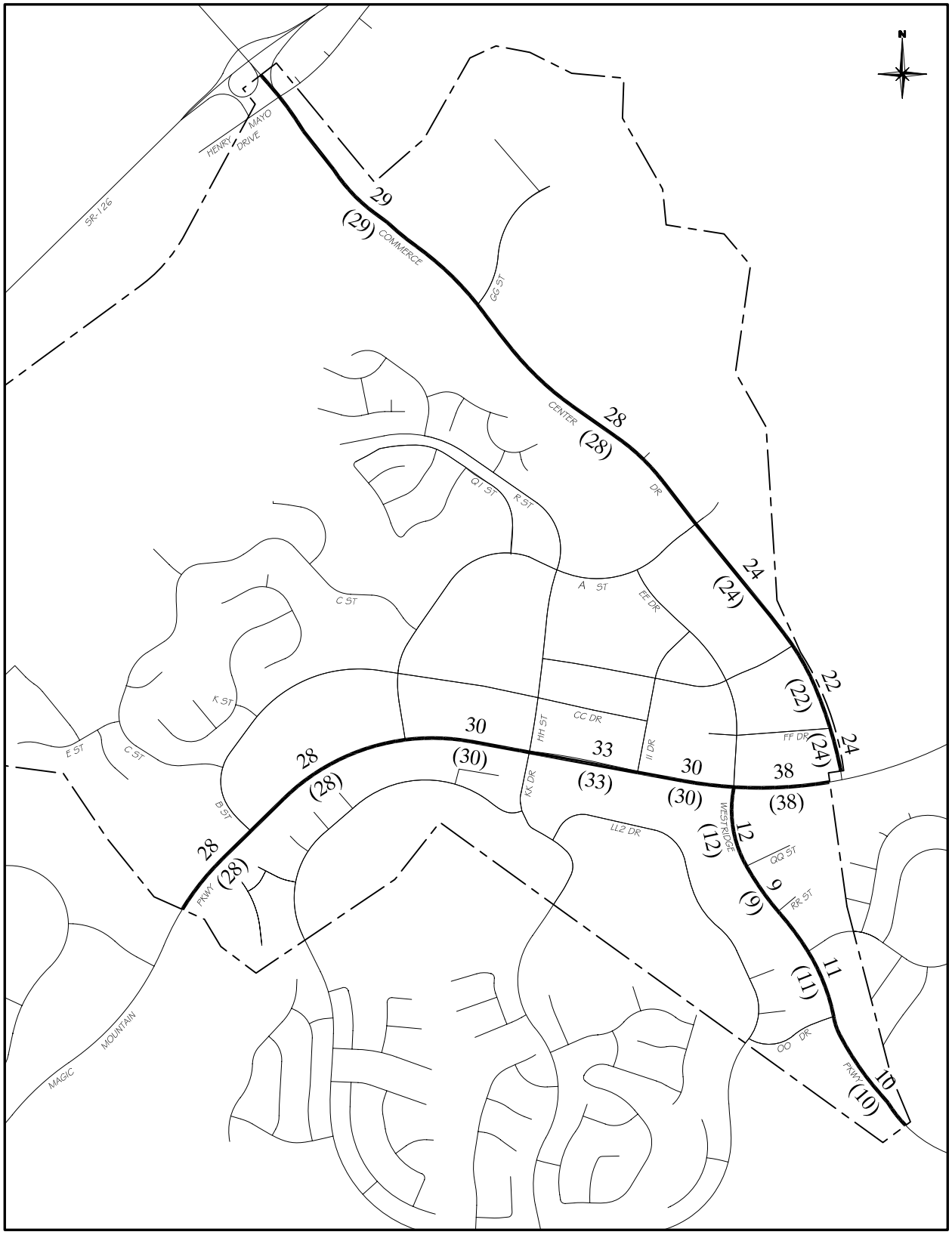
Level of service ranges:						
	.00 - .60	A	.71 - .80	C	.91 – 1.00	E
	.61 - .70	B	.81 - .90	D	Above 1.00	F

Table 2: Freeway Volumes and V/C Ratios – Long-Range Buildout Cumulative Conditions (2035) with and without Potrero Canyon Road Bridge

Segment	Lanes	Capacity	Long-Range Buildout Cumulative Conditions with Bridge				Long-Range Buildout Cumulative Conditions without Bridge				Net Change	
			AM Pk Hr		PM Pk Hr		AM Pk Hr		PM Pk Hr			
			Vol	V/C	Vol	V/C	Vol	V/C	Vol	V/C	AM	PM
Northbound												
401. North of Lake Hughes	4M	8,000	3,400	.43	6,400	.80	3,400	.43	6,400	.80	.00	.00
402. Between Lake Hughes & Parker	4M	8,000	3,700	.46	7,500	.94	3,700	.46	7,600	.95	.00	.01
403. Between Parker & Hasley Canyon	4M + 1H	9,600	4,100	.43	9,000	.94	4,100	.43	9,000	.94	.00	.00
404. Between Hasley Canyon & SR-126	4M + 1H + 1A	10,600	5,700	.54	9,300	.88	5,800	.55	9,300	.88	.01	.00
405. Between SR-126 & Rye Canyon	4M + 1H	9,600	6,000	.63	8,100	.84	6,100	.64	8,100	.84	.01	.00
406. Between Rye Canyon & Magic Mtn	4M + 1H	9,600	6,000	.63	8,100	.84	6,100	.64	8,100	.84	.01	.00
407. Between Magic Mtn & Valencia	4M +1H + 1A	10,600	6,900	.65	8,100	.76	7,000	.66	8,100	.76	.01	.00
408. Between Valencia & McBean	4M + 1H	9,600	7,900	.82	8,800	.92	8,100	.84	8,800	.92	.02	.00
409. Between McBean & Pico/Lyons	4M + 1H	9,600	8,000	.83	8,400	.88	8,100	.84	8,400	.88	.01	.00
410. Between Pico/Lyons & Calgrove	4M + 1H + 1A	10,600	7,800	.74	8,400	.79	7,900	.75	8,400	.79	.01	.00
411. Between Calgrove & SR-14	4M + 1H + 1T	10,800	7,800	.72	8,300	.77	7,800	.72	8,300	.77	.00	.00
412. South of SR-14	6M + 2H + 2T	17,600	10,200	.58	17,400	.99	10,200	.58	17,400	.99	.00	.00
Southbound												
401. North of Lake Hughes	4M	8,000	4,700	.59	6,400	.80	4,700	.59	6,400	.80	.00	.00
402. Between Lake Hughes & Parker	4M	8,000	5,700	.71	6,900	.86	5,700	.71	6,900	.86	.00	.00
403. Between Parker & Hasley Canyon	4M + 1H	9,600	7,200	.75	8,000	.83	7,100	.74	8,000	.83	-.01	.00
404. Between Hasley Canyon & SR-126	4M + 1H	9,600	7,500	.78	9,300	.97	7,600	.79	9,300	.97	.01	.00
405. Between SR-126 & Rye Canyon	4M + 1H + 1A	10,600	7,400	.70	9,100	.86	7,500	.71	9,100	.86	.01	.00
406. Between Rye Canyon & Magic Mtn	4M + 1H + 1A	10,600	7,400	.70	10,300	.97	7,400	.70	10,300	.97	.00	.00
407. Between Magic Mtn & Valencia	4M + 1H	9,600	7,500	.78	9,900	1.03	7,500	.78	9,900	1.03	.00	.00
408. Between Valencia & McBean	4M + 1H + 1A	10,600	8,700	.82	10,500	.99	8,700	.82	10,500	.99	.00	.00
409. Between McBean & Pico/Lyons	4M + 1H	9,600	8,500	.89	10,000	1.04	8,400	.88	10,000	1.04	-.01	.00
410. Between Pico/Lyons & Calgrove	4M + 1H + 1T	10,800	8,200	.76	10,500	.97	8,200	.76	10,500	.97	.00	.00
411. Between Calgrove & SR-14	4M + 1H + 2T	12,000	8,300	.69	10,900	.91	8,300	.69	10,900	.91	.00	.00
412. South of SR-14	6M + 2H + 2T	17,600	16,800	.95	14,000	.80	16,800	.95	14,000	.80	.00	.00

M = Mixed-Flow/General Purpose Lane (Capacity = 2,000 vehicles per hour)
T = Truck Lane (Capacity = 1,200 vehicles per hour)
H = HOV Lane (Capacity = 1,600 vehicles per hour)
A = Auxiliary Lane (Capacity = 1,000 vehicles per hour)

Capacities derived from PeMS data and through discussions with Caltrans staff.



Legend

40	ADT with Potrero Bridge (000s)
(40)	ADT without Potrero Bridge (000s)
———	On-Site Arterial Roadway
— - —	Project Boundary

Figure 1

ADT VOLUMES ON-SITE - WITH AND WITHOUT POTRERO CANYON ROAD BRIDGE

Mission Village
Long-Range Buildout Conditions without Potrero Canyon Road Bridge

Austin-Foust Associates, Inc.
105370_ADT2.dwg

7. I-5 SB Ramps & SR-126

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	960	.33*	1150	.40*
SBT	0	0	0		0	
SBR	2	3200	790	.25	480	.15
EBL	0	0	0		0	
EBT	4	6400	1230	.19	2560	.40
EBR	f		1250		990	
WBL	0	0	0		0	
WBT	3	4800	2590	.54*	2320	.48*
WBR	f		30		220	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.97**		**.98**

2035 With Proj. & Mit. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	960	.33*	1150	.40*
SBT	0	0	0		0	
SBR	2	3200	790	.25	480	.15
EBL	0	0	0		0	
EBT	4	6400	1230	.19	2560	.40*
EBR	f		1250		990	
WBL	0	0	0		0	
WBT	4	6400	2590	.40*	2320	.36
WBR	f		30		220	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.83**		**.90**

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	930	.32*	1140	.40*
SBT	0	0	0		0	
SBR	2	3200	830	.26	480	.15
EBL	0	0	0		0	
EBT	4	6400	1200	.19	2580	.40*
EBR	f		1250		1000	
WBL	0	0	0		0	
WBT	4	6400	2660	.42*	2280	.36
WBR	f		30		220	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.84**		**.90**

8. I-5 NB Ramps & SR-126

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	3	5250	790	.15*	1270	.24*
NBT	0	0	0		0	
NBR	1	1750	130	.07	20	.01
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	4	7000	1550	.22	2590	.37*
EBR	f		380		830	
WBL	0	0	0		0	
WBT	3	5250	1850	.35*	1240	.24
WBR	f		540		870	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.60**		**.71**

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	3	5250	840	.16*	1270	.24*
NBT	0	0	0		0	
NBR	1	1750	130	.07	20	.01
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	4	7000	1520	.22	2590	.37*
EBR	f		370		840	
WBL	0	0	0		0	
WBT	3	5250	1870	.36*	1190	.23
WBR	f		540		870	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.62**		**.71**

9. The Old Rd & I-5 SB Ramps

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	30	.02	30	.02
NBT	2	3200	950	.30*	1680	.52*
NBR	1	1600	490	.31	730	.46
SBL	1	1600	240	.15*	1020	.64*
SBT	2	3200	320	.10	1090	.34
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1.5		940		260	
WBT	0	3200	0	.30*	0	.09*
WBR	0.5		30		20	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .85 1.35

2035 With Proj. & Mit. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	30	.02	30	.02
NBT	2	3200	950	.30*	1680	.52*
NBR	2	3200	490	.15	730	.23
SBL	2	2880	240	.08*	1020	.35*
SBT	3	4800	320	.07	1090	.23
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	2880	940	.33*	260	.09*
WBT	0	0	0		0	
WBR	1	1600	30	.02	20	.01
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .81 1.06

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	30	.02	30	.02
NBT	2	3200	960	.30*	1660	.52*
NBR	2	3200	490	.15	720	.23
SBL	2	2880	230	.08*	960	.33*
SBT	3	4800	310	.06	1140	.24
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	2880	970	.34*	240	.08*
WBT	0	0	0		0	
WBR	1	1600	40	.03	20	.01
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .82 1.03

10. I-5 SB Ramps & Magic Mtn

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		1270		1240	
SBT	0.5	3200	0	.40*	0	.39*
SBR	2	3200	140	.04	140	.04
EBL	0	0	0		0	
EBT	3	4800	1060	.22	1860	.39*
EBR	2	3200	1090	.34	820	.26
WBL	2	2880	100	.03	210	.07*
WBT	4	6400	2520	.39*	2640	.41
WBR	0	0	0		0	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .89 .95

2035 With Proj. & Mit. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2.5		1270		1240	
SBT	0.5	4800	0	.26*	0	.26*
SBR	1	1600	140	.09	140	.09
EBL	0	0	0		0	
EBT	3	4800	1060	.22	1860	.39*
EBR	2	3200	1090	.34	820	.26
WBL	2	2880	100	.03	210	.07*
WBT	4	6400	2520	.39*	2640	.41
WBR	0	0	0		0	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .75 .82

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2.5		1280		1230	
SBT	0.5	4800	0	.27*	0	.26*
SBR	1	1600	140	.09	130	.08
EBL	0	0	0		0	
EBT	3	4800	1060	.22	1870	.39*
EBR	2	3200	1070	.33	820	.26
WBL	2	2880	100	.03	210	.07*
WBT	4	6400	2520	.39*	2640	.41
WBR	0	0	0		0	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .76 .82

11. I-5 NB Ramps & Magic Mtn

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	1210	.35*	1120	.32*
NBT	0.5	3500	0	.13	0	.09
NBR	1.5		460		330	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	2	3500	120	.03	300	.09
EBT	3	5250	2210	.42*	2790	.53*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3.5	8750	1410	{.21}	1740	{.29}
WBR	1.5		690		1120	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .87 .95

2035 With Proj. & Mit. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2.5		1210	{.24}*	1120	.21*
NBT	0	7000	0	.24	0	
NBR	1.5		460		330	.19
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	2	3500	120	.03	300	.09
EBT	3	5250	2210	.42*	2790	.53*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3.5	8750	1410	{.20}	1740	{.30}
WBR	1.5		690		1120	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .76 .84

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2.5		1200	{.24}*	1140	.22*
NBT	0	7000	0	.24	0	
NBR	1.5		460		280	.16
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	2	3500	130	.04	300	.09
EBT	3	5250	2220	.42*	2800	.53*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3.5	8750	1420	{.20}	1710	{.29}
WBR	1.5		670	{.20}	1130	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .76 .85

12. I-5 SB Ramps & Valencia

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	340	.12*	280	.10*
SBT	0	0	0		0	
SBR	1	1600	370	.23	520	.33
EBL	0	0	0		0	
EBT	3	4800	1330	.28	1610	.34
EBR	f		1000		740	
WBL	0	0	0		0	
WBT	2	3200	1520	.48*	2530	.79*
WBR	f		1160		830	
Right Turn Adjustment			SBR	.11*	SBR	.23*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.81**		**1.22**

2035 With Proj. & Mit. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	340	.12*	280	.10*
SBT	0	0	0		0	
SBR	1	1600	370	.23	520	.33
EBL	0	0	0		0	
EBT	3	4800	1330	.28	1610	.34
EBR	f		1000		740	
WBL	0	0	0		0	
WBT	3	4800	1520	.32*	2530	.53*
WBR	f		1160		830	
Right Turn Adjustment			SBR	.11*	SBR	.23*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.65**		**.96**

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	340	.12*	280	.10*
SBT	0	0	0		0	
SBR	1	1600	370	.23	550	.34
EBL	0	0	0		0	
EBT	3	4800	1310	.27	1660	.35
EBR	f		1030		740	
WBL	0	0	0		0	
WBT	3	4800	1520	.32*	2510	.52*
WBR	f		1150		850	
Right Turn Adjustment			SBR	.11*	SBR	.24*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.65**		**.96**

13. I-5 NB Ramps & Valencia

2035 With Proj. (With Potrero Bridge)

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	2	3500	640	.18*	490	.14*
NBT	0	0	0		0	
NBR	2	3500	1230	.35	1240	.35
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5250	1590	.33*	1750	.37*
EBR	0	0	140		200	
WBL	2	3500	180	.05*	290	.08*
WBT	4	7000	2140	.31	2910	.42
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.13*	NBR	.15*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.79**		**.84**

2035 With Proj. & Mit. (Without Potrero Bridge)

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	2	3500	640	.18*	460	.13*
NBT	0	0	0		0	
NBR	2	3500	1230	.35	1240	.35
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5250	1580	.33*	1800	.38*
EBR	0	0	140		190	
WBL	2	3500	180	.05*	290	.08*
WBT	4	7000	2120	.30	2930	.42
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.13*	NBR	.16*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.79**		**.85**

14. I-5 SB Ramps & McBean

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1600	450	.28*	490	.31*
SBT	0	0	0		0	
SBR	1	1600	280	.18	260	.16
EBL	0	0	0		0	
EBT	2	3200	1160	.36*	1330	.42
EBR	1	1600	320	.20	110	.07
WBL	0	0	0		0	
WBT	2	3200	930	.29	1830	.57*
WBR	1	1600	390	.24	310	.19
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for WBR

TOTAL CAPACITY UTILIZATION .74 .98

2035 With Proj. & Mit. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	450	.16*	490	.17*
SBT	0	0	0		0	
SBR	1	1600	280	.18	260	.16
EBL	0	0	0		0	
EBT	2	3200	1160	.36*	1330	.42
EBR	1	1600	320	.20	110	.07
WBL	0	0	0		0	
WBT	2	3200	930	.29	1830	.57*
WBR	1	1600	390	.24	310	.19
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for WBR

TOTAL CAPACITY UTILIZATION .62 .84

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	480	.17*	500	.17*
SBT	0	0	0		0	
SBR	1	1600	280	.18	250	.16
EBL	0	0	0		0	
EBT	2	3200	1130	.35*	1300	.41
EBR	1	1600	320	.20	120	.08
WBL	0	0	0		0	
WBT	2	3200	950	.30	1810	.57*
WBR	1	1600	390	.24	350	.22
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for WBR

TOTAL CAPACITY UTILIZATION .62 .84

15. I-5 NB Ramps & McBean

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	350	.10*	530	.15*
NBT	0	0	0		0	
NBR	2	3500	540	.15	630	.18
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3500	1280	.37*	1430	.41*
EBR	1	1750	370	.21	370	.21
WBL	0	0	0		0	
WBT	3	5250	1000	.21	1600	.36
WBR	0	0	120		300	
Right Turn Adjustment			NBR	.05*	NBR	.03*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.62**		**.69**

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	360	.10*	520	.15*
NBT	0	0	0		0	
NBR	2	3500	540	.15	670	.19
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3500	1270	.36*	1410	.40*
EBR	1	1750	370	.21	380	.22
WBL	0	0	0		0	
WBT	3	5250	1010	.22	1620	.37
WBR	0	0	120		310	
Right Turn Adjustment			NBR	.05*	NBR	.04*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.61**		**.69**

16. I-5 SB/Marriott & Pico/Lyons

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	1	1600	70	.04	410	.26
SBL	1.5		790		330	
SBT	0.5	3200	10	.25*	110	.14*
SBR	1	1600	340	.21	20	.01
EBL	0	0	0		0	
EBT	2	3200	650	.21	1600	.51*
EBR	0	0	30		40	
WBL	1	1600	30	.02	530	.33*
WBT	2	3200	1080	.34*	1330	.42
WBR	1	1600	280	.18	250	.16
Right Turn Adjustment					NBR	.01*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .69 1.09

2035 With Proj. & Mit. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	1	1600	70	.04	410	.26
SBL	1.5		790		330	
SBT	0.5	3200	10	.25*	110	.14*
SBR	1	1600	340	.21	20	.01
EBL	0	0	0		0	
EBT	2	3200	650	.21	1600	.51*
EBR	0	0	30		40	
WBL	1	1600	30	.02	530	.33*
WBT	2	3200	1080	.34*	1330	.42
WBR	1	1600	280	.18	250	.16
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .69 1.08

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	1	1600	70	.04	410	.26
SBL	1.5		780		350	
SBT	0.5	3200	10	.25*	10	.11*
SBR	1	1600	340	.21	70	.04
EBL	0	0	0		0	
EBT	2	3200	660	.22	1380	.45*
EBR	0	0	30		50	
WBL	1	1600	30	.02	530	.33*
WBT	2	3200	1000	.31*	1780	.40
WBR	1	1600	280	.18	230	.16
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .66 .99

17. I-5 NB On/Off & Lyons Ave

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		230	{.07}*	740	{.21}*
NBT	0.5	3500	10	.07	0	.21
NBR	f		280		400	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1750	70	.04	90	.05
EBT	2	3500	1390	.40*	1560	.45*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	5250	1180	.32	1310	.37
WBR	0	0	500		970	.55
Right Turn Adjustment					WBR	.15*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .57 .91

2035 With Proj. & Mit. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		230	{.07}*	740	{.21}*
NBT	0.5	3500	10	.07	0	.21
NBR	f		280		400	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1750	70	.04	90	.05*
EBT	2	3500	1390	.40*	1560	.45
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1.5	5250	1180	.34	1310	.43*
WBR	1.5		500	.29	970	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .57 .79

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		150	{.05}*	740	{.21}*
NBT	0.5	3500	10	.05	0	.21
NBR	f		280		400	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1750	60	.03	80	.05*
EBT	2	3500	1390	.40*	1530	.44
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1.5	5250	1170	.33	1290	.43*
WBR	1.5		500	.29	970	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .55 .79

25. The Old Rd & Rye Canyon

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	1000	.63*	1310	.82*
NBR	f		1560		1290	
SBL	1	1600	680	.43*	760	.48*
SBT	2	3200	480	.15	1010	.32
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	1010	.63*	1120	.70*
WBT	0	0	0		0	
WBR	f		770		1240	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION 1.79 2.10

2035 With Proj. & Mit. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	4800	1000	.21*	1310	.27*
NBR	2	3200	1560	.49	1290	.40
SBL	2	2880	680	.24*	760	.26*
SBT	3	4800	480	.10	1010	.21
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	3	4320	1010	.23*	1120	.26*
WBT	0	0	0		0	
WBR	2	3200	770	.24	1240	.39
Right Turn Adjustment			NBR	.05*		
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for WBR NBR

TOTAL CAPACITY UTILIZATION .83 .89

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	4800	1000	.21*	1260	.26*
NBR	2	3200	1570	.49	1290	.40
SBL	2	2880	700	.24*	780	.27*
SBT	3	4800	490	.10	1030	.21
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	3	4320	1010	.23*	1140	.26*
WBT	0	0	0		0	
WBR	2	3200	780	.24	1270	.40
Right Turn Adjustment			NBR	.05*		
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for WBR NBR

TOTAL CAPACITY UTILIZATION .83 .89

26. The Old Rd & Magic Mountain

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	2880	440	.15	350	.12*
NBT	3	4800	530	.11*	370	.08
NBR	1	1600	150	.09	140	.09
SBL	2	2880	700	.24*	490	.17
SBT	3	4800	110	.02	660	.14*
SBR	1	1600	400	.25	760	.48
EBL	2	2880	420	.15*	490	.17
EBT	4	6400	1300	.20	2050	.32*
EBR	1	1600	110	.07	560	.35
WBL	2	2880	190	.07	170	.06*
WBT	4	6400	1130	.18*	1150	.18
WBR	f		1340		1450	
Right Turn Adjustment					SBR	.19*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .78 .93

2035 With Proj. & Mit. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	2880	440	.15	350	.12*
NBT	3	4800	530	.11*	370	.08
NBR	1	1600	150	.09	140	.09
SBL	2	2880	700	.24*	490	.17
SBT	3	4800	110	.02	660	.14*
SBR	1	1600	400	.25	760	.48
EBL	2	2880	420	.15*	490	.17
EBT	4	6400	1300	.20	2050	.32*
EBR	1	1600	110	.07	560	.35
WBL	2	2880	190	.07	170	.06*
WBT	4	6400	1130	.18*	1150	.18
WBR	f		1340		1450	
Right Turn Adjustment					SBR	.15*
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR

TOTAL CAPACITY UTILIZATION .78 .89

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	2880	440	.15	350	.12*
NBT	3	4800	530	.11*	350	.07
NBR	1	1600	150	.09	140	.09
SBL	2	2880	710	.25*	510	.18
SBT	3	4800	110	.02	660	.14*
SBR	1	1600	400	.25	790	.49
EBL	2	2880	430	.15*	490	.17
EBT	4	6400	1270	.20	2040	.32*
EBR	1	1600	120	.08	560	.35
WBL	2	2880	190	.07	180	.06*
WBT	4	6400	1120	.18*	1180	.18
WBR	f		1350		1420	
Right Turn Adjustment					SBR	.16*
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR

TOTAL CAPACITY UTILIZATION .79 .90

27. The Old Rd & Valencia

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	2880	760	.26*	400	.14*
NBT	3	4800	340	.07	590	.12
NBR	1	1600	130	.08	430	.27
SBL	2	2880	130	.05	380	.13
SBT	3	4800	190	.04*	740	.15*
SBR	1	1600	180	.11	220	.14
EBL	2	2880	260	.09*	240	.08*
EBT	4	6400	2240	.35	1620	.25
EBR	1	1600	330	.21	650	.41
WBL	2	2880	120	.04	520	.18
WBT	3	4800	1430	.30*	2020	.42*
WBR	f		380		470	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.79**		**.89**

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	2880	780	.27*	390	.14*
NBT	3	4800	340	.07	580	.12
NBR	1	1600	120	.08	470	.29
SBL	2	2880	130	.05	400	.14
SBT	3	4800	190	.04*	710	.15*
SBR	1	1600	180	.11	230	.14
EBL	2	2880	270	.09*	240	.08*
EBT	4	6400	2260	.35	1620	.25
EBR	1	1600	290	.18	620	.39
WBL	2	2880	120	.04	550	.19
WBT	3	4800	1430	.30*	2010	.42*
WBR	f		380		460	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.80**		**.89**

28. The Old Rd & Stevenson Ranch

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	80	.05	140	.09*
NBT	3	4800	440	.09*	810	.17
NBR	1	1600	280	.18	630	.39
SBL	1	1600	160	.10*	330	.21
SBT	2	3200	250	.08	1110	.35*
SBR	1	1600	20	.01	280	.18
EBL	2	2880	140	.05	210	.07*
EBT	3	4800	1090	.23*	470	.10
EBR	1	1600	120	.08	90	.06
WBL	2	2880	250	.09*	900	.31
WBT	2	3200	260	.16	930	.37*
WBR	0	0	670	.42	260	
Right Turn Adjustment			Multi	.09*		
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .70 .98

2035 With Proj. & Mit. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	80	.05	140	.09
NBT	3	4800	440	.09*	810	.17*
NBR	1	1600	280	.18	630	.39
SBL	1	1600	160	.10*	330	.21*
SBT	3	4800	250	.05	1110	.23
SBR	1	1600	20	.01	280	.18
EBL	2	2880	140	.05	210	.07
EBT	3	4800	1090	.23*	470	.10*
EBR	1	1600	120	.08	90	.06
WBL	2	2880	250	.09*	900	.31*
WBT	2	3200	260	.08	930	.29
WBR	1	1600	670	.42	260	.16
Right Turn Adjustment			Multi	.09*		
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .70 .89

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	80	.05	130	.08
NBT	3	4800	440	.09*	820	.17*
NBR	1	1600	290	.18	610	.38
SBL	1	1600	120	.08*	350	.22*
SBT	3	4800	250	.05	1070	.22
SBR	1	1600	20	.01	280	.18
EBL	2	2880	130	.05	230	.08
EBT	3	4800	1090	.23*	460	.10*
EBR	1	1600	120	.08	80	.05
WBL	2	2880	250	.09*	880	.31*
WBT	2	3200	260	.08	940	.29
WBR	1	1600	670	.42	250	.16
Right Turn Adjustment			Multi	.11*		
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .70 .90

29. The Old Rd & Pico Canyon

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	100	.06	560	.35*
NBT	2	3200	240	.09*	550	.23
NBR	0	0	50		200	
SBL	2	2880	320	.11*	730	.25
SBT	2	3200	160	.09	450	.24*
SBR	0	0	130		310	
EBL	1	1600	380	.24*	50	.03
EBT	2	3200	350	.11	480	.15*
EBR	1	1600	80	.05	690	.43
WBL	1	1600	10	.01	180	.11*
WBT	2	3200	1180	.37*	370	.12
WBR	f		290		680	
Right Turn Adjustment					EBR	.02*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.91**		**.97**

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	100	.06	180	.11*
NBT	2	3200	240	.09*	550	.26
NBR	0	0	50		290	
SBL	2	2880	320	.11*	410	.14
SBT	2	3200	160	.09	700	.31*
SBR	0	0	130		300	
EBL	1	1600	380	.24*	50	.03
EBT	2	3200	360	.11	860	.27*
EBR	1	1600	80	.05	370	.23
WBL	1	1600	10	.01	250	.16*
WBT	2	3200	1080	.34*	780	.24
WBR	f		310		680	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.88**		**.95**

30. Ave Stanford & Rye Canyon

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	210	.06*	150	.04*
NBT	1	1750	10	.03	210	.15
NBR	0	0	50		50	
SBL	1	1750	30	.02	120	.07
SBT	1	1750	60	.03*	390	.22*
SBR	1	1750	100	.06	340	.19
EBL	1	1750	150	.09	130	.07*
EBT	3	5250	1760	.37*	1750	.38
EBR	0	0	180		240	
WBL	1	1750	10	.01*	20	.01
WBT	3	5250	1390	.27	1770	.35*
WBR	0	0	10		80	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.57**		**.78**

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	220	.06*	160	.05*
NBT	1	1750	10	.03	200	.14
NBR	0	0	50		50	
SBL	1	1750	30	.02	110	.06
SBT	1	1750	50	.03*	400	.23*
SBR	1	1750	100	.06	340	.19
EBL	1	1750	150	.09	130	.07*
EBT	3	5250	1780	.37*	1760	.38
EBR	0	0	180		250	
WBL	1	1750	10	.01*	20	.01
WBT	3	5250	1400	.27	1800	.36*
WBR	0	0	10		80	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.57**		**.81**

33. Rye/Copper Hill & NRR

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	440	.13*	380	.11
NBT	3	5250	1160	.22	1320	.25*
NBR	f		190		100	
SBL	2	3500	130	.04	250	.07*
SBT	3	5250	1620	.31*	930	.18
SBR	f		1210		800	
EBL	2	3500	330	.09*	1040	.30*
EBT	4	7000	510	.07	2010	.29
EBR	1	1750	280	.16	480	.27
WBL	2	3500	330	.09	460	.13
WBT	4	7000	1260	.18*	1020	.15*
WBR	f		680		300	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .81 .87

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	450	.13*	380	.11
NBT	3	5250	1160	.22	1330	.25*
NBR	f		200		90	
SBL	2	3500	130	.04	260	.07*
SBT	3	5250	1620	.31*	890	.17
SBR	f		1210		790	
EBL	2	3500	330	.09*	1040	.30*
EBT	4	7000	480	.07	2000	.29
EBR	1	1750	280	.16	530	.30
WBL	2	3500	330	.09	470	.13
WBT	4	7000	1260	.18*	1010	.14*
WBR	f		680		300	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .81 .86

35. Copper Hill & Decoro

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5250	890	.17	2940	.56*
NBR	1	1750	180	.10	70	.04
SBL	1	1750	340	.19	140	.08*
SBT	3	5250	3050	.58*	670	.13
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3500	150	.04*	90	.03*
WBT	0	0	0		0	
WBR	1	1750	130	.07	230	.13
Right Turn Adjustment					WBR	.04*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.72**		**.81**

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5250	890	.17	2950	.56*
NBR	1	1750	180	.10	70	.04
SBL	1	1750	340	.19	140	.08*
SBT	3	5250	3050	.58*	670	.13
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3500	150	.04*	90	.03*
WBT	0	0	0		0	
WBR	1	1750	130	.07	230	.13
Right Turn Adjustment					WBR	.04*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.72**		**.81**

36. Tourney & Valencia

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3500	170	.05*	450	.13*
SBT	0	0	0		0	
SBR	1	1750	230	.13	670	.38
EBL	2	3500	700	.20*	330	.09*
EBT	4	7000	2100	.30	2660	.38
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	4	7000	2010	.33*	2450	.38*
WBR	0	0	270		190	
Right Turn Adjustment					SBR	.18*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.68**		**.88**

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3500	170	.05*	450	.13*
SBT	0	0	0		0	
SBR	1	1750	230	.13	690	.39
EBL	2	3500	710	.20*	410	.12*
EBT	4	7000	2090	.30	2640	.38
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	4	7000	1990	.32*	2450	.38*
WBR	0	0	270		180	
Right Turn Adjustment					SBR	.17*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.67**		**.90**

37. Tourney & Magic Mountain

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	40	.02	290	.17*
NBT	2	3500	440	.13*	470	.17
NBR	0	0	30		140	
SBL	1	1750	30	.02*	100	.06
SBT	2	3500	230	.07	500	.14*
SBR	2	3500	220	.06	670	.19
EBL	2	3500	490	.14*	370	.11
EBT	3	5250	1780	.34	2520	.48*
EBR	1	1750	260	.15	50	.03
WBL	1	1750	160	.09	70	.04*
WBT	3	5250	1780	.35*	1570	.30
WBR	0	0	50		10	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .74 .93

2035 With Proj. & Mit. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	40	.02	290	.17*
NBT	2	3500	440	.13*	470	.17
NBR	0	0	30		140	
SBL	1	1750	30	.02*	100	.06
SBT	2	3500	230	.07	500	.14*
SBR	2	3500	220	.06	670	.19
EBL	2	3500	490	.14*	370	.11*
EBT	4	7000	1780	.25	2520	.36
EBR	1	1750	260	.15	50	.03
WBL	1	1750	160	.09	70	.04
WBT	3	5250	1780	.35*	1570	.30*
WBR	0	0	50		10	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .74 .82

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	40	.02	280	.16*
NBT	2	3500	450	.14*	540	.19
NBR	0	0	30		140	
SBL	1	1750	30	.02*	110	.06
SBT	2	3500	230	.07	510	.15*
SBR	2	3500	220	.06	670	.19
EBL	2	3500	490	.14*	330	.09
EBT	4	7000	1800	.26	2530	.36*
EBR	1	1750	260	.15	40	.02
WBL	1	1750	160	.09	70	.04*
WBT	3	5250	1780	.35*	1550	.30
WBR	0	0	50		10	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .75 .81

44. McBean & Valencia

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	270	.08*	170	.05
NBT	3	5250	1050	.20	1360	.26*
NBR	2	3500	330	.09	700	.20
SBL	2	3500	60	.02	230	.07*
SBT	3	5250	900	.17*	1390	.26
SBR	2	3500	880	.25	1030	.29
EBL	2	3500	510	.15*	1000	.29*
EBT	3	5250	1110	.21	1250	.24
EBR	1	1750	20	.01	300	.17
WBL	2	3500	430	.12	700	.20
WBT	3	5250	1060	.20*	1150	.22*
WBR	1	1750	230	.13	400	.23
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR

TOTAL CAPACITY UTILIZATION .70 .94

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	280	.08*	170	.05
NBT	3	5250	1050	.20	1400	.27*
NBR	2	3500	330	.09	640	.18
SBL	2	3500	50	.01	270	.08*
SBT	3	5250	900	.17*	1390	.26
SBR	2	3500	870	.25	1020	.29
EBL	2	3500	500	.14*	950	.27*
EBT	3	5250	1120	.21	1300	.25
EBR	1	1750	20	.01	290	.17
WBL	2	3500	430	.12	710	.20
WBT	3	5250	1060	.20*	1170	.22*
WBR	1	1750	230	.13	400	.23
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR

TOTAL CAPACITY UTILIZATION .69 .94

45. McBean & Magic Mtn

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	200	.06	350	.10
NBT	3	5250	1280	.24*	2450	.47*
NBR	f		40		270	
SBL	2	3500	590	.17*	330	.09*
SBT	4	7000	1880	.27	2100	.30
SBR	f		730		110	
EBL	2	3500	480	.14	450	.13
EBT	2	3500	1490	.43*	1760	.50*
EBR	1	1750	130	.07	450	.26
WBL	2	3500	70	.02*	210	.06*
WBT	3	5250	830	.16	1290	.25
WBR	1	1750	370	.21	560	.32
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .96 1.22

2035 With Proj. & Mit. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	200	.06	350	.10
NBT	3	5250	1280	.24*	2450	.47*
NBR	f		40		270	
SBL	2	3500	590	.17*	330	.09*
SBT	4	7000	1880	.27	2100	.30
SBR	f		730		110	
EBL	2	3500	480	.14	450	.13
EBT	3	5250	1490	.28*	1760	.34*
EBR	1	1750	130	.07	450	.26
WBL	2	3500	70	.02*	210	.06*
WBT	3	5250	830	.16	1290	.25
WBR	1	1750	370	.21	560	.32
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for WBR

TOTAL CAPACITY UTILIZATION .81 1.06

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	200	.06	350	.10
NBT	3	5250	1290	.25*	2450	.47*
NBR	f		40		270	
SBL	2	3500	590	.17*	310	.09*
SBT	4	7000	1880	.27	2120	.30
SBR	f		730		100	
EBL	2	3500	510	.15*	450	.13
EBT	3	5250	1470	.28	1760	.34*
EBR	1	1750	130	.07	460	.26
WBL	2	3500	70	.02	220	.06*
WBT	3	5250	830	.16*	1280	.24
WBR	1	1750	380	.22	560	.32
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for WBR

TOTAL CAPACITY UTILIZATION .83 1.06

48. McBean & Newhall Ranch

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	250	.07	290	.08
NBT	3	5250	910	.17*	2010	.38*
NBR	1	1750	150	.09	1210	.69
SBL	2	3500	530	.15*	180	.05*
SBT	4	7000	1750	.25	1330	.19
SBR	f		190		60	
EBL	2	3500	90	.03	250	.07*
EBT	4	7000	840	.12*	2000	.29
EBR	1	1750	320	.18	620	.35
WBL	2	3500	990	.28*	260	.07
WBT	3	5250	1840	.35	1630	.31*
WBR	1	1750	60	.03	520	.30
Right Turn Adjustment			EBR	.01*	NBR	.24*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .83 1.15

2035 With Proj. & Mit. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	250	.07	290	.08
NBT	3	5250	910	.17*	2010	.38*
NBR	2	3500	150	.04	1210	.35
SBL	2	3500	530	.15*	180	.05*
SBT	4	7000	1750	.25	1330	.19
SBR	f		190		60	
EBL	2	3500	90	.03	250	.07
EBT	4	7000	840	.12*	2000	.29*
EBR	1	1750	320	.18	620	.35
WBL	2	3500	990	.28*	260	.07*
WBT	4	7000	1840	.26	1630	.23
WBR	1	1750	60	.03	520	.30
Right Turn Adjustment			EBR	.01*		
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .83 .89

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	260	.07	290	.08
NBT	3	5250	910	.17*	2010	.38*
NBR	2	3500	180	.05	1210	.35
SBL	2	3500	530	.15*	180	.05*
SBT	4	7000	1740	.25	1310	.19
SBR	f		180		60	
EBL	2	3500	90	.03	250	.07
EBT	4	7000	820	.12*	2010	.29*
EBR	1	1750	320	.18	630	.36
WBL	2	3500	990	.28*	260	.07*
WBT	4	7000	1840	.26	1630	.23
WBR	1	1750	60	.03	510	.29
Right Turn Adjustment			EBR	.01*		
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .83 .89

49. McBean & Decoro

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	170	.10*	50	.03
NBT	3	5250	400	.08	1520	.29*
NBR	1	1750	160	.09	560	.32
SBL	1	1750	120	.07	150	.09*
SBT	3	5250	1420	.27*	690	.13
SBR	1	1750	180	.10	40	.02
EBL	2	3500	50	.01*	280	.08
EBT	2	3500	90	.03	380	.11*
EBR	1	1750	100	.06	100	.06
WBL	2	3500	450	.13	250	.07*
WBT	2	3500	530	.17*	140	.08
WBR	0	0	70		130	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.65**		**.66**

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	170	.10*	50	.03
NBT	3	5250	400	.08	1520	.29*
NBR	1	1750	160	.09	570	.33
SBL	1	1750	120	.07	150	.09*
SBT	3	5250	1410	.27*	680	.13
SBR	1	1750	180	.10	40	.02
EBL	2	3500	50	.01*	290	.08
EBT	2	3500	90	.03	380	.11*
EBR	1	1750	100	.06	100	.06
WBL	2	3500	450	.13	250	.07*
WBT	2	3500	530	.17*	140	.08
WBR	0	0	70		130	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.65**		**.66**

51. Wiley Cyn & Lyons

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	160	.09*	320	.18*
NBT	2	3500	190	.05	640	.18
NBR	1	1750	180	.10	330	.19
SBL	1	1750	180	.10	110	.06
SBT	2	3500	500	.14*	870	.25*
SBR	1	1750	470	.27	580	.33
EBL	2	3500	250	.07	540	.15
EBT	2	3500	970	.28*	1330	.38*
EBR	1	1750	100	.06	20	.01
WBL	1	1750	170	.10*	290	.17*
WBT	3	5250	620	.12	1250	.27
WBR	0	0	10		160	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .71 1.08

2035 With Proj. & Mit. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	160	.09*	320	.18*
NBT	2	3500	190	.05	640	.18
NBR	1	1750	180	.10	330	.19
SBL	1	1750	180	.10	110	.06
SBT	2	3500	500	.14*	870	.25*
SBR	1	1750	470	.27	580	.33
EBL	2	3500	250	.07	540	.15
EBT	3	5250	970	.20*	1330	.26*
EBR	0	0	100		20	
WBL	1	1750	170	.10*	290	.17*
WBT	3	5250	620	.12	1250	.27
WBR	0	0	10		160	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .63 .96

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	160	.09*	310	.18*
NBT	2	3500	190	.05	640	.18
NBR	1	1750	180	.10	340	.19
SBL	1	1750	180	.10	250	.14
SBT	2	3500	500	.14*	700	.20*
SBR	1	1750	470	.27	580	.33
EBL	2	3500	250	.07	540	.15*
EBT	3	5250	970	.20*	1190	.25
EBR	0	0	100		130	
WBL	1	1750	170	.10*	290	.17
WBT	3	5250	620	.12	1250	.27*
WBR	0	0	10		160	
Right Turn Adjustment					SBR	.02*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .63 .92

54. Orchard Village & Wiley Cyn

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	40	.02	70	.04
NBT	2	3500	710	.30*	1000	.46*
NBR	0	0	340		600	
SBL	1	1750	570	.33*	680	.39*
SBT	2	3500	550	.16	1090	.31
SBR	1	1750	340	.19	190	.11
EBL	2	3500	240	.07	310	.09
EBT	2	3500	360	.13*	760	.26*
EBR	0	0	110		150	
WBL	1	1750	390	.22*	400	.23*
WBT	2	3500	670	.19	690	.20
WBR	1	1750	500	.29	560	.32
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION 1.08 1.44

2035 With Proj. & Mit. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	40	.02	70	.04
NBT	2	3500	710	.20*	1000	.29*
NBR	1	1750	340	.19	600	.34
SBL	1	1750	570	.33*	680	.39*
SBT	2	3500	550	.16	1090	.31
SBR	1	1750	340	.19	190	.11
EBL	2	3500	240	.07	310	.09
EBT	2	3500	360	.13*	760	.26*
EBR	0	0	110		150	
WBL	1	1750	390	.22*	400	.23*
WBT	2	3500	670	.19	690	.20
WBR	1	1750	500	.29	560	.32
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .98 1.27

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	40	.02	60	.03
NBT	2	3500	710	.20*	1010	.29*
NBR	1	1750	340	.19	610	.35
SBL	1	1750	560	.32*	680	.39*
SBT	2	3500	550	.16	1110	.32
SBR	1	1750	340	.19	160	.09
EBL	2	3500	240	.07	310	.09
EBT	2	3500	360	.13*	770	.26*
EBR	0	0	110		150	
WBL	1	1750	390	.22*	410	.23*
WBT	2	3500	680	.19	700	.20
WBR	1	1750	500	.29	550	.31
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .97 1.27

55. Orchard Village & McBean

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		990		860	
NBT	0.5	3500	60	.30*	60	.26*
NBR	2	3500	850	.24	1100	.31
SBL	0	0	10		60	
SBT	1	1750	20	.02*	70	.07*
SBR	d	1750	10	.01	30	.02
EBL	1	1750	50	.03	40	.02
EBT	3	5250	470	.13*	910	.26*
EBR	0	0	850	.49	1150	.66
WBL	2	3500	840	.24*	1190	.34*
WBT	3	5250	620	.12	900	.18
WBR	0	0	30		20	
Right Turn Adjustment			EBR	.13*	EBR	.20*
Clearance Interval				.10*		.10*

Note: Assumes N/S Split Phasing
Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .92 1.23

2035 With Proj. & Mit. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		990		860	
NBT	0.5	3500	60	.30*	60	.26*
NBR	2	3500	850	.24	1100	.31
SBL	1.5		10	.01	60	
SBT	1.5	5250	20	.01*	70	.02*
SBR	1	1750	10	.01	30	.02
EBL	1	1750	50	.03	40	.02
EBT	3	5250	470	.13*	910	.26*
EBR	0	0	850	.49	1150	.66
WBL	2	3500	840	.24*	1190	.34*
WBT	3	5250	620	.12	900	.18
WBR	0	0	30		20	
Right Turn Adjustment			EBR	.13*	EBR	.20*
Clearance Interval				.10*		.10*

Note: Assumes N/S Split Phasing
Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .91 1.18

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		990		850	
NBT	0.5	3500	60	.30*	60	.26*
NBR	2	3500	860	.25	1110	.32
SBL	1.5		10	.01	60	
SBT	1.5	5250	20	.01*	70	.02*
SBR	1	1750	10	.01	30	.02
EBL	1	1750	50	.03	40	.02
EBT	3	5250	470	.13*	890	.25*
EBR	0	0	850	.49	1180	.67
WBL	2	3500	840	.24*	1150	.33*
WBT	3	5250	620	.12	940	.18
WBR	0	0	30		20	
Right Turn Adjustment			EBR	.13*	EBR	.22*
Clearance Interval				.10*		.10*

Note: Assumes N/S Split Phasing
Note: Assumes Right-Turn Overlap for NBR

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   TOTAL CAPACITY UTILIZATION       .91          1.18
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57. Valencia & Magic Mtn

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	80	.05*	130	.07
NBT	3	5250	820	.21	1810	.48*
NBR	0	0	260		700	
SBL	1	1750	20	.01	50	.03*
SBT	3	5250	1640	.31*	1220	.23
SBR	2	3500	790	.23	600	.17
EBL	2	3500	510	.15	620	.18
EBT	2	3500	900	.28*	1300	.38*
EBR	0	0	70		40	
WBL	1	1750	660	.38*	450	.26*
WBT	2	3500	1050	.30	960	.27
WBR	1	1750	70	.04	40	.02
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION 1.12 1.25

2035 With Proj. & Mit. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	80	.05*	130	.07
NBT	3	5250	820	.21	1810	.48*
NBR	0	0	260		700	
SBL	1	1750	20	.01	50	.03*
SBT	3	5250	1640	.31*	1220	.23
SBR	2	3500	790	.23	600	.17
EBL	2	3500	510	.15	620	.18
EBT	2	3500	900	.28*	1300	.38*
EBR	0	0	70		40	
WBL	2	3500	660	.19*	450	.13*
WBT	2	3500	1050	.30	960	.27
WBR	1	1750	70	.04	40	.02
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .93 1.12

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	80	.05*	130	.07
NBT	3	5250	820	.21	1780	.48*
NBR	0	0	260		740	
SBL	1	1750	20	.01	50	.03*
SBT	3	5250	1640	.31*	1220	.23
SBR	2	3500	790	.23	590	.17
EBL	2	3500	500	.14	710	.20
EBT	2	3500	900	.28*	1260	.37*
EBR	0	0	70		40	
WBL	2	3500	670	.19*	460	.13*
WBT	2	3500	1050	.30	960	.27
WBR	1	1750	70	.04	40	.02
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .93 1.11

65. Bouquet & Soledad

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	20	.01*	100	.06
NBT	3	5250	710	.14	1820	.35*
NBR	1	1750	220	.13	510	.29
SBL	3	5250	380	.07	410	.08*
SBT	2.5	7000	1920	{.44}*	1430	{.28}
SBR	1.5		1270		830	
EBL	3	5250	330	.06*	1310	.25*
EBT	3	5250	890	.19	1150	.25
EBR	0	0	120		150	
WBL	3	5250	160	.03	380	.07
WBT	2.5	7000	920	.18*	950	{.21}*
WBR	1.5		290		640	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.79**		**.99**

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	20	.01*	100	.06
NBT	3	5250	720	.14	1820	.35*
NBR	1	1750	230	.13	510	.29
SBL	3	5250	380	.07	410	.08*
SBT	2.5	7000	1930	{.45}*	1430	{.28}
SBR	1.5		1270		840	
EBL	3	5250	330	.06*	1290	.25*
EBT	3	5250	870	.19	1160	.25
EBR	0	0	120		150	
WBL	3	5250	160	.03	380	.07
WBT	2.5	7000	920	.18*	940	{.21}*
WBR	1.5		290		640	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.80**		**.99**

66. Bouquet & Newhall Ranch

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	560	.16*	790	.23*
NBT	4	7000	570	.08	2530	.36
NBR	1	1750	310	.18	590	.34
SBL	1	1750	100	.06	70	.04
SBT	4	7000	2200	.31*	1470	.21*
SBR	1	1750	810	.46	430	.25
EBL	3	5250	240	.05	680	.13
EBT	2	3500	890	.25*	2050	.59*
EBR	2	3500	840	.24	1040	.30
WBL	2	3500	590	.17*	140	.04*
WBT	4	7000	1470	.21	1010	.14
WBR	1	1750	70	.04	100	.06
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR EBR

TOTAL CAPACITY UTILIZATION .99 1.17

2035 With Proj. & Mit. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	560	.16*	790	.23*
NBT	4	7000	570	.08	2530	.36
NBR	1	1750	310	.18	590	.34
SBL	1	1750	100	.06	70	.04
SBT	4	7000	2200	.31*	1470	.21*
SBR	1	1750	810	.46	430	.25
EBL	3	5250	240	.05	680	.13
EBT	3	5250	890	.17*	2050	.39*
EBR	2	3500	840	.24	1040	.30
WBL	2	3500	590	.17*	140	.04*
WBT	4	7000	1470	.21	1010	.14
WBR	1	1750	70	.04	100	.06
Right Turn Adjustment			SBR	.04*		
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR EBR

TOTAL CAPACITY UTILIZATION .95 .97

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	570	.16*	780	.22*
NBT	4	7000	580	.08	2530	.36
NBR	1	1750	310	.18	580	.33
SBL	1	1750	100	.06	70	.04
SBT	4	7000	2200	.31*	1490	.21*
SBR	1	1750	810	.46	430	.25
EBL	3	5250	240	.05	680	.13
EBT	3	5250	890	.17*	2070	.39*
EBR	2	3500	850	.24	1040	.30
WBL	2	3500	580	.17*	140	.04*
WBT	4	7000	1470	.21	1020	.15
WBR	1	1750	70	.04	100	.06
Right Turn Adjustment			SBR	.04*		
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR EBR

TOTAL CAPACITY UTILIZATION .95 .96

81. Commerce Ctr & Henry Mayo

2035 With Proj. & Mit. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	10	.01	10	.01*
NBT	3	4800	1160	.26*	850	.21
NBR	0	0	90		160	
SBL	2	2880	30	.01*	150	.05
SBT	2	3200	360	.11	870	.27*
SBR	1	1600	20	.01	50	.03
EBL	1	1600	460	.29*	250	.16*
EBT	2	3200	150	.05	220	.07
EBR	1	1600	230	.14	280	.18
WBL	1.5		40		240	
WBT	0.5	3200	10	.02*	10	.08*
WBR	1	1600	100	.06	340	.21
Right Turn Adjustment			WBR	.03*	Multi	.09*
Clearance Interval				.10*		.10*
Note: Assumes E/W Split Phasing						
TOTAL CAPACITY UTILIZATION				**.71**		**.71**

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	10	.01	10	.01*
NBT	3	4800	1160	.26*	830	.21
NBR	0	0	90		160	
SBL	2	2880	30	.01*	150	.05
SBT	2	3200	360	.11	840	.26*
SBR	1	1600	20	.01	50	.03
EBL	1	1600	460	.29*	260	.16*
EBT	2	3200	140	.04	220	.07
EBR	1	1600	230	.14	270	.17
WBL	1.5		40		240	
WBT	0.5	3200	10	.02*	10	.08*
WBR	1	1600	100	.06	330	.21
Right Turn Adjustment			WBR	.03*	WBR	.08*
Clearance Interval				.10*		.10*
Note: Assumes E/W Split Phasing						
TOTAL CAPACITY UTILIZATION				**.71**		**.69**

82. Commerce Ctr & SR-126 EB

2035 With Proj. & Mit. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	4800	1550	.32*	1020	.21
NBR	f		170		420	
SBL	0	0	0		0	
SBT	2	3200	420	.13	1060	.33*
SBR	f		340		1450	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.42**		**.43**

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	4800	1550	.32*	1010	.21
NBR	f		160		420	
SBL	0	0	0		0	
SBT	2	3200	410	.13	1040	.33*
SBR	f		340		1460	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.42**		**.43**

83. Commerce Ctr & SR-126 WB

2035 With Proj. & Mit. (With Potrero Bridge)

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	2	2880	230	.08	510	.18*
NBT	3	4800	1320	.28*	510	.11
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	3	4800	580	.12	2340	.49*
SBR	1	1600	140	.09	530	.33
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	2880	180	.06*	170	.06*
WBT	0	0	0		0	
WBR	2	3200	1490	.47	550	.17
Right Turn Adjustment			WBR	.41*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.85**		**.83**

2035 With Proj. & Mit. (Without Potrero Bridge)

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	2	2880	220	.08	480	.17*
NBT	3	4800	1330	.28*	530	.11
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	3	4800	570	.12	2330	.49*
SBR	1	1600	140	.09	510	.32
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	2880	190	.07*	170	.06*
WBT	0	0	0		0	
WBR	2	3200	1450	.45	550	.17
Right Turn Adjustment			WBR	.38*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.83**		**.82**

94. Commerce Center & SR-126

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	230	.14	510	.32*
NBT	1	1600	860	.54*	380	.24
NBR	1	1600	200	.13	420	.26
SBL	2	2880	340	.12	1450	.50
SBT	1	1600	240	.15*	890	.56*
SBR	1	1600	140	.09	530	.33
EBL	1	1600	440	.28	130	.08
EBT	2	3200	1650	.63*	2000	.78*
EBR	0	0	380		500	
WBL	1	1600	280	.18*	200	.13*
WBT	2	3200	1480	.46	2180	.68
WBR	f		1490		550	
Clearance Interval				.10*		.10*

Note: Assumes N/S Split Phasing

TOTAL CAPACITY UTILIZATION 1.60 1.89

105. Westridge & Valencia

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	70	.04*	10	.01
NBT	1	1600	10	.01	10	.01*
NBR	1	1600	60	.04	30	.02
SBL	2	2880	90	.03	550	.19*
SBT	1	1600	20	.01*	10	.01
SBR	1	1600	80	.05	100	.06
EBL	1	1600	120	.08	60	.04*
EBT	3	4800	2000	.42*	1560	.33
EBR	0	0	10		10	
WBL	1	1600	10	.01*	30	.02
WBT	3	4800	1400	.29	2000	.42*
WBR	1	1600	400	.25	310	.19
Right Turn Adjustment			NBR	.01*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.59**		**.76**

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	70	.04*	10	.01
NBT	1	1600	10	.01	10	.01*
NBR	1	1600	60	.04	30	.02
SBL	2	2880	100	.03	510	.18*
SBT	1	1600	20	.01*	10	.01
SBR	1	1600	80	.05	100	.06
EBL	1	1600	120	.08	60	.04*
EBT	3	4800	1980	.41*	1550	.33
EBR	0	0	10		10	
WBL	1	1600	10	.01*	30	.02
WBT	3	4800	1390	.29	2020	.42*
WBR	1	1600	420	.26	160	.10
Right Turn Adjustment			NBR	.01*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.58**		**.75**

108. Stevenson Ranch & Pico Cyn

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	260	.09*	300	.10*
SBT	0	0	0		0	
SBR	1	1600	100	.06	260	.16
EBL	1	1600	260	.16*	150	.09*
EBT	2	3200	280	.09	1070	.33
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	420	.26*	800	.50*
WBR	1	1600	170	.11	320	.20
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.61**		**.79**

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	260	.09*	300	.10*
SBT	0	0	0		0	
SBR	1	1600	100	.06	260	.16
EBL	1	1600	260	.16*	150	.09*
EBT	2	3200	290	.09	1070	.33
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	310	.19*	800	.50*
WBR	1	1600	170	.11	320	.20
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.54**		**.79**

109. Stevenson Ranch & Poe

2035 With Proj. (With Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	170	.11*	310	.19*
NBT	2	3200	260	.08	160	.05
NBR	0	0	0		0	
SBL	1	1600	0	.00	0	.00
SBT	2	3200	110	.03*	270	.08*
SBR	d	1600	160	.10	410	.26
EBL	1	1600	390	.24*	220	.14*
EBT	1	1600	0	.00	0	.00
EBR	1	1600	250	.16	290	.18
WBL	1	1600	0	.00	0	.00
WBT	1	1600	0	.00*	0	.00*
WBR	0	0	0		0	
Right Turn Adjustment					SBR	.07*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.48**		**.58**

2035 With Proj. & Mit. (Without Potrero Bridge)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	170	.11*	310	.19*
NBT	2	3200	260	.08	160	.05
NBR	0	0	0		0	
SBL	1	1600	0	.00	0	.00
SBT	2	3200	110	.03*	270	.08*
SBR	d	1600	160	.10	410	.26
EBL	1	1600	390	.24*	220	.14*
EBT	1	1600	0	.00	0	.00
EBR	1	1600	250	.16	290	.18
WBL	1	1600	0	.00	0	.00
WBT	1	1600	0	.00*	0	.00*
WBR	0	0	0		0	
Right Turn Adjustment					SBR	.07*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.48**		**.58**

Technical Memorandum, Mission Village Revised Project Trip Generation Estimates, Austin-Foust Associates, Inc. (March 8, 2011)

AUSTIN-FOUST ASSOCIATES, INC.
TRAFFIC ENGINEERING AND TRANSPORTATION PLANNING

MEMORANDUM

TO: Tom Worthington, Impact Sciences, Inc.

FROM: Daryl Zerfass, P.E.

DATE: March 8, 2011

SUBJECT: **MISSION VILLAGE REVISED PROJECT TRIP GENERATION ESTIMATES**

Trip generation estimates have been prepared for the revised Mission Village project description, which is based on the December 2010 Vesting Tentative Tract Map (VTTM) 61105.

The attached Table 1 summarizes the trip generation for the revised project. The trip generation rates used for the calculation are those utilized in the traffic study that was prepared for the proposed project (Mission Village Traffic Impact Analysis, October, 2010).

A comparison to the trip generation estimates of the proposed project is provided in the attached Table 2. As shown, the revised project is estimated to generate a total of 55,895 ADT, which is 2,557 ADT less than the proposed project's ADT. Peak hour trip generation estimates for the revised project are also less than the proposed project by an amount of 188 trips in the AM peak hour and 234 trips in the PM peak hour. As such, the revised project will have fewer impacts than would the proposed project, and the impact study of the proposed project can be considered a conservative analysis.

Enclosures

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Table 1: Mission Village Revised Project Trip Generation Summary

		AM Peak Hour			PM Peak Hour			
Land Use Type	**Units**	**IB**	**OB**	**Total**	**IB**	**OB**	**Total**	**ADT**
3. Single Family (6-10 du/ac)	351 DU	67	197	263	225	130	355	3,475
4. Condominium/Townhouse	2,315 DU	234	1,110	1,344	1,086	604	1,690	18,520
5. Apartment	579 DU	46	249	295	237	122	359	3,995
7. Senior (Active)	459 DU	37	54	91	73	45	118	1,702
8. CCRC	351 DU	42	21	63	49	53	102	986
Residential Total	*4,055 DU*	*426*	*1,631*	*2,057*	*1,671*	*953*	*2,623*	*28,678*
13. Commercial Shops	224.1 TSF	162	107	269	404	404	808	8,306
20. Elementary/Middle School	900 STU	234	180	414	72	81	153	1,305
24. Library	36 TSF	27	11	38	122	133	255	3,059
31. Business Park	697 TSF	836	160	996	210	690	900	7,110
40. Commercial Office	634 TSF	983	120	1,103	132	819	951	7,329
51. Developed Park[1]	40.9 AC	0	0	0	1	1	2	108
Non-Residential Total		*2,242*	*578*	*2,820*	*941*	*2,128*	*3,069*	*27,217*
TOTAL		**2,668**	**2,209**	**4,877**	**2,612**	**3,081**	**5,692**	**55,895**
Trip Rates								
3. Single Family (6-10 du/ac)[2]	DU	.19	.56	.75	.64	.37	1.01	9.90
4. Condominium/Townhouse[2]	DU	.10	.48	.58	.47	.26	.73	8.00
5. Apartment[2]	DU	.08	.43	.51	.41	.21	.62	6.90
7. Senior (Active)[2]	DU	.08	.12	.20	.16	.10	.26	3.71
8. CCRC[3]	DU	.12	.06	.18	.14	.15	.29	2.81
13. Commercial Shops[2]	TSF	.72	.48	1.20	1.80	1.80	3.60	37.06
20. Elementary/Middle School[2]	STU	.26	.20	.46	.08	.09	.17	1.45
24. Library[2]	TSF	.76	.30	1.06	3.40	3.69	7.09	84.98
31. Business Park[2]	TSF	1.20	.23	1.43	.30	.99	1.29	10.20
40. Commercial Office[2]	TSF	1.55	.19	1.74	.21	1.29	1.50	11.56
51. Developed Park[2]	AC	.00	.00	.00	.03	.04	.07	2.60

DU = Dwelling Units
TSF = Thousand Square Feet
STU = Students
AC = Acres

[1]Includes private recreation centers.

Trip rate sources:
[2]Santa Clarita Valley Consolidated Transportation Model (SCVCTM)
[3]Institute of Transportation Engineers (ITE) Trip Generation 8th Edition, Category 255 (Continued Care Retirement Community)

Table 2: Trip Generation Comparison – Mission Village

Land Use Type	AM Peak Hour			PM Peak Hour			ADT
	IB	OB	Total	IB	OB	Total	
Proposed Project Total	2,701	2,364	5,065	2,763	3,163	5,926	58,452
Revised Project Total	2,668	2,209	4,877	2,612	3,081	5,692	55,895
Difference	-33	-155	-188	-151	-82	-234	-2,557

Mission Village Traffic Impact Analysis - Supplemental Freeway Analysis, AFA (November 16, 2010)

AUSTIN-FOUST ASSOCIATES, INC.
TRAFFIC ENGINEERING AND TRANSPORTATION PLANNING

MEMORANDUM

TO: Susan Tebo, Impact Sciences, Inc.

FROM: Daryl Zerfass, P.E.

DATE: November 16, 2010

SUBJECT: **MISSION VILLAGE TRAFFIC IMPACT ANALYSIS – SUPPLEMENTAL FREEWAY ANALYSIS**

This memo serves as a supplement to the original Mission Village Traffic Impact Analysis (TIA, October 2010) and provides an analysis of the project's freeway impacts using revised freeway lane capacities.

The I-5 freeway impacts analysis presented in the Mission Village Draft EIR analyzed the potential impacts of the proposed project on the segment of I-5 between Lake Hughes in the north, south to the confluence of Interstate 210 (I-210), which is south of State Route (SR-14). The analysis utilized a capacity of 2,000 vehicles per hour (vph) for the HOV lanes as representing the threshold between level of service (LOS) E and F conditions. As further explained below, this threshold is the same threshold utilized by Caltrans in its review of this segment of I-5 prepared in connection with the pending improvement project for this segment of the freeway, as well as the threshold utilized under the County's Congestion Management Program (CMP) for freeway impacts analyses.

Following release of the Draft EIR, Caltrans staff requested that the impact analysis utilize a capacity of 1,600 vph for the HOV lanes based on the desire to achieve an operating condition for the HOV lanes that is better than the operating condition for the general purpose lanes. In response to the Caltrans request, an additional analysis of I-5 utilizing a capacity of 1,600 vph to represent the maximum capacity for the HOV lanes has been prepared. A summary of the resulting analysis, and the basis for the use of 2,000 vph in the Draft EIR, follows below.

Basis for 2,000 VPH

The *I-5 HOV/Truck Lanes Project SR-14 to Parker Road Final Environmental Impact Report/Environmental Assessment with Finding of No Significant Impact* (Caltrans EIR) was prepared by

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Caltrans to analyze the potential impacts associated with widening I-5 to include HOV lanes, truck climbing lanes, and additional auxiliary lanes from SR-14 on the south to Parker Road on the north. In conducting the analysis to determine whether the proposed improvements were adequate to handle future projected traffic volumes, Caltrans utilized a capacity of 2,000 vph for both the mixed-flow lanes and the HOV lanes. (See *I-5 PA&ED HOV & Truck Lanes - SR-14 to Parker Road Traffic Study*, Austin-Foust Associates, Inc. (October 2007), pp. 17, 19, 27 [Footnote: "D/C calculations based on LOS E/F threshold of 2,000 veh/hr (HOV Lanes) and 1,200 veh/hr (Truck Lanes)."])

Based on the 2,000 vph threshold, the Caltrans EIR determined that with the proposed improvements, under 2030 traffic volumes the I-5 mixed-flow and truck lanes would operate primarily at LOS C or D, with a maximum LOS of E on three southbound segments during the PM peak hour. (Caltrans EIR p. 2.6-15.) Specific to the HOV lanes, the EIR determined that with the proposed improvements, the HOV lanes would operate at LOS C or better, with the exception of one segment that would operate at LOS D and six segments that would operate at LOS E. (EIR Table 2.6H 2030 No Build and Build LOS.) Significantly, the Caltrans EIR determined that none of the segments would operate at LOS F, which is considered deficient conditions.

Thus, based on an HOV lane capacity of 2,000 vph, Caltrans determined that the proposed improvements would result in LOS E or better operations on the segment of I-5 between SR-14 and Parker Road under long-range 2030 conditions. Based on the EIR's analysis, on September 1, 2009, Caltrans approved the improvement project, which presently is underway.

In addition to the Caltrans EIR utilizing a 2,000 vph threshold for the HOV lanes, the Metro *Draft 2010 Congestion Management Program* for Los Angeles County also utilizes a 2,000 vph capacity in conducting transportation impact analyses for both general purpose and HOV freeway lanes. (See, e.g., CMP Appendix A, Guidelines for Biennial Highway Monitoring, 2009 CMP Freeway Monitoring Stations and Levels of Service, Capacity., where all freeway segments (inclusive of those with HOV lanes) have a total capacity in an even multiple of 2,000.)

Thus, the 2,000 vph utilized for analysis of the I-5 HOV lanes as part of the Mission Village TIA is consistent with both Caltrans' own analysis methodology and the County's CMP.

Request to Utilize 1,600 VPH

Beginning in August 2010, the project applicant and Caltrans regularly discussed the methodology to be utilized in the TIA for the I-5 impacts analysis. Following release of the Mission Village Draft EIR, Caltrans staff requested that the analysis utilize a capacity of 1,600 vph for the HOV lanes based on the desire to achieve an operating condition for the HOV lanes that is better than the operating condition for the general purpose lanes, i.e., a desire that the HOV lanes operate at LOS C rather than LOS E or F as is accepted for the general purpose lanes. For buffered or contiguous HOV facilities, Caltrans considers that LOS C occurs at approximately 1,650 vph, or less if there is significant bus volume or if there are physical constraints. (*High Occupancy Vehicle Guidelines for Planning, Design and Operations*, Caltrans, 2003, Chapter 2, page 4.) In contrast, 2,000 vph is commonly accepted to represent the threshold between LOS E and F conditions for a freeway lane.

In response to the Caltrans comment, a supplemental analysis of I-5 utilizing a capacity of 1,600 vph to represent the maximum capacity for the HOV lanes has been prepared. As explained below, the analysis shows that while some segments of the I-5 would operate over capacity under the 2030 scenario

utilizing this criteria, the Mission Village project would not cause a significant project or cumulative impact.

1600 VPH Analysis

The traffic volume forecasts utilized for the Mission Village TIA have been re-evaluated using a capacity of 1,600 vph for the HOV lanes, as discussed above. As shown in Table 1, all lanes are forecast to operate at a V/C ratio less than 1.00 for the project's buildout year of 2021 under cumulative conditions. Under long-range buildout conditions, Table 2 shows that none of the mixed-flow lanes exceed a V/C ratio of 1.00, but several segments of the southbound HOV lane exceeds a V/C ratio of 1.00. Specifically, the southbound HOV lane from Rye Canyon Road to SR-14 is shown to have V/C ratios that range from 1.13 to 1.25. However, since the capacity used for the HOV lane (1,600 vph) represents mid-LOS C conditions, it is important to note that a V/C ratio of 1.00 in the HOV lanes represents a better operating condition than does a V/C ratio of 1.00 in a mixed-flow lane.

Consideration has also been given to the number of vehicles actually eligible to utilize the HOV lane. Under existing conditions within the project's study area, the volume of traffic eligible to utilize the HOV lane is approximately 27 percent of the total volume according to a survey prepared for the Caltrans EIR. Under long-range buildout peak conditions, when the total volume of traffic is approaching the maximum capacity of the freeway and traffic volumes reach the point of being uniformly distributed across all lanes, in no case does the HOV lane volume exceed 27 percent of the total volume. Therefore, the HOV lane volume estimates utilized for this study are attainable.

The analysis discussed above results in the same conclusions as did the project's TIA. With the planned freeway improvement project that is adding truck lanes and HOV lanes to the I-5 freeway within the Santa Clarita Valley, project traffic does not result in a significant impact to the freeway.

Table 1: Freeway Volumes and V/C Ratios - 2021 Conditions

		Capacities		2021 Without Project				2021 With Project				Project Increment	
				MF Lanes		HOV Lanes		MF Lanes		HOV Lanes			
Segment	**Lanes**	**MF Lanes**	**HOV Lanes**	**Vol**	**V/C**	**Vol**	**V/C**	**Vol**	**V/C**	**Vol**	**V/C**	**MF**	**HOV**
Northbound – AM Peak Hour													
401. North of Lake Hughes	4M	8,000	n/a	2,200	0.28	n/a	n/a	2,232	0.28	n/a	n/a	0.00	n/a
402. Between Lake Hughes & Parker	4M	8,000	n/a	2,400	0.30	n/a	n/a	2,445	0.31	n/a	n/a	0.01	n/a
403. Between Parker & Hasley Canyon	4M + 1H	8,000	1,600	2,390	0.30	310	0.19	2,433	0.30	320	0.20	0.00	0.01
404. Between Hasley Canyon & SR-126	4M + 1H + 1A	9,000	1,600	3,450	0.38	350	0.22	3,493	0.39	360	0.23	0.01	0.01
405. Between SR-126 & Rye Canyon	4M + 1H	8,000	1,600	3,900	0.49	500	0.31	3,900	0.49	500	0.31	0.00	0.00
406. Between Rye Canyon & Magic Mtn	4M + 1H	8,000	1,600	3,880	0.49	520	0.33	3,880	0.49	520	0.33	0.00	0.00
407. Between Magic Mtn & Valencia	4M + 1H+ 1A	9,000	1,600	4,750	0.53	550	0.34	4,882	0.54	560	0.35	0.01	0.01
408. Between Valencia & McBean	4M + 1H	8,000	1,600	5,710	0.71	590	0.37	5,890	0.74	610	0.38	0.03	0.01
409. Between McBean & Pico/Lyons	4M + 1H	8,000	1,600	5,650	0.71	650	0.41	5,881	0.74	680	0.43	0.03	0.02
410. Between Pico/Lyons & Calgrove	4M + 1H+ 1A	9,000	1,600	5,540	0.62	660	0.41	5,753	0.64	680	0.43	0.02	0.02
411. Between Calgrove & SR-14	4M + 1H + 1T	9,200	1,600	5,540	0.60	660	0.41	5,737	0.62	680	0.43	0.02	0.02
412. South of SR-14	6M + 1H + 2T	14,400	1,600	7,500	0.52	700	0.44	7,623	0.53	710	0.44	0.01	0.00
Northbound – PM Peak Hour													
401. North of Lake Hughes	4M	8,000	n/a	4,000	0.50	n/a	n/a	4,066	0.51	n/a	n/a	0.01	n/a
402. Between Lake Hughes & Parker	4M	8,000	n/a	4,700	0.59	n/a	n/a	4,812	0.60	n/a	n/a	0.01	n/a
403. Between Parker & Hasley Canyon	4M + 1H	8,000	1,600	5,120	0.64	480	0.30	5,252	0.66	500	0.31	0.02	0.01
404. Between Hasley Canyon & SR-126	4M + 1H + 1A	9,000	1,600	5,790	0.64	510	0.32	5,922	0.66	530	0.33	0.02	0.01
405. Between SR-126 & Rye Canyon	4M + 1H	8,000	1,600	5,380	0.67	620	0.39	5,403	0.68	620	0.39	0.01	0.00
406. Between Rye Canyon & Magic Mtn	4M + 1H	8,000	1,600	5,350	0.67	650	0.41	5,373	0.67	650	0.41	0.00	0.00
407. Between Magic Mtn & Valencia	4M + 1H+ 1A	9,000	1,600	5,740	0.64	660	0.41	5,843	0.65	670	0.42	0.01	0.01
408. Between Valencia & McBean	4M + 1H	8,000	1,600	6,430	0.80	770	0.48	6,564	0.82	780	0.49	0.02	0.01
409. Between McBean & Pico/Lyons	4M + 1H	8,000	1,600	6,410	0.80	790	0.49	6,545	0.82	810	0.51	0.02	0.02
410. Between Pico/Lyons & Calgrove	4M + 1H+ 1A	9,000	1,600	6,610	0.73	790	0.49	6,723	0.75	800	0.50	0.02	0.01
411. Between Calgrove & SR-14	4M + 1H + 1T	9,200	1,600	6,590	0.72	810	0.51	6,689	0.73	820	0.51	0.01	0.00
412. South of SR-14	6M + 1H + 2T	14,400	1,600	13,780	0.96	1,420	0.89	13,860	0.96	1,430	0.89	0.00	0.00
Southbound – AM Peak Hour													
401. North of Lake Hughes	4M	8,000	n/a	2,800	0.35	n/a	n/a	2,887	0.36	n/a	n/a	0.01	n/a
402. Between Lake Hughes & Parker	4M	8,000	n/a	3,400	0.43	n/a	n/a	3,529	0.44	n/a	n/a	0.01	n/a
403. Between Parker & Hasley Canyon	4M + 1H	8,000	1,600	3,920	0.49	380	0.24	4,074	0.51	400	0.25	0.02	0.01
404. Between Hasley Canyon & SR-126	4M + 1H	8,000	1,600	4,600	0.58	400	0.25	4,742	0.59	420	0.26	0.01	0.01
405. Between SR-126 & Rye Canyon	4M + 1H+ 1A	9,000	1,600	4,760	0.53	440	0.28	4,793	0.53	440	0.28	0.00	0.00
406. Between Rye Canyon & Magic Mtn	4M + 1H+ 1A	9,000	1,600	5,250	0.58	450	0.28	5,277	0.59	450	0.28	0.01	0.00
407. Between Magic Mtn & Valencia	4M + 1H	8,000	1,600	5,330	0.67	470	0.29	5,569	0.70	500	0.31	0.03	0.02
408. Between Valencia & McBean	4M + 1H+ 1A	9,000	1,600	6,400	0.71	500	0.31	6,623	0.74	520	0.33	0.03	0.02
409. Between McBean & Pico/Lyons	4M + 1H	8,000	1,600	6,580	0.82	520	0.33	6,761	0.85	540	0.34	0.03	0.01
410. Between Pico/Lyons & Calgrove	4M + 1H + 1T	9,200	1,600	6,770	0.74	530	0.33	6,900	0.75	550	0.34	0.01	0.01
411. Between Calgrove & SR-14	4M + 1H + 2T	10,400	1,600	6,970	0.67	530	0.33	7,080	0.68	540	0.34	0.01	0.01
412. South of SR-14	6M + 1H + 2T	14,400	1,600	13,690	0.95	1,410	0.88	13,789	0.96	1,420	0.89	0.01	0.01

(Continued)

Table 1: Freeway Volumes and V/C Ratios - 2021 Conditions (Continued)

				2021 Without Project				2021 With Project				Project Increment	
		Capacities		MF Lanes		HOV Lanes		MF Lanes		HOV Lanes			
Segment	**Lanes**	**MF Lanes**	**HOV Lanes**	**Vol**	**V/C**	**Vol**	**V/C**	**Vol**	**V/C**	**Vol**	**V/C**	**MF**	**HOV**
Southbound – PM Peak Hour													
401. North of Lake Hughes	4M	8,000	n/a	3,800	0.48	n/a	n/a	3,834	0.48	n/a	n/a	0.00	n/a
402. Between Lake Hughes & Parker	4M	8,000	n/a	4,100	0.51	n/a	n/a	4,150	0.52	n/a	n/a	0.01	n/a
403. Between Parker & Hasley Canyon	4M + 1H	8,000	1,600	4,370	0.55	430	0.27	4,432	0.55	440	0.28	0.00	0.01
404. Between Hasley Canyon & SR-126	4M + 1H	8,000	1,600	5,240	0.66	460	0.29	5,289	0.66	470	0.29	0.00	0.00
405. Between SR-126 & Rye Canyon	4M + 1H+ 1A	9,000	1,600	5,820	0.65	480	0.30	5,862	0.65	490	0.31	0.00	0.01
406. Between Rye Canyon & Magic Mtn	4M + 1H+ 1A	9,000	1,600	6,970	0.77	530	0.33	7,021	0.78	540	0.34	0.01	0.01
407. Between Magic Mtn & Valencia	4M + 1H	8,000	1,600	6,800	0.85	600	0.38	6,973	0.87	610	0.38	0.02	0.00
408. Between Valencia & McBean	4M + 1H+ 1A	9,000	1,600	7,420	0.82	680	0.43	7,637	0.85	690	0.43	0.03	0.00
409. Between McBean & Pico/Lyons	4M + 1H	8,000	1,600	7,230	0.90	770	0.48	7,483	0.94	780	0.49	0.04	0.01
410. Between Pico/Lyons & Calgrove	4M + 1H + 1T	9,200	1,600	7,420	0.81	780	0.49	7,641	0.83	800	0.50	0.02	0.01
411. Between Calgrove & SR-14	4M + 1H + 2T	10,400	1,600	7,520	0.72	780	0.49	7,725	0.74	800	0.50	0.02	0.01
412. South of SR-14	6M + 1H + 2T	14,400	1,600	10,330	0.72	970	0.61	10,461	0.73	980	0.61	0.01	0.00

MF (or M) = Mixed-Flow/General Purpose Lane (Capacity = 2,000 vehicles per hour)
HOV (or H) = HOV Lane (Capacity = 1,600 vehicles per hour)
A = Auxiliary Lane (Capacity = 1,000 vehicles per hour)
T = Truck Lane (Capacity = 1,200 vehicles per hour)

Capacities derived from PeMS data and through discussions with Caltrans staff.

Table 2: Freeway Volumes and V/C Ratios - Buildout Conditions

		Capacities		Long-Range Without Project				Long-Range With Project				Project Increment	
				MF Lanes		HOV Lanes		MF Lanes		HOV Lanes			
Segment	**Lanes**	**MF Lanes**	**HOV Lanes**	**Vol**	**V/C**	**Vol**	**V/C**	**Vol**	**V/C**	**Vol**	**V/C**	**MF**	**HOV**
Northbound – AM Peak Hour													
401. North of Lake Hughes	4M	8,000	n/a	3,368	0.42	n/a	n/a	3,400	0.43	n/a	n/a	0.01	n/a
402. Between Lake Hughes & Parker	4M	8,000	n/a	3,655	0.46	n/a	n/a	3,700	0.46	n/a	n/a	0.00	n/a
403. Between Parker & Hasley Canyon	4M + 1H	8,000	1,600	3,717	0.46	330	0.21	3,760	0.47	340	0.21	0.01	0.00
404. Between Hasley Canyon & SR-126	4M + 1H + 1A	9,000	1,600	5,277	0.59	370	0.23	5,320	0.59	380	0.24	0.00	0.01
405. Between SR-126 & Rye Canyon	4M + 1H	8,000	1,600	5,480	0.69	520	0.33	5,480	0.69	520	0.33	0.00	0.00
406. Between Rye Canyon & Magic Mtn	4M + 1H	8,000	1,600	5,450	0.68	550	0.34	5,450	0.68	550	0.34	0.00	0.00
407. Between Magic Mtn & Valencia	4M + 1H+ 1A	9,000	1,600	6,148	0.68	610	0.38	6,280	0.70	620	0.39	0.02	0.01
408. Between Valencia & McBean	4M + 1H	8,000	1,600	6,990	0.87	710	0.44	7,170	0.90	730	0.46	0.03	0.02
409. Between McBean & Pico/Lyons	4M + 1H	8,000	1,600	7,019	0.88	720	0.45	7,250	0.91	750	0.47	0.03	0.02
410. Between Pico/Lyons & Calgrove	4M + 1H+ 1A	9,000	1,600	6,857	0.76	710	0.44	7,070	0.79	730	0.46	0.03	0.02
411. Between Calgrove & SR-14	4M + 1H + 1T	9,200	1,600	6,863	0.75	720	0.45	7,060	0.77	740	0.46	0.02	0.01
412. South of SR-14	6M + 2H + 2T	14,400	3,200	9,057	0.63	1,010	0.32	9,180	0.64	1,020	0.32	0.01	0.00
Northbound – PM Peak Hour													
401. North of Lake Hughes	4M	8,000	n/a	6,334	0.79	n/a	n/a	6,400	0.80	n/a	n/a	0.01	n/a
402. Between Lake Hughes & Parker	4M	8,000	n/a	7,388	0.92	n/a	n/a	7,500	0.94	n/a	n/a	0.02	n/a
403. Between Parker & Hasley Canyon	4M + 1H	8,000	1,600	7,538	0.94	1,310	0.82	7,670	0.96	1,330	0.83	0.02	0.01
404. Between Hasley Canyon & SR-126	4M + 1H + 1A	9,000	1,600	7,848	0.87	1,300	0.81	7,980	0.89	1,320	0.83	0.02	0.02
405. Between SR-126 & Rye Canyon	4M + 1H	8,000	1,600	6,787	0.85	1,290	0.81	6,810	0.85	1,290	0.81	0.00	0.00
406. Between Rye Canyon & Magic Mtn	4M + 1H	8,000	1,600	6,797	0.85	1,280	0.80	6,820	0.85	1,280	0.80	0.00	0.00
407. Between Magic Mtn & Valencia	4M + 1H+ 1A	9,000	1,600	6,697	0.74	1,290	0.81	6,800	0.76	1,300	0.81	0.02	0.00
408. Between Valencia & McBean	4M + 1H	8,000	1,600	7,326	0.92	1,330	0.83	7,460	0.93	1,340	0.84	0.01	0.01
409. Between McBean & Pico/Lyons	4M + 1H	8,000	1,600	6,895	0.86	1,350	0.84	7,030	0.88	1,370	0.86	0.02	0.02
410. Between Pico/Lyons & Calgrove	4M + 1H+ 1A	9,000	1,600	6,897	0.77	1,380	0.86	7,010	0.78	1,390	0.87	0.01	0.01
411. Between Calgrove & SR-14	4M + 1H + 1T	9,200	1,600	6,811	0.74	1,380	0.86	6,910	0.75	1,390	0.87	0.01	0.01
412. South of SR-14	6M + 2H + 2T	14,400	3,200	14,190	0.99	3,120	0.98	14,270	0.99	3,130	0.98	0.00	0.00
Southbound – AM Peak Hour													
401. North of Lake Hughes	4M	8,000	n/a	4,613	0.58	n/a	n/a	4,700	0.59	n/a	n/a	0.01	n/a
402. Between Lake Hughes & Parker	4M	8,000	n/a	5,571	0.70	n/a	n/a	5,700	0.71	n/a	n/a	0.01	n/a
403. Between Parker & Hasley Canyon	4M + 1H	8,000	1,600	6,336	0.79	690	0.43	6,490	0.81	710	0.44	0.02	0.01
404. Between Hasley Canyon & SR-126	4M + 1H	8,000	1,600	6,628	0.83	710	0.44	6,770	0.85	730	0.46	0.02	0.02
405. Between SR-126 & Rye Canyon	4M + 1H+ 1A	9,000	1,600	6,657	0.74	710	0.44	6,690	0.74	710	0.44	0.00	0.00
406. Between Rye Canyon & Magic Mtn	4M + 1H+ 1A	9,000	1,600	6,663	0.74	710	0.44	6,690	0.74	710	0.44	0.00	0.00
407. Between Magic Mtn & Valencia	4M + 1H	8,000	1,600	6,481	0.81	750	0.47	6,720	0.84	780	0.49	0.03	0.02
408. Between Valencia & McBean	4M + 1H+ 1A	9,000	1,600	7,567	0.84	890	0.56	7,790	0.87	910	0.57	0.03	0.01
409. Between McBean & Pico/Lyons	4M + 1H	8,000	1,600	7,359	0.92	940	0.59	7,540	0.94	960	0.60	0.02	0.01
410. Between Pico/Lyons & Calgrove	4M + 1H + 1T	9,200	1,600	7,060	0.77	990	0.62	7,190	0.78	1,010	0.63	0.01	0.01
411. Between Calgrove & SR-14	4M + 1H + 2T	10,400	1,600	7,170	0.69	1,010	0.63	7,280	0.70	1,020	0.64	0.01	0.01
412. South of SR-14	6M + 2H + 2T	14,400	3,200	13,701	0.95	2,990	0.93	13,800	0.96	3,000	0.94	0.01	0.01

(Continued)

Table 2: Freeway Volumes and V/C Ratios - Buildout Conditions (Continued)

Segment	Lanes	Capacities		Long-Range Without Project				Long-Range With Project				Project Increment	
				MF Lanes		HOV Lanes		MF Lanes		HOV Lanes			
		MF Lanes	HOV Lanes	Vol	V/C	Vol	V/C	Vol	V/C	Vol	V/C	MF	HOV
Southbound – PM Peak Hour													
401. North of Lake Hughes	4M	8,000	n/a	6,366	0.80	n/a	n/a	6,400	0.80	n/a	n/a	0.00	n/a
402. Between Lake Hughes & Parker	4M	8,000	n/a	6,850	0.86	n/a	n/a	6,900	0.86	n/a	n/a	0.00	n/a
403. Between Parker & Hasley Canyon	4M + 1H	8,000	1,600	6,608	0.83	1,320	0.83	6,670	0.83	1,330	0.83	0.00	0.00
404. Between Hasley Canyon & SR-126	4M + 1H	8,000	1,600	7,851	0.98	1,390	0.87	7,900	0.99	1,400	0.88	0.01	0.01
405. Between SR-126 & Rye Canyon	4M + 1H+ 1A	9,000	1,600	7,578	0.84	1,470	0.92	7,630	0.85	1,470	0.92	0.01	0.00
406. Between Rye Canyon & Magic Mtn	4M + 1H+ 1A	9,000	1,600	8,399	0.93	1,840	1.15	8,460	0.94	1,840	1.15	0.01	0.00
407. Between Magic Mtn & Valencia	4M + 1H	8,000	1,600	7,777	0.97	1,940	1.21	7,960	1.00	1,940	1.21	0.03	0.00
408. Between Valencia & McBean	4M + 1H+ 1A	9,000	1,600	8,313	0.92	1,960	1.23	8,540	0.95	1,960	1.23	0.03	0.00
409. Between McBean & Pico/Lyons	4M + 1H	8,000	1,600	7,747	0.97	1,990	1.24	8,000	1.00	2,000	1.25	0.03	0.01
410. Between Pico/Lyons & Calgrove	4M + 1H + 1T	9,200	1,600	8,389	0.91	1,870	1.17	8,610	0.94	1,890	1.18	0.03	0.01
411. Between Calgrove & SR-14	4M + 1H + 2T	10,400	1,600	8,885	0.85	1,790	1.12	9,090	0.87	1,810	1.13	0.02	0.01
412. South of SR-14	6M + 2H + 2T	14,400	3,200	11,719	0.81	2,140	0.67	11,850	0.82	2,150	0.67	0.01	0.00

MF (or M) = Mixed-Flow/General Purpose Lane (Capacity = 2,000 vehicles per hour)
HOV (or H) = HOV Lane (Capacity = 1,600 vehicles per hour)
A = Auxiliary Lane (Capacity = 1,000 vehicles per hour)
T = Truck Lane (Capacity = 1,200 vehicles per hour)

Capacities derived from PeMS data and through discussions with Caltrans staff.

Mission Village Traffic Impact Analysis - Supplemental Freeway Analysis, AFA (November 16, 2010)

AUSTIN-FOUST ASSOCIATES, INC.
TRAFFIC ENGINEERING AND TRANSPORTATION PLANNING

MEMORANDUM

TO: Susan Tebo, Impact Sciences, Inc.

FROM: Daryl Zerfass, P.E.

DATE: November 16, 2010

SUBJECT: **MISSION VILLAGE TRAFFIC IMPACT ANALYSIS – SUPPLEMENTAL FREEWAY ANALYSIS**

This memo serves as a supplement to the original Mission Village Traffic Impact Analysis (TIA, October 2010) and provides an analysis of the project's freeway impacts using revised freeway lane capacities.

The I-5 freeway impacts analysis presented in the Mission Village Draft EIR analyzed the potential impacts of the proposed project on the segment of I-5 between Lake Hughes in the north, south to the confluence of Interstate 210 (I-210), which is south of State Route (SR-14). The analysis utilized a capacity of 2,000 vehicles per hour (vph) for the HOV lanes as representing the threshold between level of service (LOS) E and F conditions. As further explained below, this threshold is the same threshold utilized by Caltrans in its review of this segment of I-5 prepared in connection with the pending improvement project for this segment of the freeway, as well as the threshold utilized under the County's Congestion Management Program (CMP) for freeway impacts analyses.

Following release of the Draft EIR, Caltrans staff requested that the impact analysis utilize a capacity of 1,600 vph for the HOV lanes based on the desire to achieve an operating condition for the HOV lanes that is better than the operating condition for the general purpose lanes. In response to the Caltrans request, an additional analysis of I-5 utilizing a capacity of 1,600 vph to represent the maximum capacity for the HOV lanes has been prepared. A summary of the resulting analysis, and the basis for the use of 2,000 vph in the Draft EIR, follows below.

Basis for 2,000 VPH

The *I-5 HOV/Truck Lanes Project SR-14 to Parker Road Final Environmental Impact Report/Environmental Assessment with Finding of No Significant Impact* (Caltrans EIR) was prepared by

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Caltrans to analyze the potential impacts associated with widening I-5 to include HOV lanes, truck climbing lanes, and additional auxiliary lanes from SR-14 on the south to Parker Road on the north. In conducting the analysis to determine whether the proposed improvements were adequate to handle future projected traffic volumes, Caltrans utilized a capacity of 2,000 vph for both the mixed-flow lanes and the HOV lanes. (See *I-5 PA&ED HOV & Truck Lanes - SR-14 to Parker Road Traffic Study*, Austin-Foust Associates, Inc. (October 2007), pp. 17, 19, 27 [Footnote: "D/C calculations based on LOS E/F threshold of 2,000 veh/hr (HOV Lanes) and 1,200 veh/hr (Truck Lanes)."])

Based on the 2,000 vph threshold, the Caltrans EIR determined that with the proposed improvements, under 2030 traffic volumes the I-5 mixed-flow and truck lanes would operate primarily at LOS C or D, with a maximum LOS of E on three southbound segments during the PM peak hour. (Caltrans EIR p. 2.6-15.) Specific to the HOV lanes, the EIR determined that with the proposed improvements, the HOV lanes would operate at LOS C or better, with the exception of one segment that would operate at LOS D and six segments that would operate at LOS E. (EIR Table 2.6H 2030 No Build and Build LOS.) Significantly, the Caltrans EIR determined that none of the segments would operate at LOS F, which is considered deficient conditions.

Thus, based on an HOV lane capacity of 2,000 vph, Caltrans determined that the proposed improvements would result in LOS E or better operations on the segment of I-5 between SR-14 and Parker Road under long-range 2030 conditions. Based on the EIR's analysis, on September 1, 2009, Caltrans approved the improvement project, which presently is underway.

In addition to the Caltrans EIR utilizing a 2,000 vph threshold for the HOV lanes, the Metro *Draft 2010 Congestion Management Program* for Los Angeles County also utilizes a 2,000 vph capacity in conducting transportation impact analyses for both general purpose and HOV freeway lanes. (See, e.g., CMP Appendix A, Guidelines for Biennial Highway Monitoring, 2009 CMP Freeway Monitoring Stations and Levels of Service, Capacity., where all freeway segments (inclusive of those with HOV lanes) have a total capacity in an even multiple of 2,000.)

Thus, the 2,000 vph utilized for analysis of the I-5 HOV lanes as part of the Mission Village TIA is consistent with both Caltrans' own analysis methodology and the County's CMP.

Request to Utilize 1,600 VPH

Beginning in August 2010, the project applicant and Caltrans regularly discussed the methodology to be utilized in the TIA for the I-5 impacts analysis. Following release of the Mission Village Draft EIR, Caltrans staff requested that the analysis utilize a capacity of 1,600 vph for the HOV lanes based on the desire to achieve an operating condition for the HOV lanes that is better than the operating condition for the general purpose lanes, i.e., a desire that the HOV lanes operate at LOS C rather than LOS E or F as is accepted for the general purpose lanes. For buffered or contiguous HOV facilities, Caltrans considers that LOS C occurs at approximately 1,650 vph, or less if there is significant bus volume or if there are physical constraints. (*High Occupancy Vehicle Guidelines for Planning, Design and Operations*, Caltrans, 2003, Chapter 2, page 4.) In contrast, 2,000 vph is commonly accepted to represent the threshold between LOS E and F conditions for a freeway lane.

In response to the Caltrans comment, a supplemental analysis of I-5 utilizing a capacity of 1,600 vph to represent the maximum capacity for the HOV lanes has been prepared. As explained below, the analysis shows that while some segments of the I-5 would operate over capacity under the 2030 scenario

utilizing this criteria, the Mission Village project would not cause a significant project or cumulative impact.

1600 VPH Analysis

The traffic volume forecasts utilized for the Mission Village TIA have been re-evaluated using a capacity of 1,600 vph for the HOV lanes, as discussed above. As shown in Table 1, all lanes are forecast to operate at a V/C ratio less than 1.00 for the project's buildout year of 2021 under cumulative conditions. Under long-range buildout conditions, Table 2 shows that none of the mixed-flow lanes exceed a V/C ratio of 1.00, but several segments of the southbound HOV lane exceeds a V/C ratio of 1.00. Specifically, the southbound HOV lane from Rye Canyon Road to SR-14 is shown to have V/C ratios that range from 1.13 to 1.25. However, since the capacity used for the HOV lane (1,600 vph) represents mid-LOS C conditions, it is important to note that a V/C ratio of 1.00 in the HOV lanes represents a better operating condition than does a V/C ratio of 1.00 in a mixed-flow lane.

Consideration has also been given to the number of vehicles actually eligible to utilize the HOV lane. Under existing conditions within the project's study area, the volume of traffic eligible to utilize the HOV lane is approximately 27 percent of the total volume according to a survey prepared for the Caltrans EIR. Under long-range buildout peak conditions, when the total volume of traffic is approaching the maximum capacity of the freeway and traffic volumes reach the point of being uniformly distributed across all lanes, in no case does the HOV lane volume exceed 27 percent of the total volume. Therefore, the HOV lane volume estimates utilized for this study are attainable.

The analysis discussed above results in the same conclusions as did the project's TIA. With the planned freeway improvement project that is adding truck lanes and HOV lanes to the I-5 freeway within the Santa Clarita Valley, project traffic does not result in a significant impact to the freeway.

Table 1: Freeway Volumes and V/C Ratios - 2021 Conditions

		Capacities		2021 Without Project				2021 With Project				Project Increment	
				MF Lanes		HOV Lanes		MF Lanes		HOV Lanes			
Segment	**Lanes**	**MF Lanes**	**HOV Lanes**	**Vol**	**V/C**	**Vol**	**V/C**	**Vol**	**V/C**	**Vol**	**V/C**	**MF**	**HOV**
Northbound – AM Peak Hour													
401. North of Lake Hughes	4M	8,000	n/a	2,200	0.28	n/a	n/a	2,232	0.28	n/a	n/a	0.00	n/a
402. Between Lake Hughes & Parker	4M	8,000	n/a	2,400	0.30	n/a	n/a	2,445	0.31	n/a	n/a	0.01	n/a
403. Between Parker & Hasley Canyon	4M + 1H	8,000	1,600	2,390	0.30	310	0.19	2,433	0.30	320	0.20	0.00	0.01
404. Between Hasley Canyon & SR-126	4M + 1H + 1A	9,000	1,600	3,450	0.38	350	0.22	3,493	0.39	360	0.23	0.01	0.01
405. Between SR-126 & Rye Canyon	4M + 1H	8,000	1,600	3,900	0.49	500	0.31	3,900	0.49	500	0.31	0.00	0.00
406. Between Rye Canyon & Magic Mtn	4M + 1H	8,000	1,600	3,880	0.49	520	0.33	3,880	0.49	520	0.33	0.00	0.00
407. Between Magic Mtn & Valencia	4M + 1H+ 1A	9,000	1,600	4,750	0.53	550	0.34	4,882	0.54	560	0.35	0.01	0.01
408. Between Valencia & McBean	4M + 1H	8,000	1,600	5,710	0.71	590	0.37	5,890	0.74	610	0.38	0.03	0.01
409. Between McBean & Pico/Lyons	4M + 1H	8,000	1,600	5,650	0.71	650	0.41	5,881	0.74	680	0.43	0.03	0.02
410. Between Pico/Lyons & Calgrove	4M + 1H+ 1A	9,000	1,600	5,540	0.62	660	0.41	5,753	0.64	680	0.43	0.02	0.02
411. Between Calgrove & SR-14	4M + 1H + 1T	9,200	1,600	5,540	0.60	660	0.41	5,737	0.62	680	0.43	0.02	0.02
412. South of SR-14	6M + 1H + 2T	14,400	1,600	7,500	0.52	700	0.44	7,623	0.53	710	0.44	0.01	0.00
Northbound – PM Peak Hour													
401. North of Lake Hughes	4M	8,000	n/a	4,000	0.50	n/a	n/a	4,066	0.51	n/a	n/a	0.01	n/a
402. Between Lake Hughes & Parker	4M	8,000	n/a	4,700	0.59	n/a	n/a	4,812	0.60	n/a	n/a	0.01	n/a
403. Between Parker & Hasley Canyon	4M + 1H	8,000	1,600	5,120	0.64	480	0.30	5,252	0.66	500	0.31	0.02	0.01
404. Between Hasley Canyon & SR-126	4M + 1H + 1A	9,000	1,600	5,790	0.64	510	0.32	5,922	0.66	530	0.33	0.02	0.01
405. Between SR-126 & Rye Canyon	4M + 1H	8,000	1,600	5,380	0.67	620	0.39	5,403	0.68	620	0.39	0.01	0.00
406. Between Rye Canyon & Magic Mtn	4M + 1H	8,000	1,600	5,350	0.67	650	0.41	5,373	0.67	650	0.41	0.00	0.00
407. Between Magic Mtn & Valencia	4M + 1H+ 1A	9,000	1,600	5,740	0.64	660	0.41	5,843	0.65	670	0.42	0.01	0.01
408. Between Valencia & McBean	4M + 1H	8,000	1,600	6,430	0.80	770	0.48	6,564	0.82	780	0.49	0.02	0.01
409. Between McBean & Pico/Lyons	4M + 1H	8,000	1,600	6,410	0.80	790	0.49	6,545	0.82	810	0.51	0.02	0.02
410. Between Pico/Lyons & Calgrove	4M + 1H+ 1A	9,000	1,600	6,610	0.73	790	0.49	6,723	0.75	800	0.50	0.02	0.01
411. Between Calgrove & SR-14	4M + 1H + 1T	9,200	1,600	6,590	0.72	810	0.51	6,689	0.73	820	0.51	0.01	0.00
412. South of SR-14	6M + 1H + 2T	14,400	1,600	13,780	0.96	1,420	0.89	13,860	0.96	1,430	0.89	0.00	0.00
Southbound – AM Peak Hour													
401. North of Lake Hughes	4M	8,000	n/a	2,800	0.35	n/a	n/a	2,887	0.36	n/a	n/a	0.01	n/a
402. Between Lake Hughes & Parker	4M	8,000	n/a	3,400	0.43	n/a	n/a	3,529	0.44	n/a	n/a	0.01	n/a
403. Between Parker & Hasley Canyon	4M + 1H	8,000	1,600	3,920	0.49	380	0.24	4,074	0.51	400	0.25	0.02	0.01
404. Between Hasley Canyon & SR-126	4M + 1H	8,000	1,600	4,600	0.58	400	0.25	4,742	0.59	420	0.26	0.01	0.01
405. Between SR-126 & Rye Canyon	4M + 1H+ 1A	9,000	1,600	4,760	0.53	440	0.28	4,793	0.53	440	0.28	0.00	0.00
406. Between Rye Canyon & Magic Mtn	4M + 1H+ 1A	9,000	1,600	5,250	0.58	450	0.28	5,277	0.59	450	0.28	0.01	0.00
407. Between Magic Mtn & Valencia	4M + 1H	8,000	1,600	5,330	0.67	470	0.29	5,569	0.70	500	0.31	0.03	0.02
408. Between Valencia & McBean	4M + 1H+ 1A	9,000	1,600	6,400	0.71	500	0.31	6,623	0.74	520	0.33	0.03	0.02
409. Between McBean & Pico/Lyons	4M + 1H	8,000	1,600	6,580	0.82	520	0.33	6,761	0.85	540	0.34	0.03	0.01
410. Between Pico/Lyons & Calgrove	4M + 1H + 1T	9,200	1,600	6,770	0.74	530	0.33	6,900	0.75	550	0.34	0.01	0.01
411. Between Calgrove & SR-14	4M + 1H + 2T	10,400	1,600	6,970	0.67	530	0.33	7,080	0.68	540	0.34	0.01	0.01
412. South of SR-14	6M + 1H + 2T	14,400	1,600	13,690	0.95	1,410	0.88	13,789	0.96	1,420	0.89	0.01	0.01

(Continued)

Table 1: Freeway Volumes and V/C Ratios - 2021 Conditions (Continued)

				2021 Without Project				2021 With Project				Project Increment	
		Capacities		MF Lanes		HOV Lanes		MF Lanes		HOV Lanes			
Segment	**Lanes**	**MF Lanes**	**HOV Lanes**	**Vol**	**V/C**	**Vol**	**V/C**	**Vol**	**V/C**	**Vol**	**V/C**	**MF**	**HOV**
Southbound – PM Peak Hour													
401. North of Lake Hughes	4M	8,000	n/a	3,800	0.48	n/a	n/a	3,834	0.48	n/a	n/a	0.00	n/a
402. Between Lake Hughes & Parker	4M	8,000	n/a	4,100	0.51	n/a	n/a	4,150	0.52	n/a	n/a	0.01	n/a
403. Between Parker & Hasley Canyon	4M + 1H	8,000	1,600	4,370	0.55	430	0.27	4,432	0.55	440	0.28	0.00	0.01
404. Between Hasley Canyon & SR-126	4M + 1H	8,000	1,600	5,240	0.66	460	0.29	5,289	0.66	470	0.29	0.00	0.00
405. Between SR-126 & Rye Canyon	4M + 1H+ 1A	9,000	1,600	5,820	0.65	480	0.30	5,862	0.65	490	0.31	0.00	0.01
406. Between Rye Canyon & Magic Mtn	4M + 1H+ 1A	9,000	1,600	6,970	0.77	530	0.33	7,021	0.78	540	0.34	0.01	0.01
407. Between Magic Mtn & Valencia	4M + 1H	8,000	1,600	6,800	0.85	600	0.38	6,973	0.87	610	0.38	0.02	0.00
408. Between Valencia & McBean	4M + 1H+ 1A	9,000	1,600	7,420	0.82	680	0.43	7,637	0.85	690	0.43	0.03	0.00
409. Between McBean & Pico/Lyons	4M + 1H	8,000	1,600	7,230	0.90	770	0.48	7,483	0.94	780	0.49	0.04	0.01
410. Between Pico/Lyons & Calgrove	4M + 1H + 1T	9,200	1,600	7,420	0.81	780	0.49	7,641	0.83	800	0.50	0.02	0.01
411. Between Calgrove & SR-14	4M + 1H + 2T	10,400	1,600	7,520	0.72	780	0.49	7,725	0.74	800	0.50	0.02	0.01
412. South of SR-14	6M + 1H + 2T	14,400	1,600	10,330	0.72	970	0.61	10,461	0.73	980	0.61	0.01	0.00

MF (or M) = Mixed-Flow/General Purpose Lane (Capacity = 2,000 vehicles per hour)
HOV (or H) = HOV Lane (Capacity = 1,600 vehicles per hour)
A = Auxiliary Lane (Capacity = 1,000 vehicles per hour)
T = Truck Lane (Capacity = 1,200 vehicles per hour)

Capacities derived from PeMS data and through discussions with Caltrans staff.

Table 2: Freeway Volumes and V/C Ratios - Buildout Conditions

		Capacities		Long-Range Without Project				Long-Range With Project				Project Increment	
				MF Lanes		HOV Lanes		MF Lanes		HOV Lanes			
Segment	**Lanes**	**MF Lanes**	**HOV Lanes**	**Vol**	**V/C**	**Vol**	**V/C**	**Vol**	**V/C**	**Vol**	**V/C**	**MF**	**HOV**
Northbound – AM Peak Hour													
401. North of Lake Hughes	4M	8,000	n/a	3,368	0.42	n/a	n/a	3,400	0.43	n/a	n/a	0.01	n/a
402. Between Lake Hughes & Parker	4M	8,000	n/a	3,655	0.46	n/a	n/a	3,700	0.46	n/a	n/a	0.00	n/a
403. Between Parker & Hasley Canyon	4M + 1H	8,000	1,600	3,717	0.46	330	0.21	3,760	0.47	340	0.21	0.01	0.00
404. Between Hasley Canyon & SR-126	4M + 1H + 1A	9,000	1,600	5,277	0.59	370	0.23	5,320	0.59	380	0.24	0.00	0.01
405. Between SR-126 & Rye Canyon	4M + 1H	8,000	1,600	5,480	0.69	520	0.33	5,480	0.69	520	0.33	0.00	0.00
406. Between Rye Canyon & Magic Mtn	4M + 1H	8,000	1,600	5,450	0.68	550	0.34	5,450	0.68	550	0.34	0.00	0.00
407. Between Magic Mtn & Valencia	4M + 1H+ 1A	9,000	1,600	6,148	0.68	610	0.38	6,280	0.70	620	0.39	0.02	0.01
408. Between Valencia & McBean	4M + 1H	8,000	1,600	6,990	0.87	710	0.44	7,170	0.90	730	0.46	0.03	0.02
409. Between McBean & Pico/Lyons	4M + 1H	8,000	1,600	7,019	0.88	720	0.45	7,250	0.91	750	0.47	0.03	0.02
410. Between Pico/Lyons & Calgrove	4M + 1H+ 1A	9,000	1,600	6,857	0.76	710	0.44	7,070	0.79	730	0.46	0.03	0.02
411. Between Calgrove & SR-14	4M + 1H + 1T	9,200	1,600	6,863	0.75	720	0.45	7,060	0.77	740	0.46	0.02	0.01
412. South of SR-14	6M + 2H + 2T	14,400	3,200	9,057	0.63	1,010	0.32	9,180	0.64	1,020	0.32	0.01	0.00
Northbound – PM Peak Hour													
401. North of Lake Hughes	4M	8,000	n/a	6,334	0.79	n/a	n/a	6,400	0.80	n/a	n/a	0.01	n/a
402. Between Lake Hughes & Parker	4M	8,000	n/a	7,388	0.92	n/a	n/a	7,500	0.94	n/a	n/a	0.02	n/a
403. Between Parker & Hasley Canyon	4M + 1H	8,000	1,600	7,538	0.94	1,310	0.82	7,670	0.96	1,330	0.83	0.02	0.01
404. Between Hasley Canyon & SR-126	4M + 1H + 1A	9,000	1,600	7,848	0.87	1,300	0.81	7,980	0.89	1,320	0.83	0.02	0.02
405. Between SR-126 & Rye Canyon	4M + 1H	8,000	1,600	6,787	0.85	1,290	0.81	6,810	0.85	1,290	0.81	0.00	0.00
406. Between Rye Canyon & Magic Mtn	4M + 1H	8,000	1,600	6,797	0.85	1,280	0.80	6,820	0.85	1,280	0.80	0.00	0.00
407. Between Magic Mtn & Valencia	4M + 1H+ 1A	9,000	1,600	6,697	0.74	1,290	0.81	6,800	0.76	1,300	0.81	0.02	0.00
408. Between Valencia & McBean	4M + 1H	8,000	1,600	7,326	0.92	1,330	0.83	7,460	0.93	1,340	0.84	0.01	0.01
409. Between McBean & Pico/Lyons	4M + 1H	8,000	1,600	6,895	0.86	1,350	0.84	7,030	0.88	1,370	0.86	0.02	0.02
410. Between Pico/Lyons & Calgrove	4M + 1H+ 1A	9,000	1,600	6,897	0.77	1,380	0.86	7,010	0.78	1,390	0.87	0.01	0.01
411. Between Calgrove & SR-14	4M + 1H + 1T	9,200	1,600	6,811	0.74	1,380	0.86	6,910	0.75	1,390	0.87	0.01	0.01
412. South of SR-14	6M + 2H + 2T	14,400	3,200	14,190	0.99	3,120	0.98	14,270	0.99	3,130	0.98	0.00	0.00
Southbound – AM Peak Hour													
401. North of Lake Hughes	4M	8,000	n/a	4,613	0.58	n/a	n/a	4,700	0.59	n/a	n/a	0.01	n/a
402. Between Lake Hughes & Parker	4M	8,000	n/a	5,571	0.70	n/a	n/a	5,700	0.71	n/a	n/a	0.01	n/a
403. Between Parker & Hasley Canyon	4M + 1H	8,000	1,600	6,336	0.79	690	0.43	6,490	0.81	710	0.44	0.02	0.01
404. Between Hasley Canyon & SR-126	4M + 1H	8,000	1,600	6,628	0.83	710	0.44	6,770	0.85	730	0.46	0.02	0.02
405. Between SR-126 & Rye Canyon	4M + 1H+ 1A	9,000	1,600	6,657	0.74	710	0.44	6,690	0.74	710	0.44	0.00	0.00
406. Between Rye Canyon & Magic Mtn	4M + 1H+ 1A	9,000	1,600	6,663	0.74	710	0.44	6,690	0.74	710	0.44	0.00	0.00
407. Between Magic Mtn & Valencia	4M + 1H	8,000	1,600	6,481	0.81	750	0.47	6,720	0.84	780	0.49	0.03	0.02
408. Between Valencia & McBean	4M + 1H+ 1A	9,000	1,600	7,567	0.84	890	0.56	7,790	0.87	910	0.57	0.03	0.01
409. Between McBean & Pico/Lyons	4M + 1H	8,000	1,600	7,359	0.92	940	0.59	7,540	0.94	960	0.60	0.02	0.01
410. Between Pico/Lyons & Calgrove	4M + 1H + 1T	9,200	1,600	7,060	0.77	990	0.62	7,190	0.78	1,010	0.63	0.01	0.01
411. Between Calgrove & SR-14	4M + 1H + 2T	10,400	1,600	7,170	0.69	1,010	0.63	7,280	0.70	1,020	0.64	0.01	0.01
412. South of SR-14	6M + 2H + 2T	14,400	3,200	13,701	0.95	2,990	0.93	13,800	0.96	3,000	0.94	0.01	0.01

(Continued)

Table 2: Freeway Volumes and V/C Ratios - Buildout Conditions (Continued)

Segment	Lanes	Capacities		Long-Range Without Project				Long-Range With Project				Project Increment	
				MF Lanes		HOV Lanes		MF Lanes		HOV Lanes			
		MF Lanes	HOV Lanes	Vol	V/C	Vol	V/C	Vol	V/C	Vol	V/C	MF	HOV
Southbound – PM Peak Hour													
401. North of Lake Hughes	4M	8,000	n/a	6,366	0.80	n/a	n/a	6,400	0.80	n/a	n/a	0.00	n/a
402. Between Lake Hughes & Parker	4M	8,000	n/a	6,850	0.86	n/a	n/a	6,900	0.86	n/a	n/a	0.00	n/a
403. Between Parker & Hasley Canyon	4M + 1H	8,000	1,600	6,608	0.83	1,320	0.83	6,670	0.83	1,330	0.83	0.00	0.00
404. Between Hasley Canyon & SR-126	4M + 1H	8,000	1,600	7,851	0.98	1,390	0.87	7,900	0.99	1,400	0.88	0.01	0.01
405. Between SR-126 & Rye Canyon	4M + 1H+ 1A	9,000	1,600	7,578	0.84	1,470	0.92	7,630	0.85	1,470	0.92	0.01	0.00
406. Between Rye Canyon & Magic Mtn	4M + 1H+ 1A	9,000	1,600	8,399	0.93	1,840	1.15	8,460	0.94	1,840	1.15	0.01	0.00
407. Between Magic Mtn & Valencia	4M + 1H	8,000	1,600	7,777	0.97	1,940	1.21	7,960	1.00	1,940	1.21	0.03	0.00
408. Between Valencia & McBean	4M + 1H+ 1A	9,000	1,600	8,313	0.92	1,960	1.23	8,540	0.95	1,960	1.23	0.03	0.00
409. Between McBean & Pico/Lyons	4M + 1H	8,000	1,600	7,747	0.97	1,990	1.24	8,000	1.00	2,000	1.25	0.03	0.01
410. Between Pico/Lyons & Calgrove	4M + 1H + 1T	9,200	1,600	8,389	0.91	1,870	1.17	8,610	0.94	1,890	1.18	0.03	0.01
411. Between Calgrove & SR-14	4M + 1H + 2T	10,400	1,600	8,885	0.85	1,790	1.12	9,090	0.87	1,810	1.13	0.02	0.01
412. South of SR-14	6M + 2H + 2T	14,400	3,200	11,719	0.81	2,140	0.67	11,850	0.82	2,150	0.67	0.01	0.00

MF (or M) = Mixed-Flow/General Purpose Lane (Capacity = 2,000 vehicles per hour)
HOV (or H) = HOV Lane (Capacity = 1,600 vehicles per hour)
A = Auxiliary Lane (Capacity = 1,000 vehicles per hour)
T = Truck Lane (Capacity = 1,200 vehicles per hour)

Capacities derived from PeMS data and through discussions with Caltrans staff.

Revised Pages, Mission Village Traffic Impact Analysis, AFA
(October 2010; March 2011)

Mission Village

TRAFFIC IMPACT ANALYSIS

March 2011

Deleted: October 2010

AUSTIN-FOUST ASSOCIATES, INC.

TRAFFIC ENGINEERING AND TRANSPORTATION PLANNING

- FINAL -

MISSION VILLAGE
Traffic Impact Analysis

Prepared by:

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March 24, 2011

Deleted: October 1, 2010

prioritized based on the actual land development activity as it occurs. Additional discussion of the Westside Roadway Phasing Analysis is provided in Section 4.3.

1.4 PERFORMANCE CRITERIA

For CEQA purposes, defined performance criteria are utilized to determine if a proposed project causes a significant impact. In most traffic studies, performance criteria are based on two primary measures. The first is "capacity", which establishes the vehicle carrying ability of a roadway and the second is "volume." The volume measure is either a traffic count (in the case of existing volumes) or a forecast for a future point in time. The ratio between the volume and the capacity gives a volume/capacity (V/C) ratio and based on that V/C ratio, a corresponding level of service (LOS) is defined. Traffic LOS is designated A through F with LOS A representing free flow conditions and LOS F representing severe traffic congestion. Traffic flow quality for each LOS is described in Table 1-1.

Table 1-2 summarizes the V/C ranges that correspond to LOS "A" through "F" for arterial roads, intersections and freeway segments. The V/C ranges listed for arterial roads and intersections within the study area are those used by the County of Los Angeles and the City of Santa Clarita. The V/C ranges listed for freeway segments are based on the V/C and LOS relationships specified in the *2000 Highway Capacity Manual* (see Reference 2 in Section 1.6 and referred to as "*HCM 2000*" in this report) for basic freeway sections with free-flow speeds of 105 kilometers per hour (65 miles per hour), and the V/C methodology is specified by the County's Congestion Management Program (CMP) for the evaluation of CMP freeway monitoring stations.

Both the V/C ratio and the LOS are used in determining impact significance. Certain LOS values are deemed unacceptable, and increases in the V/C ratio which cause or contribute to the LOS being unacceptable are defined as a significant impact (see following sections for details). Note that while the Caltrans guidelines for the preparation of traffic studies (see Reference 5 in Section 1.6) recommend the HCM method for the evaluation of State highway facilities, those guidelines do not include a threshold of significance criteria for the determination of a significant project impact that is based on the HCM methodologies. While the Caltrans guidelines do not identify specific impact criteria due to differences between rural and urban areas of the State, as well as differences between the northern, central, and southern regions, the local Caltrans Districts will determine the impact criteria based on the appropriate requirements of that District. As such, the thresholds of significance criteria specified by the local agencies (i.e., Caltrans District 7, County of Los Angeles, City of Santa Clarita, and the LA County CMP) are utilized for this analysis.

Table 1-5: Freeway Mainline Performance Criteria

V/C Calculation Methodology

Level of service to be based on peak hour V/C values calculated using the following assumptions:

Saturation/Service Flow Rates:

Mainline Mixed-flow/General Purpose Lane:	2,000 vehicles/hour/lane
Mainline Mixed-flow/General Purpose Lane on an Extended Uphill Grade:	1,600 vehicles/hour/lane
High Occupancy Vehicle (HOV) Lane:	1,600[1] vehicles/hour/lane
Auxiliary Lane:	1,000 vehicles/hour/lane
Truck Lane:	1,200 vehicles/hour/lane

Deleted: 200

Deleted: 2,200

Saturation flow rates derived from Caltrans PeMS data and through discussions with Caltrans staff.

[1] For buffered or contiguous HOV facilities, LOS C occurs at approximately 1,650 vph, or less if there is significant bus volume or if there are physical constraints (source: High Occupancy Vehicle Guidelines for Planning, Design and Operations, Caltrans, 2003, Chapter 2, page 4). However, for the purpose of this study, Caltrans has specified that the analysis utilize a capacity of 1,600 vph based on the desire to maintain an operating condition for the HOV lanes that is better than for general purpose lanes. As such, a V/C ratio of 1.00 in the HOV lane represents a better operating condition than a V/C ratio of 1.00 in the general purpose lanes.

Performance Standard

LOS E or existing LOS, whichever is worse (applicable to Urban areas)

Impact Threshold

A freeway mainline segment is considered to be adversely impacted if each of the following conditions are met:

The segment is forecast to operate deficiently (i.e., worse than the performance standard).

Compared to the V/C in the no-project alternative, the V/C in the with-project alternative increases by greater than or equal to .02 (the impact threshold specified in the CMP).

Abbreviations:

V/C – Volume/Capacity Ratio
PeMS – Performance Monitoring System
LOS – Level of Service
CMP – Congestion Management Program

4.1.3 State Highways

The project is located approximately 1.25 miles west of I-5, and approximately 0.5 miles south of SR-126. In the vicinity of the project site, I-5 is generally an eight-lane (four lanes in each direction) freeway. SR-126 is generally a four-lane highway between I-5 and Commerce Center Drive and it transitions to a two-lane highway west of Commerce Center Drive.

As shown previously in Section 2-1, the I-5 freeway currently operates at an acceptable level of service within the Santa Clarita Valley, with the exception of the southbound segments just north and south of the SR-14 interchange. A current project is underway to add one HOV lane in each direction to the I-5 within the Santa Clarita Valley from SR-14 to Parker Road, as well as add new dedicated truck lanes south of Pico Canyon Road. The first stage of that project will address the existing deficiency between Calgrove and SR-14 by adding dedicated truck lanes to that segment.

South of the SR-14, Caltrans is currently constructing the I-5/SR-14 Direct HOV Connector project. This project involves the construction of an elevated two-lane direct HOV connector at the I-5 and SR-14 interchange and construction of HOV lanes in the north- and southbound directions of I-5 at the interchange, which will address the existing deficiency south of SR-14.

An evaluation of the I-5 freeway for conditions with and without the project is provided in Table 4-3. The analysis is based on a 2021 horizon, which represents the estimated buildout year of the project. Year 2021 traffic volumes have been derived by interpolating between existing (2010) traffic counts and the SCVCTM Year 2035 long range cumulative buildout conditions traffic forecasts. Since the entire I-5 Truck Lane and HOV project is anticipated to be completed prior to the project's anticipated buildout date of 2021 (source: Caltrans, see correspondence in Appendix K), the I-5 Truck Lane and HOV project has been assumed in place for the analysis of the 2021 horizon.

The freeway impact analysis presented here is based on the Los Angeles County Congestion Management Program (CMP) impact criteria. This criteria identifies a significant project impact as when project traffic causes or worsens LOS F conditions by a V/C of .02 or more. As previously discussed in Section 1.4, since the Caltrans Guide for the Preparation of Traffic Studies does not identify specific impact criteria due to differences between rural and urban areas of the State, as well as differences between the northern, central, and southern regions, the local Caltrans Districts will determine the impact criteria based on the appropriate requirements of that District. For the purpose of this analysis, Caltrans District 7 staff has determined that the application of the CMP impact criteria is appropriate for the purpose of determining project impacts to the State highway system.

Excerpts, North Valencia Annexation Area Traffic Study, AFA (July 31, 1997); North Valencia Specific Plan No. 2 Traffic Study, AFA (March 2, 1999)

NORTH VALENCIA ANNEXATION AREA
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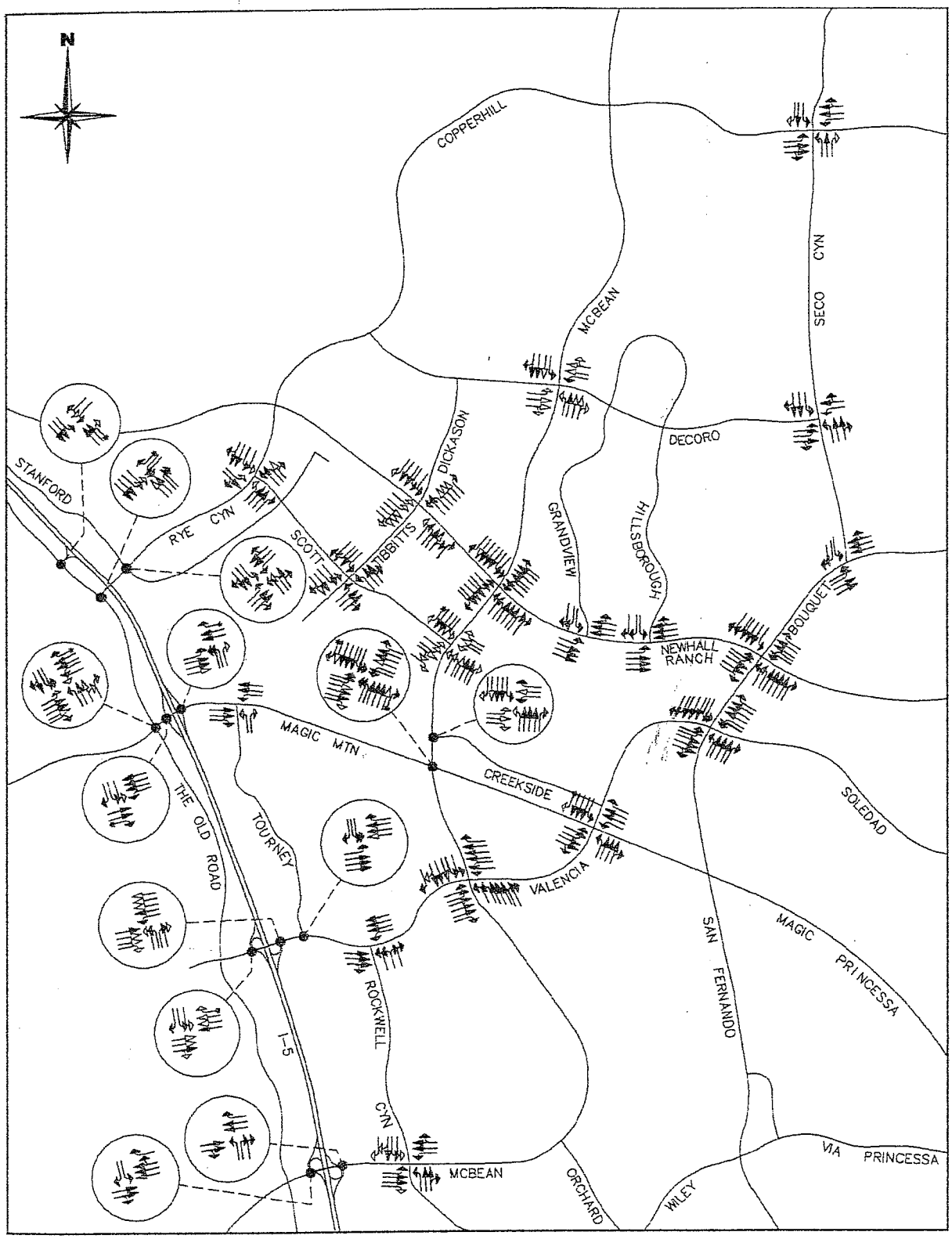
July 31, 1997



LEGEND
- EXISTING LANE
- FUTURE LANE
- FREE RIGHT-TURN LANE

Figure III-10

INTERSECTION LANE CONFIGURATIONS
-INTERIM YEAR SETTING

NORTH VALENCIA SPECIFIC PLAN NO. 2
TRAFFIC STUDY

DRAFT

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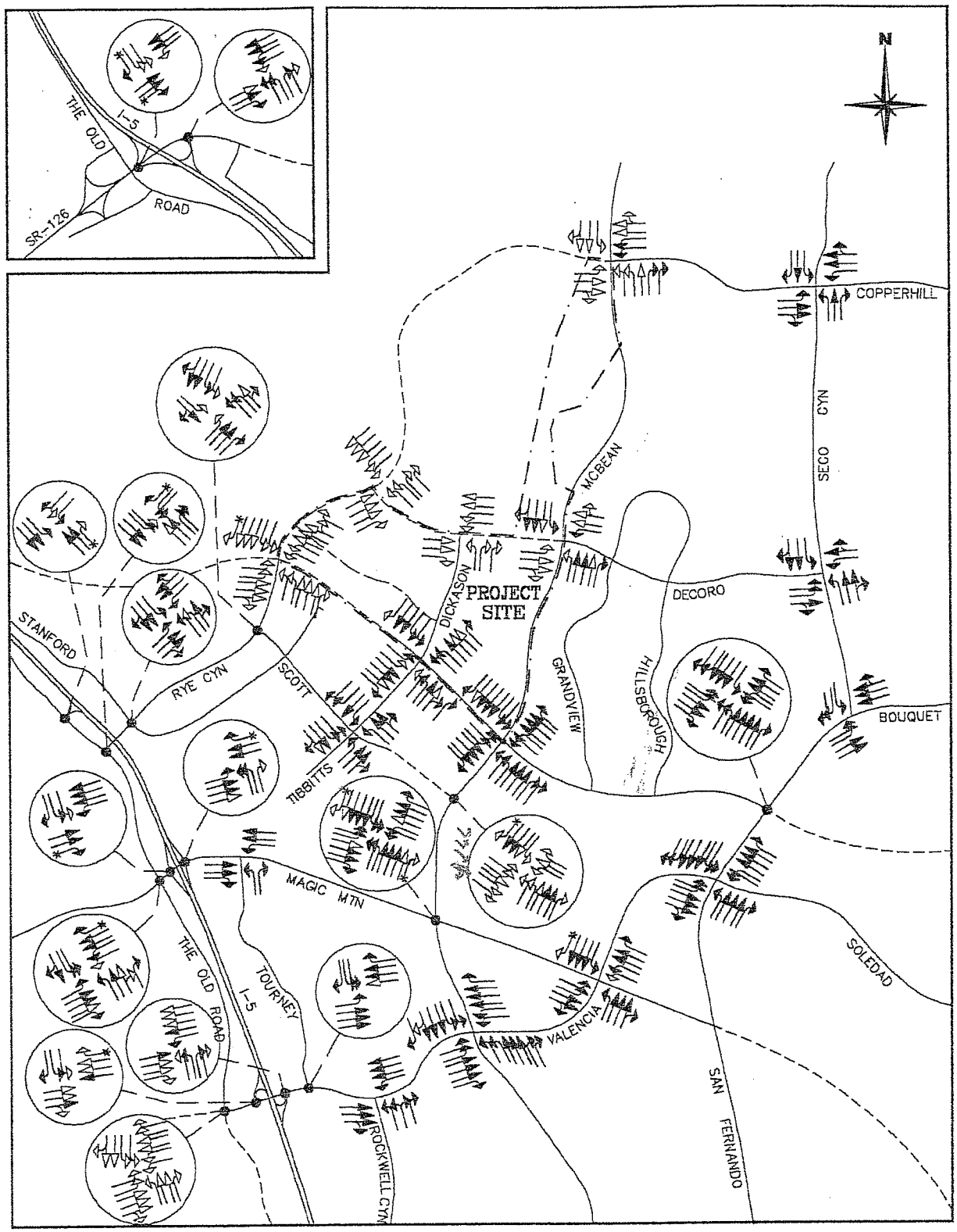
March 2, 1999



LEGEND

- EXISTING LANE
- FUTURE LANE
- FREE RIGHT-TURN LANE
- NEW ROADWAY LINK

Figure III-9

INTERSECTION LANE CONFIGURATIONS
-INTERIM YEAR CONDITIONS

ONE VALLEY ONE VISION

VALLEY-WIDE TRAFFIC STUDY

TECHNICAL REPORT FOR THE CIRCULATION ELEMENTS OF THE SANTA CLARITA VALLEY AREA PLAN UPDATE (LOS ANGELES COUNTY) AND THE CITY OF SANTA CLARITA GENERAL PLAN UPDATE

JUNE 2010

AUSTIN-FOUST ASSOCIATES, INC.
TRAFFIC ENGINEERING AND TRANSPORTATION PLANNING

ONE VALLEY ONE VISION

VALLEY-WIDE TRAFFIC STUDY

Technical Report for the Circulation Elements of the Santa Clarita Valley Area Plan Update (Los Angeles County) and the City of Santa Clarita General Plan Update

Prepared for:

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June 22, 2010

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1.0 INTRODUCTION

This report presents the results of a traffic study carried out for One Valley One Vision (OVOV). OVOV is a joint effort between the County of Los Angeles, the City of Santa Clarita, and Santa Clarita Valley residents and businesses to create a single vision and guidelines for the future growth of the Santa Clarita Valley and the preservation of natural resources. This traffic study presents information for the City of Santa Clarita General Plan Update and the Santa Clarita Valley Area Plan Update for the County of Los Angeles. More specifically, it contains existing and future traffic information that provides resource material that can assist the City and County in updating their Circulation Elements, and serves as a technical resource document for the Environmental Impact Reports being prepared by both the City and the County.

1.1 BACKGROUND

This traffic study was carried out to achieve three primary objectives:

1. Update the City and County's traffic forecasting model with current land use planning estimates
2. Prepare long-range traffic forecasts
3. Evaluate the proposed Land Use and Circulation Elements and propose potential changes to the arterial roadway component

The technical analysis results presented here pertain to the arterial roadway component of the City and County Circulation Elements. Existing conditions are compared with the anticipated growth in traffic on the City and County street system, and recommendations are made with respect to an updated arterial roadway component. A comparison is also made between long-range traffic forecasts based on the current City General Plan/County Area Plan and conditions based on the proposed OVOV Plan.

The area addressed in this traffic study includes the City, its sphere of influence, and unincorporated Los Angeles County areas of the Santa Clarita Valley. All three areas comprise what is referred to as the OVOV area, which is illustrated in Figure 1-1.

To derive traffic forecasts, use is made of the Santa Clarita Valley Consolidated Traffic Model (SCVCTM). This traffic model produces peak hour and average daily traffic (ADT) forecasts for the OVOV area roadway system. Buildout land use data from the proposed City General Plan/County Area Plan Land Use Elements has been used as the basis for the traffic forecasts, thereby showing future circulation system needs in relation to future land use projections.

Part of this work effort involved updating the traffic model originally developed in 1994 (see discussion on SCVCTM in Chapter 2.0) with the land use data noted above. A major update was previously carried out in 2004 and periodic refinements were subsequently made up until this update.

1.2 PERFORMANCE CRITERIA

To evaluate the roadway system in relation to future land use in the OVOV area, use is made of performance criteria. These criteria include "performance standards" and "thresholds of significance." The latter are used for identifying individual land development project impacts in an EIR context, and while not specifically applied in a planning study of this type, they are given here for informational purposes. The performance standards form part of City and County Policy (e.g., in the City's Circulation Element and in the County Congestion Management Program) and represent desired operating conditions for the OVOV roadway system. For a Circulation Element to be in "balance" with the Land Use Element of the General Plan, the circulation system must achieve the performance standard criteria.

The performance criteria used here are based on two primary measures. The first is "capacity", which establishes the vehicle carrying ability of a roadway, and the second is "volume." The volume measure is either a traffic count (in the case of existing volumes) or a forecast for a future point in time. The ratio between the volume and the capacity gives a volume/capacity (V/C) ratio and based on that V/C ratio, a corresponding level of service (LOS) is defined. Traffic LOS is designated A through F with LOS A representing free flow conditions and LOS F representing severe traffic congestion. Traffic flow quality for each LOS is provided in Table 1-1 based on descriptions for arterial roadways as contained in the 2000 Highway Capacity Manual (HCM 2000).

The performance criteria are separated according to two components of the circulation system; arterial roadways and freeway segments. ADT data as well as peak hour data is used in both cases to establish V/C and LOS measures and to define the performance criteria. The following sections outline the criteria for each of the two components.

Table 1-1: Level of Service Descriptions for Urban Streets

Level of Service	Example	Flow Conditions	Percent of free flow speeds (FFS)
A		LOS "A" describes primarily free-flow operations at average travel speeds, usually about 90 percent of the FFS for the given street class. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at signalized intersections is normal..	90
B		LOS "B" describes reasonably unimpeded operations at average travel speeds, usually about 70 percent of the FFS for the street class. Vehicles are completely unimpeded in their ability to maneuver with the traffic stream. Control delay at signalized intersections is minimal.	70
C		LOS "C" describes stable operations; however, ability to maneuver and change lanes in midblock locations may be more restricted that at LOS "B," and longer queues, adverse signal coordination, or both may contribute to lower average travel speeds of about 50 percent of the FFS for the street class.	50
D		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. Average travel speeds are about 40 percent of FFS.	40
E		LOS "E" is characterized by significant delays and average travel speeds of 33 percent or less of the FFS. Such operations are caused by a combination of adverse progression, high signal density, high volumes, extensive delays at critical intersections, and inappropriate signal timing.	33
F		LOS "F" is characterized by urban street flow at extremely low speeds, typically one-third to one-fourth of the FFS. Intersection congestion is likely at critical signalized locations, with high delays, high volumes, and extensive queuing.	25

Source: Highway Capacity Manual 2000, Transportation Research Board, National Research Council

1.2.1 Arterial Streets and Intersections

Arterial roadway segments are evaluated using a generalized average daily traffic (ADT) capacity as summarized in Table 1-2. They are based on the type of roadway as classified in the City General Plan/County Area Plan Circulation Elements. It can be noted that these ADT capacity values are suitable for planning purposes, but they are not intended as precise measures of capacity. The ultimate capacity of a roadway is based upon a number of factors including the relationships between peak hour and daily traffic volumes, the roadway design features (allowing parking, driveway access and cross streets, the intersection geometrics, etc.), the amount of traffic crossing the roadway or turning onto or off of the roadway at intersecting roadways, and the actual turn movements at an intersection.

Table 1-2: Daily Roadway Capacity Values

General Plan Designation	Lanes	Ultimate Capacity (Level of Service "E")[1]
Major Arterial Highway	8	72,000
	6	54,000
Secondary Arterial Highway	4	36,000
Limited Secondary Arterial Highway	2	18,000
Collector[2]	2	15,000

[1]The ultimate capacity value is an estimate of the physical limit of daily traffic flows (level of service "E") based upon typical suburban peak hour characteristics. This value can vary significantly depending upon volume demand characteristics (amount of off-peak travel and duration of peak periods) as well as roadway design features (access, spacing, intersection geometrics, etc.).
[2]Collector roadways are not identified in the City/County Circulation Elements but are included in the traffic analysis on a limited basis.

Although level of service is an important factor in transportation planning, it is not the only or even the most important criterion used in all cases. Depending on the area being planned, other factors may be considered as having priority over expedited movement of vehicles. For example, in some commercial areas, high-speed vehicle movements could be detrimental to the desired character of development. In all portions of the OVOV planning area, traffic level of service must be weighed against other community priorities such as quality of life and environmental resource protection, in order to achieve a balanced approach to transportation and land use planning.

The County General Plan does not specify an acceptable LOS for the purpose of long-range planning, however in conformance with the Los Angeles County Congestion Management Program (LA CMP), the maximum acceptable level of service on arterial roads (i.e., major, secondary, and limited secondary highways) within the OVOV planning area is LOS E. The City strives to achieve LOS D or

better on arterial roads to the extent feasible given right-of-way and physical constraints, while recognizing that in higher density urban areas there is generally a tradeoff between vehicle LOS and other factors such as pedestrian mobility, and that LOS E is acceptable in those types of urban settings. In residential neighborhoods, vehicular LOS is less important than other factors, such as traffic volumes and speeds.

Table 1-3 summarizes the V/C ranges that correspond to LOS "A" through "F" for arterial roads and intersections as used by the City and the County.

Table 1-3: LOS Criteria for Arterials

LOS	Roadway V/C & Intersection ICU Ranges
A	0.00 – 0.60
B	0.61 – 0.70
C	0.71 – 0.80
D	0.81 – 0.90
E	0.91 – 1.00
F	Above 1.00
Source: Congestion Management Program of Los Angeles County	

Both the V/C ratio and the LOS are used in determining impact significance. As noted above, certain LOS values are deemed unacceptable, and increases in the V/C ratio which cause or contribute to the LOS being unacceptable are defined as a significant impact.

In establishing V/C based performance criteria, there are certain items that need to be addressed to obtain suitable V/C estimates and relate them to LOS. For instance, while average daily traffic (ADT) is a useful measure to show general levels of traffic on a facility and to provide data for other related aspects such as noise and air quality, highway congestion is largely a peak hour or peak period occurrence. Because of this, ADT is not used here as the sole basis for capacity evaluation, but instead this evaluation also evaluates those parts of the day when such congestion can occur, specifically the a.m. and p.m. peak hours.

Levels of service for arterial roadway intersections are determined based on operating conditions during the a.m. and p.m. peak hours. The intersection capacity utilization (ICU) methodology is applied, providing a planning level basis for determining V/C and LOS. This methodology sums the V/C ratios for the critical movements of an intersection and is the preferred intersection analysis procedure of the City of Santa Clarita and the County of Los Angeles. The ICU calculation methodology is summarized in Table 1-4.

Table 1-4: Arterial Intersection ICU Methodology

City of Santa Clarita ICU Calculation Methodology Level of service to be based on peak hour intersection capacity utilization (ICU) values calculated using the following assumptions: Saturation Flow Rates: 1,750 vehicles/hour/lane for all lanes Clearance Interval: .10
County of Los Angeles ICU Calculation Methodology Level of service to be based on peak hour intersection capacity utilization (ICU) values calculated using the following assumptions: Saturation Flow Rates: 1,600 vehicles/hour/lane for through lanes, right-turn lanes, and single left-turn lanes 2,880 vehicles/hour/lane for dual left-turn lanes (total of both lanes) Clearance Interval: .10

1.2.2 Freeway Segments

Table 1-5 summarizes the V/C ranges that correspond to LOS "A" through "F" for general freeway segments. The V/C ranges listed for freeway segments are based on the V/C and LOS relationships specified in the *2000 Highway Capacity Manual* (see Reference 1 in Section 1.5 and referred to as "*HCM 2000*" in this report) for basic freeway sections with free-flow speeds of 105 kilometers per hour (65 miles per hour), and are specified by the County's Congestion Management Program (CMP) for the evaluation of CMP freeway monitoring stations.

Table 1-5: LOS Criteria for Basic Freeway Segments

LOS	Freeway Segment Volume Density Ranges	Freeway Segment V/C Ranges
A	0.0 – 11.0	0.00 – 0.30
B	11.1 – 18.0	0.31 – 0.50
C	18.1 – 26.0	0.51 – 0.71
D	26.1 – 35.0	0.72 – 0.89
E	35.1 – 45.0	0.90 – 1.00
F	Above 45.0	Above 1.00
Sources: HCM 2000 Congestion Management Program of Los Angeles County		

1.3 INFORMATION IN THIS REPORT

The information presented in this report is arranged as follows:

Chapter 1.0 Introduction – background and scope plus a description of the performance criteria used in the traffic analysis.

Chapter 2.0 Transportation Setting – describes existing conditions with respect to circulation, and future growth forecasts.

Chapter 3.0 Arterial Roadways – presents the proposed roadway component of the City and County Circulation Elements.

Chapter 4.0 Traffic Analysis – discusses future traffic volumes and levels of service, and shows the improvements needed to implement the proposed roadway plan.

Technical appendices contain tabular data as appropriate, and traffic model data can be found in the previously referenced traffic model report.

1.4 DEFINITIONS

Certain terms used throughout this report are defined below to clarify their intended meaning:

ADT Average Daily Traffic. Generally used to measure the total two-directional traffic volumes passing a given point on a roadway.

CMP Congestion Management Program. A state mandated program administered by the Los Angeles County Metropolitan Transportation Authority (MTA) that provides a mechanism for coordinating land use and development decisions.

DU Dwelling Unit. Used in quantifying residential land use.

ICU	Intersection Capacity Utilization. A measure of the volume to capacity ratio for an intersection. Typically used to determine the peak hour level of service for a given set of intersection volumes.
LOS	Level of Service. A scale used to evaluate circulation system performance based on intersection ICU values or volume/capacity ratios of arterial segments.
Peak Hour	This refers to the hour during the a.m. peak period (typically 7 a.m. - 9 a.m.) or the p.m. peak period (typically 3 p.m. - 6 p.m.) in which the greatest number of vehicle trips are generated by a given land use or are traveling on a given roadway.
Tripend	A trip generation measure which represents the total trips entering and leaving a location.
TSF	Thousand Square Feet. Used in quantifying non-residential land uses, and refers to building floor area.
V/C	Volume to Capacity Ratio. This is typically used to describe the percentage of capacity utilized by existing or projected traffic on a segment of an arterial or intersection.
VPD	Vehicles Per Day. Similar to ADT, but more typically applied to trip generation (i.e., the amount of traffic generated by a given amount of land use).
VPH	Vehicles Per Hour. Used for roadway volumes (counts or forecasts) and trip generation estimates. Measures the number of vehicles in a one-hour period, typically the a.m. or p.m. peak hour.

1.5 REFERENCES

1. "Highway Capacity Manual 2000," Transportation Research Board, National Research Council, 2000.

2. "Santa Clarita Valley Consolidated Traffic Model Report," County of Los Angeles Department of Public Works, 1994.

3. "Draft Santa Clarita Valley Consolidated Traffic Model 2004 Update and Validation," City of Santa Clarita and County of Los Angeles Department of Public Works, June 2004.

4. "Transportation Concept Report, Interstate 5," California Department of Transportation District 7 Office of Advance Planning System Planning Unit, November 1998.

5. Project Report – I-5 HOV and Truck Lane Project from SR-14 to Parker Road in Los Angeles County," California Department of Transportation District 7, August 2009.

6. "Interregional Transportation Strategic Plan," California Department of Transportation, June 1998.

7. "North County Combined Highway Corridors Study Final Report," Los Angeles County Metropolitan Transportation Authority, June 2004.

8. "2004 Congestion Management Program for Los Angeles County," Los Angeles County Metropolitan Transportation Authority, July 2004.

2.0 TRANSPORTATION SETTING

This chapter discusses the transportation setting for the Santa Clarita Valley roadway system. Existing conditions are described including traffic volumes on the City and County street system and levels of service (LOS) for those same street system segments and for key intersections. Information on future land use and the corresponding increase in study area trip generation is also given and discussed in relation to its growth implications.

2.1 EXISTING ROADWAYS

The existing roadway system within the OVOV planning area is illustrated in Figure 2-1. Shown here is the number of lanes (midblock) on individual segments of the valley-wide roadway system.

The primary regional roadway components serving the Santa Clarita Valley are the I-5 and SR-14 freeways, passing through the Valley from north to south, and the SR-126 highway, which connects the Santa Clarita Valley to Ventura County. The I-5 freeway is listed as a "high priority corridor" on the National Highway System (NHS). The I-5 and the SR-14 freeways are part of the Surface Transportation Assistance Act (STAA) national truck network, and the SR-126 highway is a designated terminal access route for the STAA national truck network. 18 interchanges, 10 on I-5 and eight on SR-14, serve the Valley. The 10 interchanges on the I-5 are located at Sloan Canyon Road/Lake Hughes Road, Parker Road/Ridge Route Road, Hasley Canyon Road, SR-126/Newhall Ranch Road, Rye Canyon (at The Old Road), Magic Mountain Parkway, Valencia Boulevard, Stevenson Ranch Parkway/McBean Parkway, Pico Canyon Road/Lyons Avenue, and Calgrove Boulevard. The eight interchanges on the SR-14 are located at Agua Dulce Canyon Road, Soledad Canyon Road, Sand Canyon Road, Sierra Highway, Via Princessa, Golden Valley Road, Placerita Canyon Road, and Newhall Avenue.

Several major north-south arterials run through the Valley. Newhall Avenue/Railroad Avenue/Bouquet Canyon Road originates at the southern part of the SR-14 freeway, traverses the Valley, and terminates at Elizabeth Lake Road, just west of Palmdale, and well north of the OVOV boundaries. The roadway varies in width from two to eight lanes. Stevenson Ranch Road/McBean Parkway originates at Pico Canyon Road, traverses the City, and terminates at Copper Hill Drive. The roadway varies in width from four to eight lanes. Whites Canyon Road originates at Via Princessa and terminates at Bouquet Canyon Road. The roadway varies in width from four to six lanes. The Old Road originates

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near the SR-14/I-5 interchange and traverses the entire west side of the Valley, terminating north of Lake Hughes Road. The roadway varies in width from two to six lanes. Golden Valley Road originates just south of the SR-14 freeway, traverses the middle portion of the Valley, and terminates at Newhall Ranch Road. Sierra Highway originates near the SR-14/I-5 interchange, traverses the Valley on the east side, and terminates at Angeles Forest Highway just north of the Angeles National Forest and well north-east of the OVOV boundaries. Sierra Highway varies between two to six lanes.

Several east-west arterials serve the Valley and provide access to the I-5 and SR-14 freeways. Many of these arterials are incomplete and provide access to only portions of the Valley. To the north is Rye Canyon Road/Copper Hill Drive with four to eight lanes throughout and a half interchange at the I-5 freeway. The next arterial to the south is SR-126/Newhall Ranch Road, which varies from four to eight lanes throughout, provides an interchange to the I-5 freeway, and terminates at Golden Valley Road. Magic Mountain Parkway originates just west of the I-5 freeway and terminates at Railroad Avenue. The main east-west arterial is further to the south and exists as both Valencia Boulevard and Soledad Canyon Road, which varies from two to seven lanes throughout. Valencia Boulevard originates just west of the I-5 freeway, is renamed to Soledad Canyon Road at the Bouquet Canyon Road intersection, and terminates to the east of the SR-14 freeway near the Acton Canyon area and well east of the OVOV boundaries. This roadway features interchanges with the I-5 freeway as well as the SR-14 freeway. The final east-west arterial is Pico Canyon Road/Lyons Avenue, which varies from two to six lanes. This stretch of roadway is relatively short, starting west of Stevenson Ranch Parkway in the Santa Susana Mountains and terminating at Railroad Avenue. It also provides an interchange with the I-5 freeway. The Cross Valley Connector is a primarily east-west roadway formed by the combination of Newhall Ranch Road and Golden Valley Road. As Newhall Ranch Road, the Cross Valley Connector originates at the SR-126/I-5 interchange and continues east to Soledad Canyon Road. At Soledad Canyon Road, the Cross Valley Connector continues south as Golden Valley Road, resulting in a continuous roadway between SR-126 and the SR-14 freeway.

Within the Santa Clarita Valley, connectivity of the street network is interrupted by topographic constraints, including rolling terrain, canyons, and the Santa Clara River. In addition, the prevalent subdivision pattern comprised of local cul-de-sac streets with limited connectivity, acts to funnel all traffic onto collector and arterial streets. As a result, regional traffic is concentrated on a limited number of arterial streets. Projects such as the Via Princessa gap closure, and plans to create a new north-south connection through the center of the Valley (Santa Clarita Parkway), are examples of projects intended to increase connectivity.

2.1.1 Existing Traffic Volumes

Figure 2-2 shows the study area roadway segments included in this evaluation, which includes all roadway segments identified in the Highway Plan (see discussion in Chapter 3.0) and select collector streets. This analysis also includes key intersections of Highway Plan roadways, which are considered the principal intersections within the Santa Clarita Valley. As such, these principal intersections are required to accommodate significant volumes of traffic and are critical to vehicle mobility within the Santa Clarita Valley. Figure 2-3 shows the principal intersections included in this evaluation.

Existing average daily traffic (ADT) volumes on the study area street system are illustrated in Figure 2-4. These counts were collected at various times between 2005 to 2010 by the Traffic and Transportation Planning Division of the Department of Public Works of the City of Santa Clarita, by the Traffic and Lighting division of the County of Los Angeles Department of Public works, and by various development projects as part of their entitlement process. These counts provide a representative sample of existing traffic conditions throughout the Valley.

Illustrations of peak hour turning movement volumes for each principal intersection can be found in Figure 2-5 for the a.m. peak hour and in Figure 2-6 for the p.m. peak hour. As with the ADT counts, the peak hour counts were collected at various times between 2007 and 2010 and provide a representative sample of existing traffic conditions throughout the Valley.

2.1.2 Existing Levels of Service

As discussed in the performance criteria section of Chapter 1.0, LOS is based on two primary measures. The first is “capacity” which establishes the vehicle carrying ability of a roadway and the second is “volume.” The volume measure is either a traffic count (in the case of existing volumes) or a forecast for a future point in time. The ratio between the volume and the capacity gives a volume/capacity (V/C) ratio and based on that V/C ratio, a corresponding LOS is defined.

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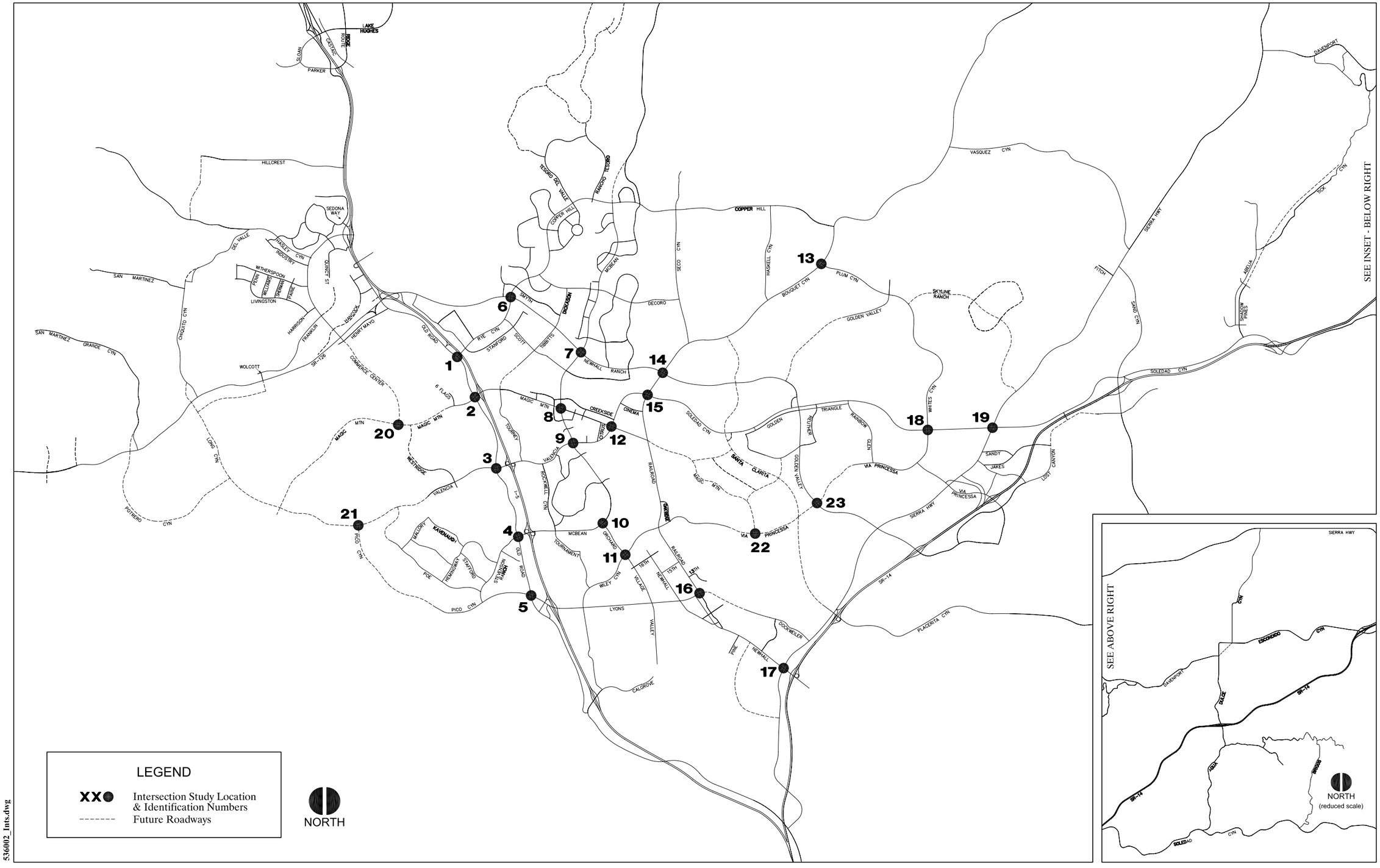
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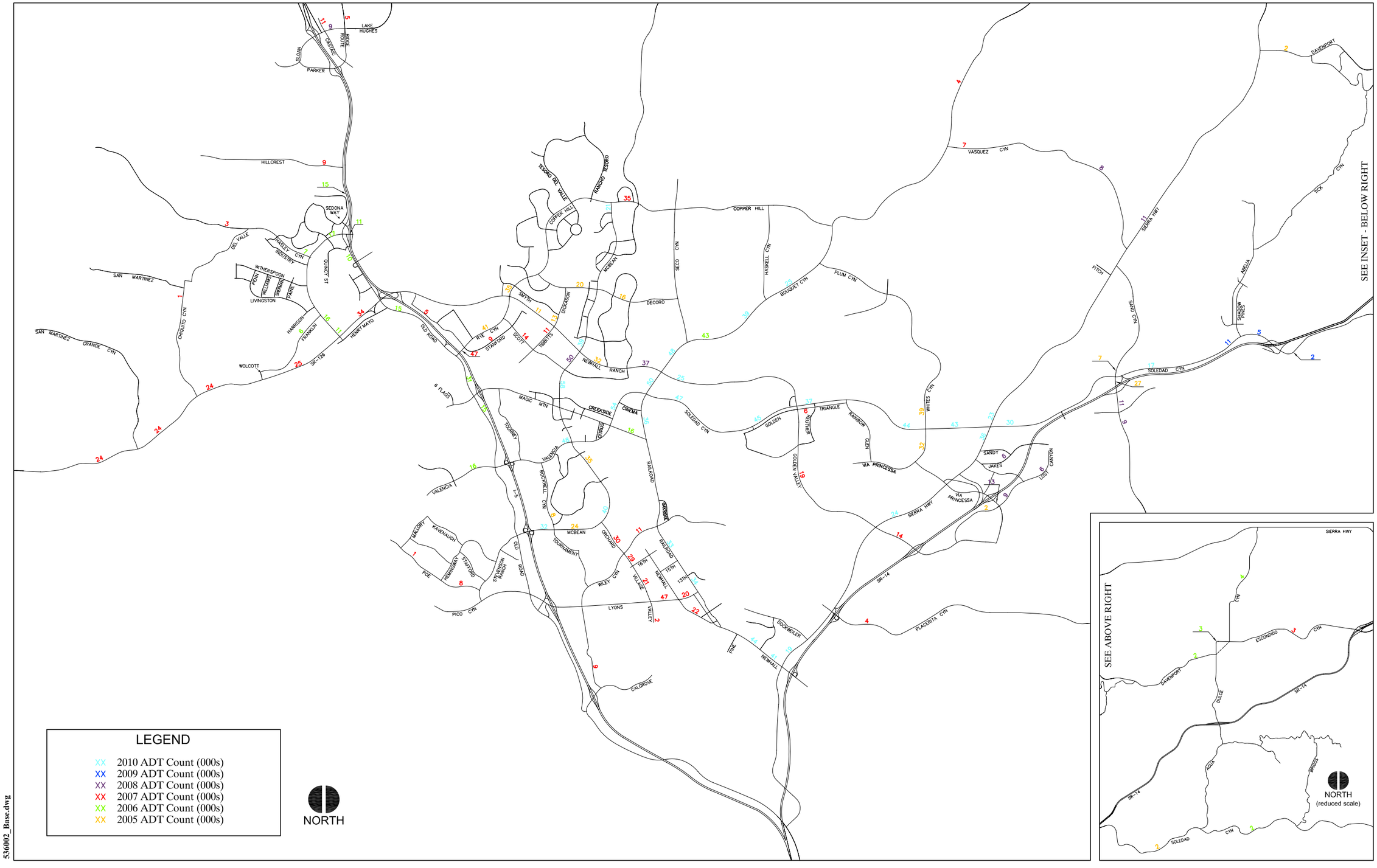

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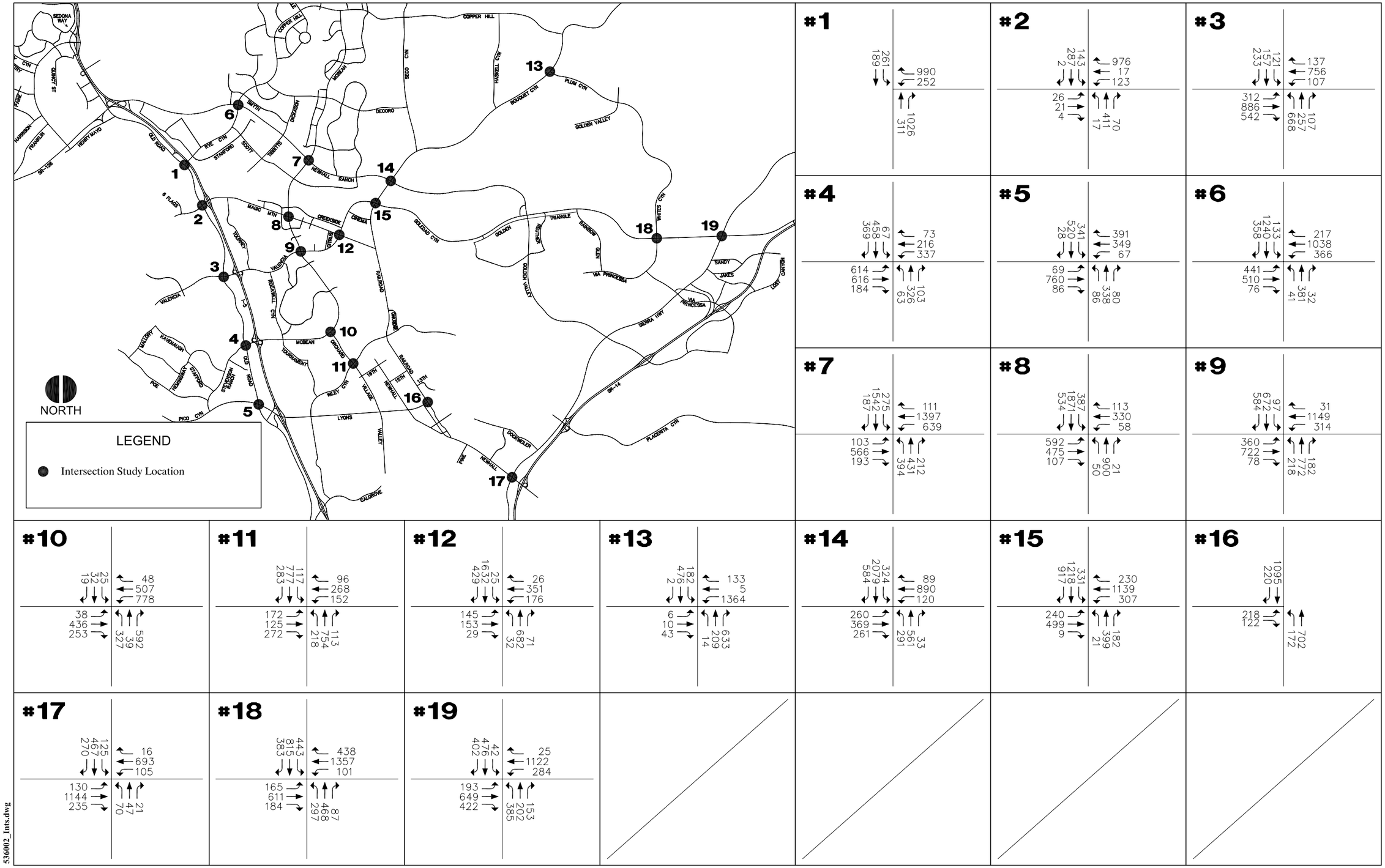
AUSTIN-FOUST ASSOCIATES, INC.

AVERAGE DAILY TRAFFIC COUNTS - EXISTING CONDITIONS (2005-2010)

Figure 2-4



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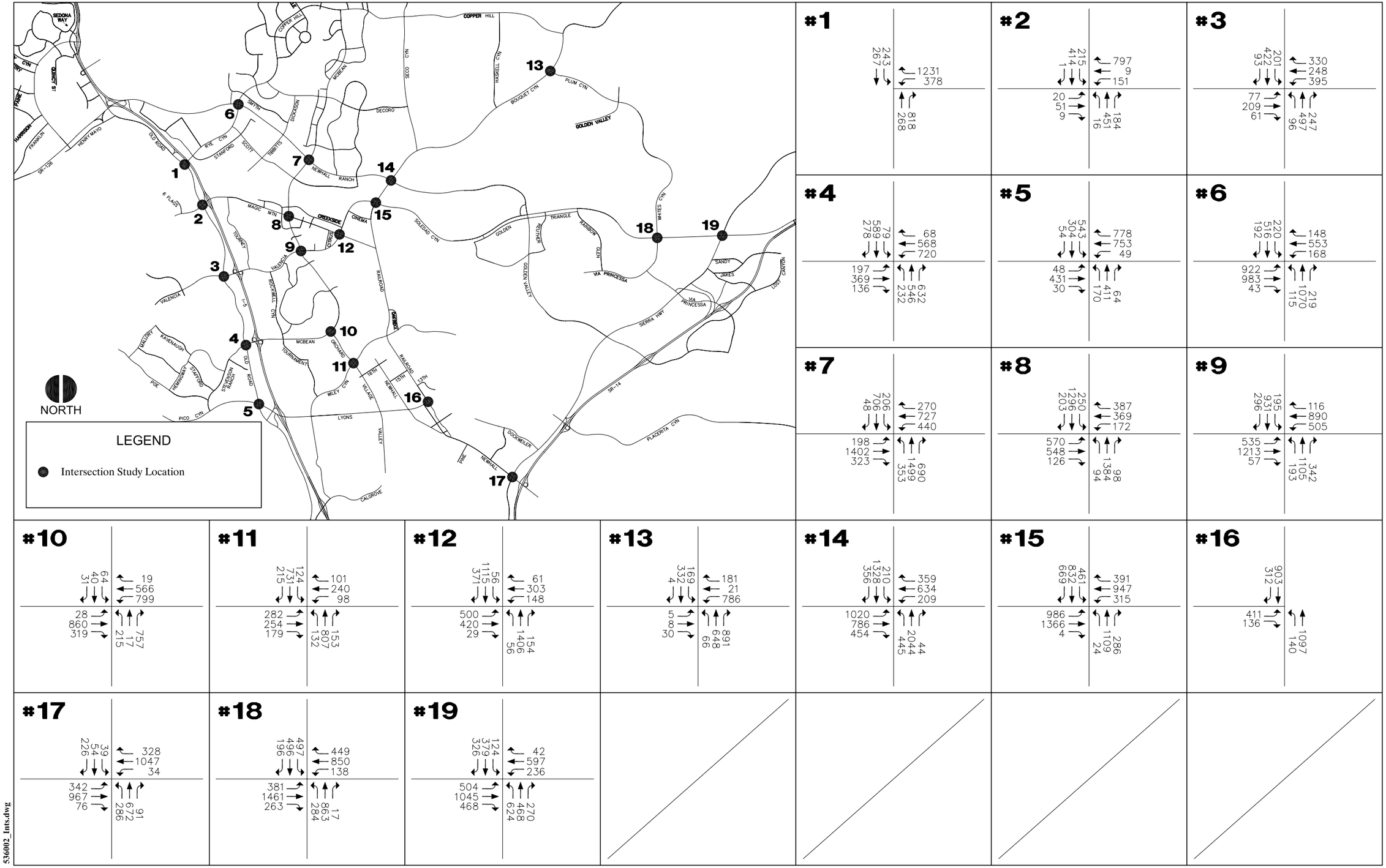

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Table 2-1 lists the existing ADT volumes and corresponding LOS and V/C values. As can be seen here, five roadway segments have V/C ratios greater than 1.00 and therefore do not meet the performance standard of LOS E or better

- Bouquet Cyn w/o Haskell (#15)
- Lyons Avenue between Orchard Village Road and Newhall Avenue (#92)
- McBean s/o Ave Scott (#114)
- Newhall Avenue between Lyons Avenue and Main Street (#131)
- Whites Canyon Road between Soledad Canyon Road and Pleasantdale Street (#288)

The results of the ICU LOS analyses for study area principal intersections are shown in Table 2-2 (detailed ICU worksheets are provided in Appendix A). The table shows that all intersections currently operate at LOS D or better.

2.2 FUTURE TRAFFIC GROWTH

Existing and future land use data formed the basis for preparing the future traffic volumes used in this traffic study. Future land uses tabulated by traffic analysis zone (TAZ) were provided by City and County staff and were derived by quantifying the data outlined in the proposed OVOV Land Use Element. Existing land use tabulated by TAZ was prepared as part of a comprehensive update and recalibration of the Santa Clarita Valley Consolidated Traffic Model (SCVCTM) undertaken in 2004 (see Reference 3 in Section 1.5). Data was provided for the entire OVOV area, which includes the City of Santa Clarita, its sphere of influence, and portions of unincorporated Los Angeles County. A comparison of 2004 to the proposed OVOV Buildout land use by TAZ is provided in Appendix B, and a comparison of the current City General Plan/County Area Plan Buildout land use to the proposed OVOV Buildout land use by TAZ is also provided in Appendix B.

The amount of traffic generated by a certain type of land use is estimated by applying a representative trip generation rate to the amount of land use in the area under consideration. The SCVCTM uses a predefined set of trip generation rates calibrated specifically to local conditions to calculate both peak hour and ADT trips by land use. A detailed listing of trip rates and the corresponding trip generation by TAZ is provided in Appendix D.

Table 2-1: ADT V/C and LOS – Existing Conditions (2005 – 2010)

Roadway Segment	Volume	Year	Lanes	Capacity	V/C	LOS
1. Agua Dulce n/o Escondido Cyn	4,000	2006	2	18,000	.22	A
2. Agua Dulce n/o Davenport	3,000	2006	2	18,000	.17	A
4. Agua Dulce s/o SR-14	<500	2005	2	18,000	.00	A
6. Ave Scott s/o Stanford	14,000	2007	4	36,000	.39	A
8. Ave Stanford s/o Vanderbilt	5,000	2007	4	36,000	.14	A
10. Ave Stanford s/o Rye Cyn	9,000	2007	4	36,000	.25	A
11. Bouquet Cyn n/o Vasquez	4,000	2007	2	18,000	.22	A
14. Bouquet Cyn e/o Haskell	25,000	2010	4	36,000	.69	B
15. Bouquet Cyn w/o Haskell	39,000	2010	4	36,000	1.08	**F**
16. Bouquet Cyn e/o Seco	43,000	2006	5	45,000	.96	E
17. Bouquet Cyn w/o Seco	48,000	2010	6	54,000	.89	D
18. Bouquet Cyn s/o Newhall Ranch	50,000	2010	8	72,000	.69	B
20. Bouquet Cyn n/o Magic Mtn	36,000	2010	4	36,000	1.00	E
25. Castaic n/o Lake Hughes	11,000	2007	4	36,000	.31	A
28. Chiquito Cyn s/o San Martinez Cyn	1,000	2007	2	18,000	.06	A
31. Commerce Center s/o Franklin	16,000	2006	6	54,000	.30	A
32. Commerce Center n/o SR-126	11,000	2006	6	54,000	.20	A
35. Copper Hill n/o Newhall Ranch	35,000	2005	8	72,000	.49	A
39. Copper Hill e/o McBean	35,000	2007	4	36,000	.97	E
43. Davenport e/o Sierra Hwy	2,000	2005	2	18,000	.11	A
44. Davenport w/o Agua Dulce	2,000	2006	2	18,000	.11	A
46. Decoro e/o Dickason	20,000	2005	4	36,000	.56	A
48. Decoro w/o Hillsborough	16,000	2005	4	36,000	.44	A
51. Dickason n/o Newhall Ranch	13,000	2005	4	36,000	.36	A
54. Escondido e/o Agua Dulce	3,000	2007	2	18,000	.17	A
55. Franklin e/o Wolcott Way	<500	2006	2	15,000	.00	A
56. Franklin w/o Commerce Center	6,000	2006	4	36,000	.17	A
62. Golden Valley s/o Centre Point	19,000	2007	4	36,000	.53	A
64. Golden Valley e/o Sierra Hwy	14,000	2007	6	54,000	.26	A

(Continued)

Table 2-1: ADT V/C and LOS – Existing Conditions (2005 – 2010) (Continued)

Roadway Segment	Volume	Year	Lanes	Capacity	V/C	LOS
68. Hasley Cyn w/o Del Valle	3,000	2007	2	18,000	.17	A
69. Hasley Cyn w/o Commerce Center	7,000	2006	4	36,000	.19	A
70. Hasley Cyn w/o The Old Road	17,000	2006	6	54,000	.31	A
71. Hasley Cyn w/o I-5	11,000	2006	4	36,000	.31	A
74. Hillcrest w/o The Old Road	9,000	2007	4	36,000	.25	A
75. Jakes Way e/o Canyon Park	6,000	2008	2	18,000	.33	A
77. Lake Hughes e/o Castaic	9,000	2008	4	36,000	.25	A
78. Lake Hughes e/o Ridge Route	2,000	2007	2	18,000	.11	A
85. Lost Cyn n/o Canyon Park	6,000	2008	4	36,000	.17	A
86. Lost Cyn n/o Via Princessa	9,000	2008	4	36,000	.25	A
87. Lost Cyn s/o Via Princessa	2,000	2005	2	18,000	.11	A
92. Lyons e/o Orchard Village	47,000	2007	4	36,000	1.31	**F**
93. Lyons w/o Main Street	20,000	2007	4	36,000	.56	A
105. Magic Mtn e/o Valencia	16,000	2006	4	36,000	.44	A
109. McBean s/o Copper Hill	21,000	2010	6	54,000	.39	A
112. McBean n/o Newhall Ranch	39,000	2010	6	54,000	.72	C
113. McBean s/o Newhall Ranch	50,000	2008	8	72,000	.69	B
114. McBean s/o Ave Scott	58,000	2010	6	54,000	1.07	**F**
117. McBean s/o Valencia	35,000	2005	6	54,000	.65	B
118. McBean n/o Orchard Village	40,000	2010	6	54,000	.74	C
119. McBean e/o Rockwell Cyn	24,000	2005	6	54,000	.44	A
120. McBean w/o Rockwell Cyn	32,000	2010	6	54,000	.59	A
124. Newhall Ranch e/o Rye Cyn	11,000	2005	8	72,000	.15	A
126. Newhall Ranch e/o McBean	32,000	2005	8	72,000	.44	A
127. Newhall Ranch w/o Bouquet Cyn	37,000	2008	8	72,000	.51	A
128. Newhall Ranch e/o Bouquet Cyn	25,000	2010	4	36,000	.69	B
131. Newhall s/o Lyons	22,000	2007	2	18,000	1.22	**F**
132. Newhall n/o Valle Oro	44,000	2010	6	54,000	.81	D
133. Newhall n/o Sierra Hwy	41,000	2010	6	54,000	.76	C

(Continued)

Table 2-1: ADT V/C and LOS – Existing Conditions (2005 – 2010) (Continued)

Roadway Segment	Volume	Year	Lanes	Capacity	V/C	LOS
136. Orchard Village s/o McBean	30,000	2007	4	36,000	.83	D
137. Orchard Village s/o Wiley Cyn	29,000	2007	4	36,000	.81	D
138. Orchard Village n/o Lyons	21,000	2007	4	36,000	.58	A
146. Placerita Cyn e/o SR-14	4,000	2007	2	18,000	.22	A
150. Poe s/o Mallory	1,000	2007	4	36,000	.03	A
151. Poe w/o Stevenson Ranch	8,000	2007	4	36,000	.22	A
155. Railroad s/o Oak Ridge	33,000	2010	4	36,000	.92	E
157. Railroad n/o Lyons	34,000	2010	4	36,000	.94	E
161. Ridge Route n/o Lake Hughes	5,000	2007	6	54,000	.09	A
166. Rockwell Cyn n/o McBean	8,000	2005	4	36,000	.22	A
168. Rye Cyn w/o Ave Scott	41,000	2005	6	54,000	.76	C
169. Rye Cyn e/o The Old Road	47,000	2007	6	54,000	.87	D
172. San Martinez Grande Cyn n/o SR-126	<500	2005	2	15,000	.00	A
174. Sand Cyn n/o Soledad Cyn	7,000	2005	2	18,000	.39	A
175. Sand Cyn s/o Soledad Cyn	27,000	2005	4	36,000	.75	C
176. Sand Cyn s/o SR-14	11,000	2008	2	18,000	.61	B
177. Sand Cyn s/o Lost Cyn	9,000	2008	2	18,000	.50	A
192. Sierra Hwy n/o Vasquez Cyn	11,000	2008	2	18,000	.61	B
195. Sierra Hwy n/o Soledad Cyn	23,000	2010	4	36,000	.64	B
196. Sierra Hwy s/o Soledad Cyn	36,000	2010	6	54,000	.67	B
198. Sierra Hwy s/o Via Princessa	24,000	2010	4	36,000	.67	B
201. Sierra Hwy n/o Newhall	19,000	2010	4	36,000	.53	A
211. Soledad Cyn e/o Bouquet Cyn	47,000	2010	6	54,000	.87	D
212. Soledad Cyn w/o Golden Valley	45,000	2010	6	54,000	.83	D
213. Soledad Cyn e/o Golden Valley	37,000	2010	6	54,000	.69	B
215. Soledad Cyn w/o Whites Cyn	44,000	2010	6	54,000	.81	D
216. Soledad Cyn e/o Whites Cyn	43,000	2010	6	54,000	.80	C
217. Soledad Cyn e/o Sierra Hwy	30,000	2010	6	54,000	.56	A
220. Soledad Cyn e/o SR-14 (at Sand Cyn)	17,000	2010	4	36,000	.47	A

(Continued)

Table 2-1: ADT V/C and LOS – Existing Conditions (2005 – 2010) (Continued)

Roadway Segment	Volume	Year	Lanes	Capacity	V/C	LOS
221. Soledad Cyn w/o Shadow Pines	11,000	2009	4	36,000	.31	A
222. Soledad Cyn e/o Shadow Pines	5,000	2009	4	36,000	.14	A
223. Soledad Cyn e/o SR-14	2,000	2009	2	18,000	.11	A
224. Soledad Cyn w/o Agua Dulce	2,000	2005	2	18,000	.11	A
225. Soledad Cyn e/o Agua Dulce	2,000	2006	2	18,000	.11	A
227. SR-126 w/o San Martinez Grande Cyn	24,000	2007	4	44,000	.55	A
228. SR-126 w/o Chiquito Cyn/Long Cyn	24,000	2007	4	44,000	.55	A
229. SR-126 w/o Wolcott	24,000	2007	4	44,000	.55	A
230. SR-126 w/o Commerce Center	25,000	2007	4	44,000	.57	A
231. SR-126 w/o I-5	34,000	2007	6	66,000	.52	A
239. The Old Road n/o Sedona Way	15,000	2006	2	18,000	.83	D
242. The Old Road n/o Biscailuiz	10,000	2006	2	18,000	.56	A
245. The Old Road s/o Henry Mayo	15,000	2006	4	36,000	.42	A
247. The Old Road n/o Magic Mtn	31,000	2006	4	36,000	.86	D
248. The Old Road s/o Magic Mtn	15,000	2006	4	36,000	.42	A
254. Tibbitts s/o Newhall Ranch	11,000	2007	6	54,000	.20	A
262. Valencia w/o The Old Road	16,000	2006	6	54,000	.30	A
266. Valencia w/o McBean	48,000	2010	7	63,000	.76	C
271. Valencia s/o Cinema	54,000	2010	6	54,000	1.00	E
273. Valley s/o Lyons	2,000	2007	4	36,000	.06	A
274. Vasquez Cyn e/o Bouquet Cyn	7,000	2007	2	18,000	.39	A
275. Vasquez Cyn w/o Sierra Hwy	8,000	2008	2	18,000	.44	A
283. Via Princessa n/o Lost Cyn	13,000	2008	5	45,000	.29	A
288. Whites Cyn n/o Soledad	39,000	2005	4	36,000	1.08	**F**
289. Whites Cyn s/o Soledad	32,000	2005	6	54,000	.59	A
290. Wiley Cyn e/o Orchard Village	11,000	2007	4	36,000	.31	A
294. Wiley Cyn n/o Calgrove	9,000	2007	2	18,000	.50	A

LOS in **Bold** exceeds performance criteria of LOS E.

Level of service ranges: .00 - .60 A .61 - .70 B .71 - .80 C
.81 - .90 D .91 – 1.00 E Above 1.00 F

Table 2-2: ICU and LOS Summary - Existing Conditions (2007 – 2010)

	AM Peak Hour		PM Peak Hour		Count
Intersection	**ICU**	**LOS**	**ICU**	**LOS**	**Year**
1. The Old Road & Rye Canyon	.61	B	.66	B	2009
2. The Old Road & Magic Mountain	.28	A	.32	A	2009
3. The Old Road & Valencia	.67	B	.44	A	2009
4. The Old Road & Stevenson Ranch	.58	A	.76	C	2009
5. The Old Road & Pico Canyon	.76	C	.71	C	2009
6. Rye/Copper Hill & Newhall Ranch	.63	B	.70	B	2010
7. McBean & Newhall Ranch	.73	C	.78	C	2010
8. McBean & Magic Mountain	.61	B	.76	C	2010
9. McBean & Valencia	.61	B	.74	C	2010
10. Orchard Village & McBean	.57	A	.68	B	2010
11. Orchard Village & Wiley Canyon	.60	A	.62	B	2010
12. Valencia & Magic Mountain	.58	A	.66	B	2010
13. Bouquet Canyon & Plum Canyon	.68	B	.73	C	2007
14. Bouquet Canyon & Newhall Ranch	.66	B	.82	D	2010
15. Bouquet Canyon & Soledad Canyon	.68	B	.77	C	2010
16. Railroad & Lyons	.57	A	.56	A	2009
17. Sierra Highway & Newhall	.57	A	.64	B	2008
18. Whites Canyon & Soledad Canyon	.80	C	.86	D	2008
19. Sierra Highway & Soledad Canyon	.67	B	.76	C	2008

Level of service ranges:						
	.00 - .60	A	.61 - .70	B	.71 - .80	C
	.81 - .90	D	.91 – 1.00	E	Above 1.00	F

Table 2-3 lists existing (2004) and future (OVOV Buildout) land use for the Valley based on six generalized land use categories. As can be seen here, buildout of the planned OVOV land uses implies a growth in valley-wide tripends of around 121 percent. Figure 2-7 and Figure 2-8 graphically illustrate both existing (2004) and future (OVOV Buildout) ADT volumes listed in Table 2-3. Figure 2-9 graphically illustrates the increase in valley-wide tripends. As a basis of comparison, the current City General Plan/County Area Plan land use is also compared to the OVOV Buildout land use, and is reflected in Table 2-4. Important to note is that each tripend represents one end of a trip (or in other words, every trip has two tripends), and that the tripends tabulated in the previously referenced Table 2-3 and Table 2-4 are one of multiple factors that determine the actual volume of vehicles on the roadway system. Other factors, such as the relative proximity of complementary land use types, determine trip lengths. Vehicle trips in combination with trip lengths determine the number of vehicle miles traveled (VMT) on a daily basis.

Table 2-3: Valley-wide Land Use and Trip Generation – Existing (2004) vs. OVOV Buildout

		Existing (2004)		OVOV Buildout		
Land Use Category	**Units**	**Amount**	**Tripends**	**Amount**	**Tripends**	**% Increase**
SF Residential	DU	48,251	471,153	81,395	795,563	69%
MF Residential	DU	24,387	191,023	67,679	514,809	170%
Subtotal	*DU*	*72,638*	*662,176*	*149,074*	*1,310,372*	*98%*
Commercial Retail	TSF	9,157.63	515,716	23,585.06	1,230,042	139%
Commercial Office	TSF	2,072.12	25,996	17,311.53	205,851	692%
Industrial Park	TSF	18,332.42	107,565	40,735.96	240,697	124%
Subtotal	*TSF*	*29,562.17*	*649,277*	*81,632.55*	*1,676,590*	*158%*
Other (Schools, etc.)	--	--	176,541	--	301,424	71%
TOTAL		--	1,487,994	--	3,288,386	121%[1]

Where:
SF = Single Family
MF = Multi-Family
DU = dwelling units
TSF = thousand square feet of floor area
Tripends = Daily Tripends (one trip = 2 tripends)

[1]Represents an annual increase of approximately 2.6% (compounded) if buildout is presumed to occur over a 30 year period.

Figure 2-7: Existing (2004) Average Daily Traffic (ADT) Percentages

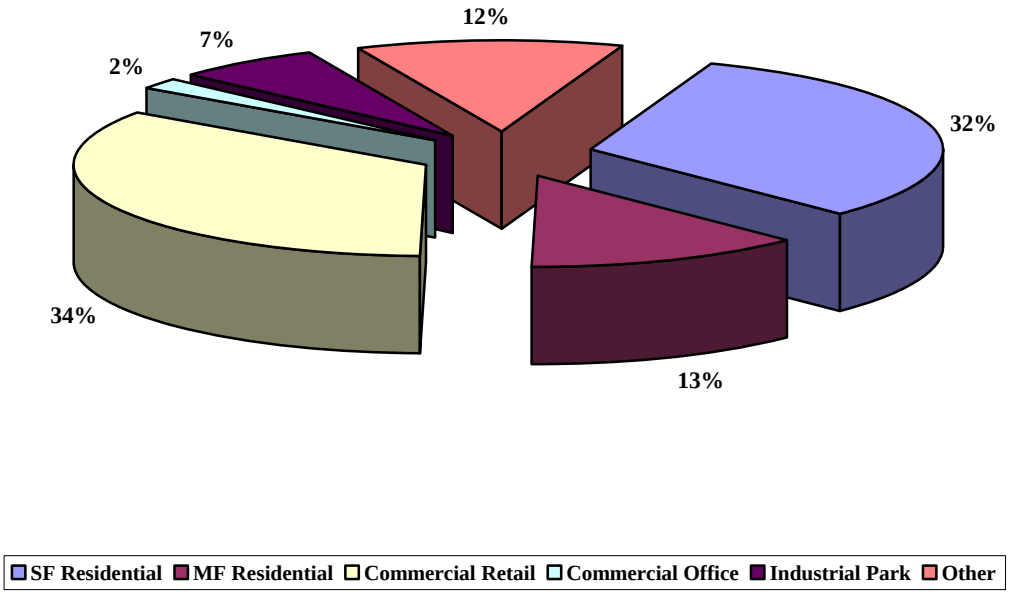


Figure 2-8: OVOV Buildout Average Daily Traffic (ADT) Percentages

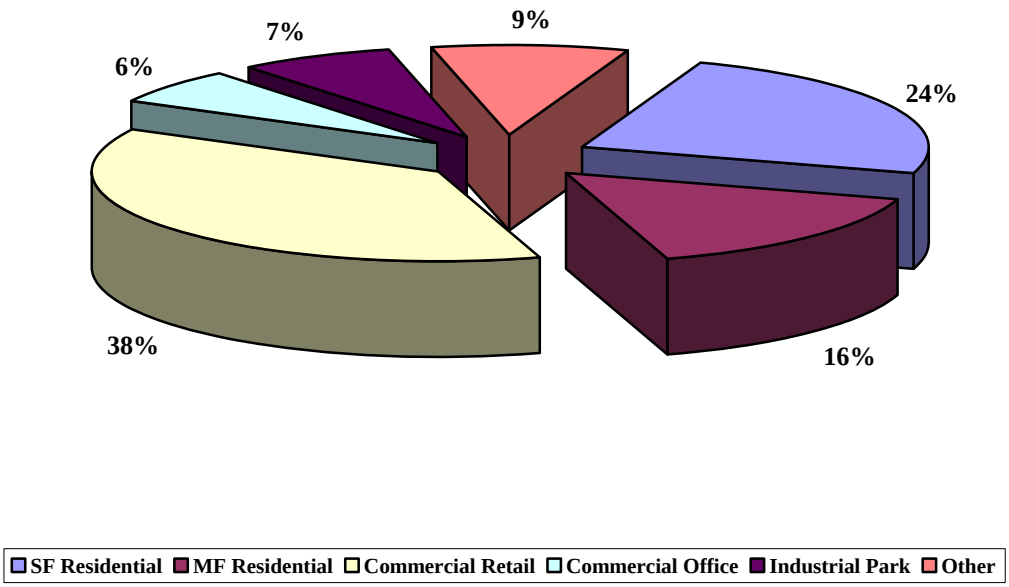


Figure 2-9: Total Average Daily Traffic (ADT) Volume Comparison

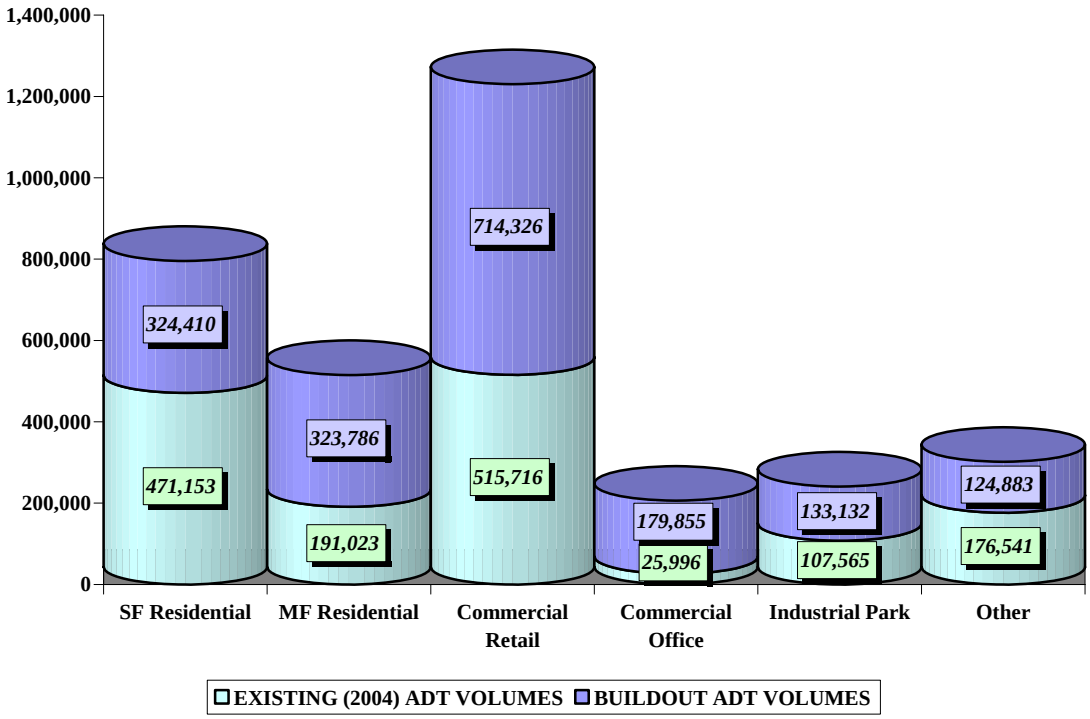


Table 2-4: Valley-wide Land Use and Trip Generation – Current Plan Buildout vs. OVOV Buildout

		Current Plan Buildout		Proposed OVOV Buildout		
Land Use Category	**Units**	**Amount**	**Tripends**	**Amount**	**Tripends**	**% Increase**
SF Residential	DU	89,373	877,112	81,395	795,563	-9%
MF Residential	DU	62,543	481,988	67,679	514,809	7%
Subtotal	*DU*	*151,916*	*1,359,100*	*149,074*	*1,310,372*	*-4%*
Commercial Retail	TSF	21,561.65	1,134,793	23,585.06	1,230,042	8%
Commercial Office	TSF	14,746.77	169,850	17,311.53	205,851	21%
Industrial Park	TSF	43,144.21	254,465	40,735.96	240,697	-5%
Subtotal	*TSF*	*79,452.63*	*1,559,108*	*81,632.55*	*1,676,590*	*8%*
Other (Schools, etc.)	--	--	288,885	--	301,424	4%
TOTAL		--	3,207,093	--	3,288,386	3%

Where:
SF = Single Family
MF = Multi-Family
DU = dwelling units
TSF = thousand square feet of floor area
Tripends = Daily Tripends (one trip = 2 tripends)

The proposed City of Santa Clarita Land Use Element describes how an emphasis has been placed on allowing mixed uses in order to allow residents to reach services in ways that are not exclusively automobile-dependent, such as by walking, biking and transit. Grouping mixed uses together also reduces the need for residents to take multiple vehicle trips to obtain services and reach employment centers, resulting in a net reduction in the number of vehicles on the roadway. The proposed OVOV land uses also represent a reduction in residential dwelling units of approximately 4 percent and an increase in office square footage of approximately 21 percent in comparison to the current City General Plan/County Area Plan. This change results in an improved jobs to housing balance for the Valley, which reduces the need for residents to commute outside of the Valley for employment.

The traffic forecasting process utilized by the SCVCTM derives vehicle trips based on trip distribution functions that take into account the geographical placement of land uses in relation to each other. As noted above, VMT is a function of both the number of trips and trip lengths and Table 2-5 provides a comparison between the current City General Plan/County Area Plan and the proposed OVOV land uses for these factors, as well as a comparison between existing conditions and the proposed OVOV plan.

Table 2-5: Trip Length and VMT Comparison

Scenario	Total Vehicle Trips (ADT)	Total VMT (veh-miles)	Average Trip Length (miles)
Existing (2004)	941,000	13,428,000	14.3
Proposed OVOV Land Uses with Existing Roadways	1,860,000	22,601,000	12.2
Difference	919,000	9,173,000	-2.1
	+98%[1]	+68%	-15%
Existing (2004)	941,000	13,428,000	14.3
Proposed OVOV Land Uses at Buildout[2]	1,860,000	21,532,000	11.6
Difference	919,000	8,104,000	-2.7
	+98%[1]	+60%	-19%
Current General Plan/Area Plan at Buildout	1,874,000	25,373,000	13.5
Proposed OVOV Land Uses at Buildout[2]	1,860,000	21,532,000	11.6
Difference	-14,000	-3,841,000	-1.9
	-1%	-15%	-14%

[1]Represents an annual increase of approximately 2.3% (compounded) if buildout is presumed to occur over a 30 year period.
[2]Includes buildout of the proposed Highway Plan.

Where:
ADT = Average Daily Trips
VMT = Vehicle Miles Traveled (daily)
Source: Santa Clarita Valley Consolidated Traffic Model (SCVCTM)

The above table shows that with the proposed OVOV land uses, the total number of vehicle trips is approximately 1 percent less than with the current City General Plan/County Area Plan and that the average trip length is reduced by approximately 1.9 miles. Total VMT is reduced by approximately 15 percent. These reductions are primarily due to factors inherent to the land use plan such as density, mixed use, and an improved jobs to housing ratio that reduces the number of commuter trips outside of the Valley.

In comparison to existing conditions, the proposed OVOV land uses result in approximately 98 percent more daily vehicle trips, but with just a 68 percent increase in daily VMT. Average trip length is reduced by 15 percent with the proposed land uses. With the implementation of the Highway Plan along with the proposed land uses, the VMT increase is approximately 60 percent over existing conditions, and average trip lengths are reduced by 19 percent in comparison to existing conditions.

The impact analysis provided in Chapter 4.0 compares roadway traffic volumes and LOS resulting from the proposed OVOV plan to forecasts based on the current City General Plan/County Area Plan, as well as to existing conditions.

3.0 ARTERIAL ROADWAYS

This chapter discusses the arterial roadway component of the City and County Circulation Elements. Referred to as the "Arterial Highway Plan" or simply the "Highway Plan," it provides recommendations for the Santa Clarita Valley's arterial roadway system.

3.1 ROADWAY CLASSIFICATIONS

The Highway Plan is defined using a hierarchy of arterial roadway classifications. Each is described by size and function, and has specific physical dimensions. The proposed Highway Plan maintains the general structure of the existing City and County Circulation Elements by utilizing the established roadway classifications of the current Highway Plan.

The functional classifications range from multi-lane expressways to two-lane undivided roadways.

3.1.1 Major Arterial Highway

This classification applies to six- to eight-lane roadways with raised landscaped medians (Urban) or painted medians (Rural). Their function is to carry high volumes of local and regional traffic. Unsignalized minor street and driveway access may be allowed but signalized access is preferred, and left-turn restrictions should be placed at unsignalized access locations. Curbside parking is prohibited. Bike lanes or bike trails can be employed in addition to sidewalk space. Traffic carrying capacities of around 54,000± vehicles per day for a six-lane roadway and 72,000± vehicles per day for an eight-lane roadway can be achieved depending on the degree of access control, peak period traffic loadings, and lane configurations at the major intersections.

3.1.2 Secondary Arterial Highway

This classification applies to four-lane roadways with raised landscaped medians (Sub-urban) or painted medians (Urban and Rural). In some areas of Urban Secondary, the painted median may allow for two-way left turns. Left turn restrictions will generally be placed at minor unsignalized driveways (i.e., median breaks will typically only be provided at intersections). As a primary traffic carrier, curbside

parking is prohibited. Bike lanes or bike trails can be employed in addition to sidewalk space. Traffic carrying capacities of 36,000± vehicles per day can be achieved depending on the degree of access control and peak period traffic loadings.

3.1.3 Limited Secondary Arterial Highway

This classification applies to two- to four-lane roadways generally without medians or bike lanes. This classification is generally less restrictive with respect to access to adjacent property. These routes are typically located in remote foothill, mountain and canyon areas. Their primary function is to provide access to low-density areas. Traffic carrying capacities of 18,000± vehicles per day for a two-lane roadway and 36,000± vehicles per day for a four-lane roadway can be achieved depending on the degree of access control and peak period traffic loadings.

3.1.4 Parkway

This classification applies to urban and non-urban routes having park-like features either within or adjacent to the roadway. The width of right-of-way varies as necessary to incorporate these features, but shall not be less than 80 feet. Traffic carrying capacities vary depending on the specific roadway improvements that are provided. Roadway improvements will vary based on the composition and volume of traffic to be carried.

3.1.5 Collector Streets

This classification applies to two-lane roadways in residential, commercial and industrial areas that serve some through traffic as well as the adjacent properties. Collectors connect local streets with arterial highways and balance mobility and access. Typically no median is provided and on street parking is allowed. While not as wide as an arterial highway, Collectors are typically wider than local streets in terms of right-of-way and lane widths. Traffic carrying capacities of 15,000± vehicles per day can be achieved depending on the degree of access control and peak period traffic loadings.

3.1.6 Local Streets

This classification applies to two-lane roadways in residential areas that serve the adjacent properties. Local streets are intended to provide access to adjacent land uses exclusively, and are not

designed or intended to carry through-traffic or allow for high speeds. Traffic carrying capacities of 10,000 vehicles per day or more are physically possible, but a maximum capacity of approximately 2,000± vehicles per day is targeted in order to provide an environment consistent with the adjoining residential uses.

3.1.7 Expressway

This classification applies to multi-lane State Highways under the jurisdiction of the California Department of Transportation (Caltrans). Expressways have restrictive access control consisting of grade-separated interchanges or signalized at-grade intersections with a minimum spacing of one mile. Traffic carrying capacities of around 44,000± vehicles per day for a four-lane expressway up to around 88,000± vehicles per day for an eight-lane expressway can be achieved depending on the degree of access control, peak period traffic loadings, and lane configurations at the major intersections.

The above roadway classifications are listed in Table 3-1 and conceptual cross-sections are illustrated in Figure 3-1.

3.2 ROADWAY DIMENSIONS

The preceding discussion on roadway classifications included general ranges for right-of-way (ROW) and pavement width. While the maximum value represents a desirable standard, variations in right-of-way width and specific roadway improvements will occur in certain cases due to physical constraints and/or right-of-way limitations. Hence, the roadway classifications may deviate from the standards where physical constraints exist, where preservation of community character dictates special treatment. Bikeways and sidewalks also affect the specific standards applied to various roadways. However, the overriding circulation goal is that all roadways carry the designated design volume of traffic at the desired performance standard.

3.3 PROPOSED ROADWAY PLAN

A recommended arterial roadway component of the City and County Circulation Elements (the Highway Plan) has been developed based on the traffic analysis presented in Chapter 4.0. The preparation of the traffic analysis consisted of evaluating the proposed OVOV buildout land uses in

Table 3-1: Roadway Classifications

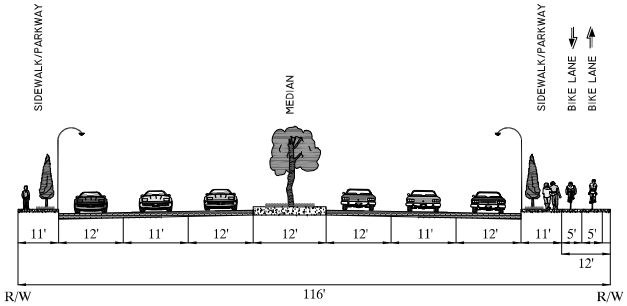
Highway Plan Classification	Functional Classification	Definition	Typical ROW Width (Curb-Curb Width)	Typical Configuration	Design Maximum Two-Way Daily Traffic Volume
MAJOR HIGHWAY	6 to 8 Lane Roadway	Arterials with at least 6 travel lanes for high mobility, designed with limited vehicular access to driveways and cross streets. The typical road section includes a raised landscaped median with left turn pockets at intersections. Street sections may include striped, on-street bikeways or separated bike paths.	108'-138' (84'-118')	6 – 8 lanes 12' Raised Median, or 12' Painted Median Bike Lanes or Trails No Parking Signalized side street access	54,000 (6L) 72,000 (8L)
SECONDARY HIGHWAY	4 Lane Roadway	Arterials with an ultimate design section of 4 travel lanes, designed for high mobility and with limited vehicular access from driveways and cross streets. The typical road section includes a median with left turn pockets provided at intersections. Secondary highways are designed to service both through traffic, and to collect traffic from collector and local streets.	86'-92' (58'-72')	4 Lanes 12' Raised Median, or 12' Painted Median Bike Lanes or Trails No Parking Signalized side street access	36,000
LIMITED SECONDARY HIGHWAY	2 to 4 Lane Roadway	Arterials with an ultimate roadway design section of 2 to 4 travel lanes and less restrictive access control. The typical road section does not include a median. These streets are designed to accommodate moderate volumes of traffic and are typically located in remote foothill, mountainous and canyon areas.	64' – 84' (28' – 64')	2 – 4 Lanes No Median No Bike Lanes No Parking	18,000 (2L) 36,000 (4L)
PARKWAY	2 or more Lane Roadway	Arterials having park-like features either within or adjacent to the roadway. Specific features vary depending on the composition and volume of traffic to be carried.	80' or more (varies)	2 or more Lanes	varies

(Continued)

Table 3-1: Roadway Classifications (Continued)

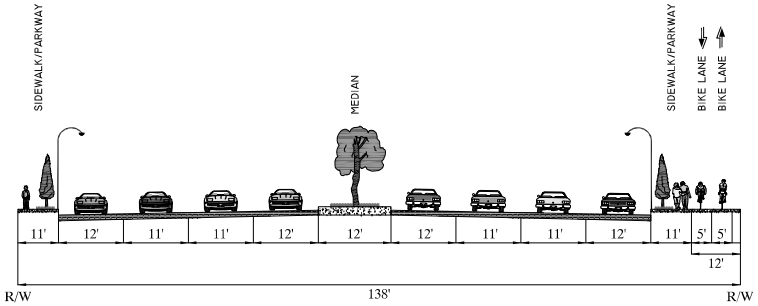
Highway Plan Classification	Functional Classification	Definition	Typical ROW Width (Curb-Curb Width)	Typical Configuration	Design Maximum Two-Way Daily Traffic Volume
COLLECTOR STREET	2 Lane Roadway	Streets which have an ultimate roadway design section of 2 travel lanes with limited vehicular access to the roadway from driveways and cross streets. The roadway is usually undivided and does not always accommodate left turn pockets at intersections. Collector streets are designed to provide both access and limited mobility, servicing local traffic from residential, commercial, and industrial uses and providing access to the arterial roadway system. Collector streets are not depicted on the adopted Highway Plan.	64' (40')	2 Lanes No Median No Bike Lanes Parking typically allowed.	15,000
LOCAL STREET	2 Lane Roadway	Streets which have an ultimate roadway design section of 2 travel lanes designed for full access and limited mobility. Local streets are not included on the adopted Highway Plan.	58'-60' (34'-36')	2 Lanes No Median No Bike Lanes Parking typically allowed.	2,500
EXPRESSWAY	4 to 8 Lane Roadway	Highways which have an ultimate roadway design section of 4 or more lanes that are part of the State Highway system. Expressways have restrictive access control consisting of grade-separated interchanges or at-grade signalized intersections with a minimum spacing of 1 mile.	200' (varies)	4 or More Lanes Median No Bike Lanes No Parking Grade Separation, or Signalized side-street access	44,000 (4L) 88,000 (8L)

MAJOR ARTERIAL HIGHWAY
(WITH BIKE TRAIL DETAIL)



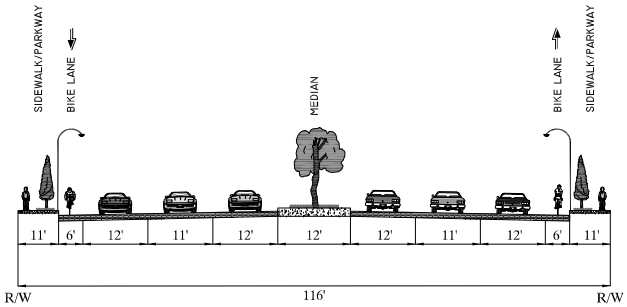
THREE LANES IN EACH DIRECTION WITH RAISED LANDSCAPE MEDIAN, NO ON-STREET PARKING

MAJOR ARTERIAL HIGHWAY
(EIGHT LANE ALTERNATIVE WITH BIKE TRAIL DETAIL)



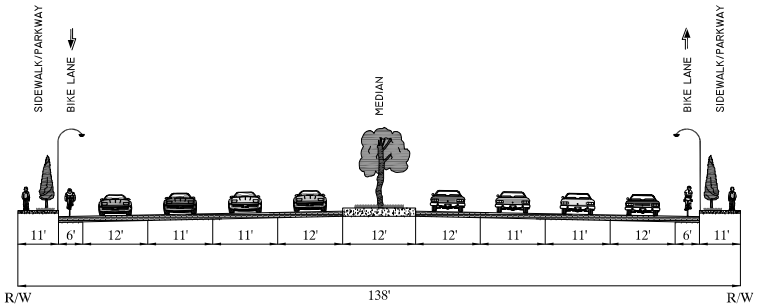
FOUR LANES IN EACH DIRECTION WITH RAISED LANDSCAPE MEDIAN, NO ON-STREET PARKING

MAJOR ARTERIAL HIGHWAY
(WITH BIKE LANE DETAIL)



THREE LANES IN EACH DIRECTION WITH RAISED LANDSCAPE MEDIAN, NO ON-STREET PARKING

MAJOR ARTERIAL HIGHWAY
(EIGHT LANE ALTERNATIVE WITH BIKE LANE DETAIL)



FOUR LANES IN EACH DIRECTION WITH RAISED LANDSCAPE MEDIAN, NO ON-STREET PARKING

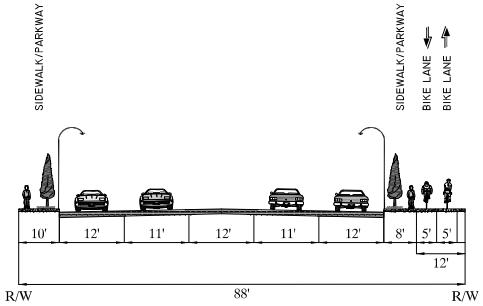
536002_Cross_Sections.dwg

AUSTIN-FOUST ASSOCIATES, INC.

TYPICAL ROADWAY CROSS-SECTIONS - MAJOR AND SECONDARY ARTERIAL HIGHWAYS

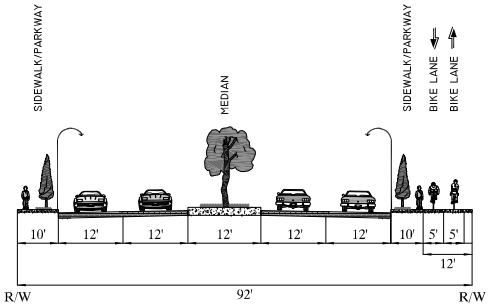
Figure 3-1

URBAN SECONDARY ARTERIAL HIGHWAY
(WITH BIKE TRAIL DETAIL)



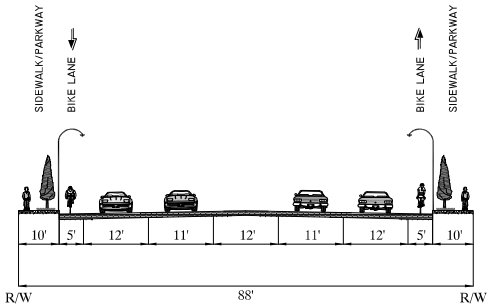
TWO LANES IN EACH DIRECTION WITH TWO WAY
LEFT TURN LANE, NO ON-STREET PARKING

SUB-URBAN SECONDARY ARTERIAL HIGHWAY
(WITH BIKE TRAIL DETAIL)



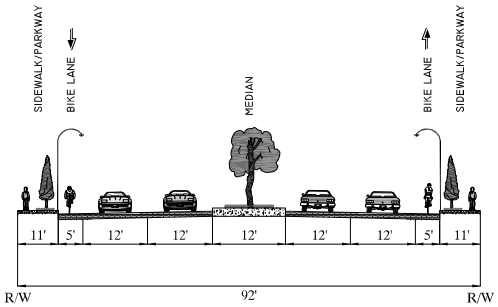
TWO LANES IN EACH DIRECTION WITH RAISED
LANDSCAPE MEDIAN, NO ON-STREET PARKING

URBAN SECONDARY ARTERIAL HIGHWAY
(WITH BIKE LANE DETAIL)



TWO LANES IN EACH DIRECTION WITH TWO WAY
LEFT TURN LANE, NO ON-STREET PARKING

SUB-URBAN SECONDARY ARTERIAL HIGHWAY
(WITH BIKE LANE DETAIL)



TWO LANES IN EACH DIRECTION WITH RAISED
LANDSCAPE MEDIAN, NO ON-STREET PARKING

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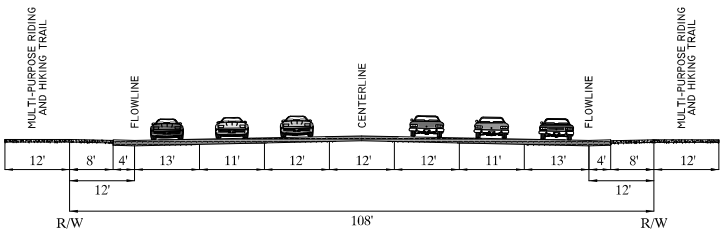
TYPICAL ROADWAY CROSS-SECTIONS - MAJOR AND SECONDARY ARTERIAL HIGHWAYS

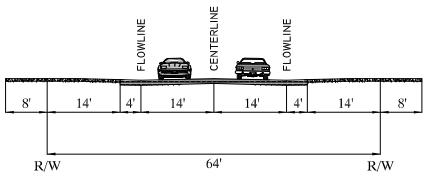
Figure 3-1 (Cont.)

RURAL MAJOR HIGHWAY



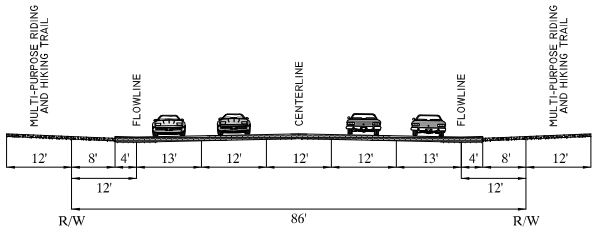
THREE LANES IN EACH DIRECTION WITH TWO WAY LEFT TURN LANE, NO ON-STREET PARKING

LIMITED SECONDARY ARTERIAL HIGHWAY



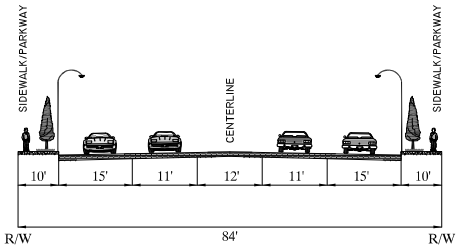
ONE LANE IN EACH DIRECTION WITH NO ON-STREET PARKING

RURAL SECONDARY HIGHWAY



TWO LANES IN EACH DIRECTION WITH TWO WAY LEFT TURN LANE, NO ON-STREET PARKING

LIMITED SECONDARY ARTERIAL HIGHWAY



TWO LANES IN EACH DIRECTION WITH NO ON-STREET PARKING

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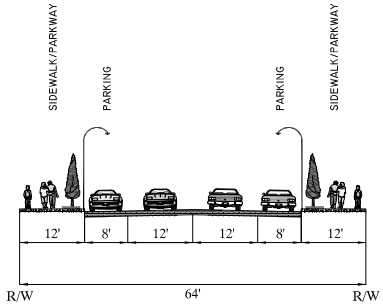
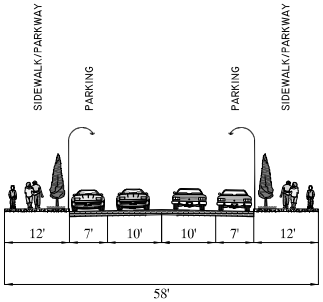
RESIDENTIAL COLLECTOR



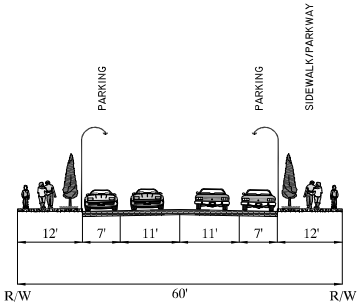
ONE LANE IN EACH DIRECTION WITH ON-STREET PARKING

RESIDENTIAL CUL-DE-SAC



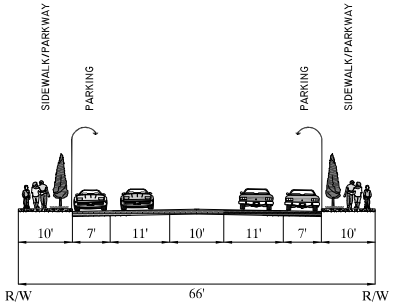
ONE LANE IN EACH DIRECTION WITH ON-STREET PARKING

RESIDENTIAL THROUGH STREET



ONE LANE IN EACH DIRECTION WITH ON-STREET PARKING

INDUSTRIAL/COMMERCIAL CUL-DE-SAC



ONE LANE IN EACH DIRECTION WITH TWO WAY LEFT TURN LANE, WITH ON-STREET PARKING

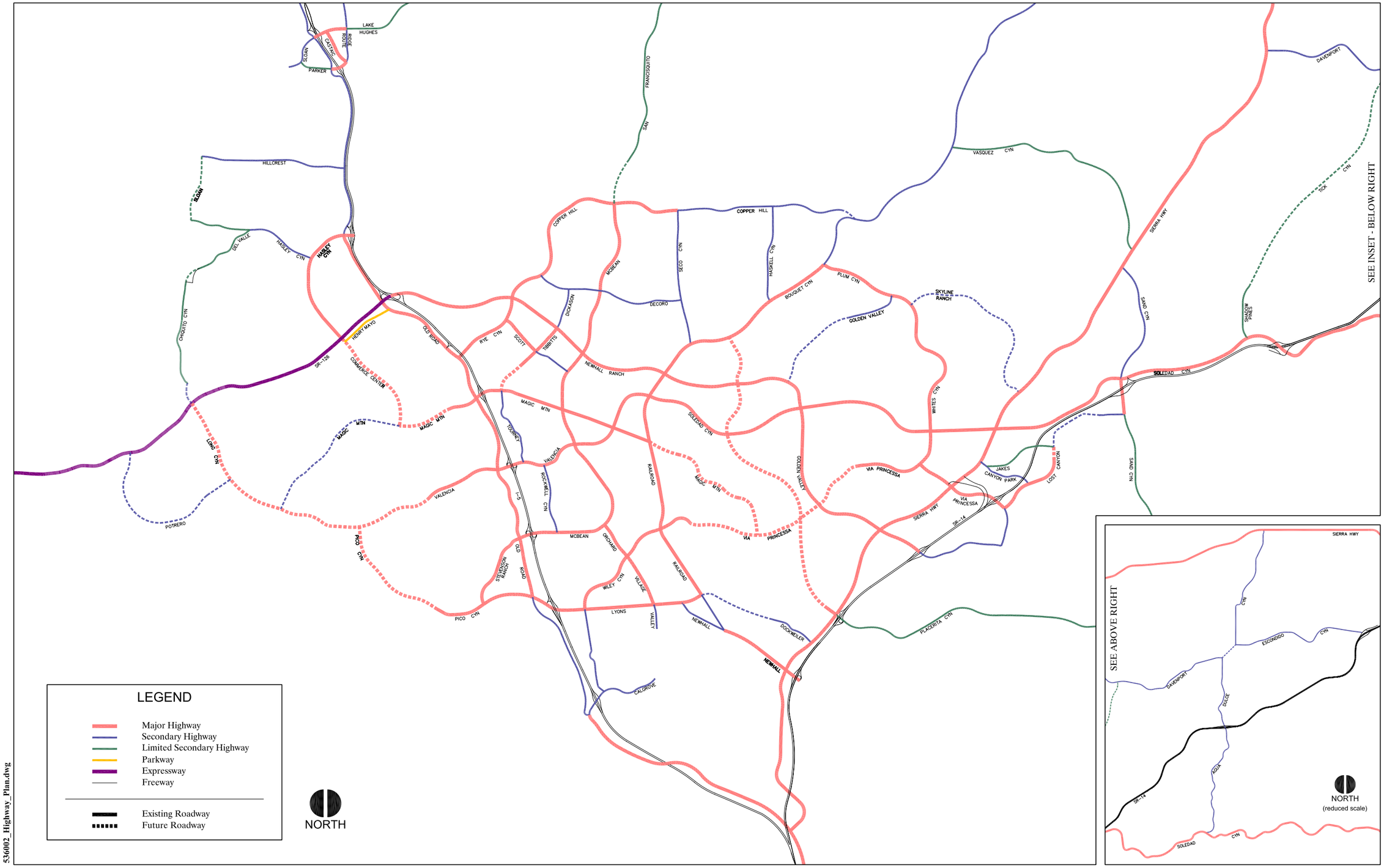
536002_Cross_Sections.dwg

conjunction with various alternatives of roadway configurations. From this analysis, a recommended Highway Plan evolved.

Figure 3-2 shows the proposed Highway Plan. Illustrated here by color and by line width are the recommended Highway Plan classifications as discussed earlier in this chapter. In the next chapter, future traffic volumes are estimated based on this Highway Plan to show its ability to serve the future traffic demands created by buildout of the OVOV land uses.

The recommended Highway Plan includes multiple changes from the current Highway Plans. Designations of the following roadway segments were recommended to be changed as a result of the traffic analysis:

1. **Lake Hughes Road from Ridge Route Road to Angeles National Forest Boundary** – Reclassify from a major highway to a limited secondary highway.
2. **Vasquez Canyon Road from Bouquet Canyon Road to Sierra Highway** – Reclassify from a secondary highway to a limited secondary highway.
3. **Sand Canyon Road from the Santa Clarita City boundary to Sierra Highway** – Reclassify from a major highway to a secondary highway along existing alignment.
4. **Shadow Pines Boulevard/Tick Canyon Road from Soledad Canyon Road to Davenport Road** – Reclassify from a secondary highway to a limited secondary highway.
5. **Bouquet Canyon Road from Plum Canyon Road to Vasquez Canyon Road** – Reclassify from a major highway to a secondary highway (realign planned secondary highway along the existing driven roadway).
6. **Skyline Ranch Road from Plum Canyon Road to Sierra Highway** – Reclassify planned major highway to a secondary highway (with an alternative section as approved for the development project through which this roadway passes).
7. **Valencia Boulevard/Potrero Canyon Road from the Newhall Ranch/Stevenson Ranch boundary to the planned Long Canyon Road** – Reclassify planned secondary highway to a major highway.
8. **Long Canyon Road from the planned Santa Clara River Bridge to the planned Valencia Boulevard/Potrero Canyon Road** – Reclassify planned secondary highway to a major highway.
9. **Pico Canyon Road from the Newhall Ranch/Stevenson Ranch boundary to Valencia Boulevard** – Reclassify planned secondary highway to a major highway.



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10. **Jakes Way from Canyon Park Boulevard to the planned Lost Canyon Road extension** – add classification for the existing roadway as a limited secondary highway.
11. **McBean Parkway from Copper Hill Drive to San Fransisquito Canyon Road** – Reclassify planned secondary highway to a limited secondary highway.
12. **San Fransisquito Canyon Road from the planned extension of McBean Parkway to the Angeles National Forest** – Reclassify from a secondary highway to a limited secondary highway.
13. **Lost Canyon Road from Jakes Way to Sand Canyon Road** – Reclassify planned major highway to a secondary highway.
14. **Placerita Canyon Road from Sierra Highway to Sand Canyon Road –** Reclassify planned secondary highway to a limited secondary highway.

Dockweiler Drive from Ivy Lane to Railroad Avenue – For Highway Plan purposes, Dockweiler Drive's entire length is a secondary highway. However, as a result of the 2009-approved The Master's College Master Plan, a section of Dockweiler Drive between Ivy Lane and the future intersection of Railroad Avenue and Lyons Avenue will not be striped to four-lane secondary highway standards. Instead, in an effort to have lower speeds on this segment and to maintain the existing residential community character, design features in this area are to include one travel lane in each direction and traffic calming measures such as on-street parking, medians and chokers. Full four-lane buildout to secondary highway standards will not occur on Dockweiler Drive until such time as traffic volumes warrant.

The following roadway segments were recommended to be removed from the Highway Plan as a result of the traffic analysis:

1. **16th Street from Orchard Village Road to Railroad Avenue** – Remove secondary (existing and planned) highway classification.
2. **Sloan Canyon Road from Hillcrest Parkway to Quail Valley Road** – Remove planned limited secondary highway classification.
3. **Castaic Road from Parker Road to Newhall Ranch Road** – Remove planned secondary highway classification.
4. **Biscailuz Drive from The Old Road to the previously planned extension of Castaic Road** – Remove planned secondary highway classification.

5. **Landmark Village (VTTM 53108) Spine Road** – Remove planned secondary highway classification.
6. **"A" Street (Mallory Drive) from Poe Parkway to Valencia Boulevard** – Remove planned secondary highway classification.
7. **Poe Parkway from Stevenson Ranch Parkway to Valencia Boulevard** – Remove secondary (existing and planned) highway classification.
8. **Cruzan Mesa Road from Whites Canyon Road to Sierra Highway** – Remove planned limited secondary highway classification.
9. **Newhall Avenue from 16th Street to Lyons Avenue** – Remove planned secondary highway classification.
10. **Seco Canyon Road north of Copper Hill Drive** – Remove existing limited secondary highway classification.
11. **Tournament Road** – Remove existing limited secondary highway classification.
12. **Lost Canyon Road east of Sand Canyon Road** – Remove existing limited secondary highway classification.

The following roadway alignments were recommended to be changed as a result of the traffic analysis:

1. **Long Canyon Road/Potrero Canyon Road/Valencia Boulevard at planned intersection** – Realign to make Long Canyon Road/Valencia Boulevard the continuous roadway.
2. **Chiquito Canyon Road/Long Canyon Road at State Route 126** – Revise alignments to create a continuous north/south roadway.
3. **Whites Canyon Road from Plum Canyon Road to Vasquez Canyon Road** – Revise alignment to connect from Plum Canyon Road to Sierra Highway (as the proposed Skyline Ranch Road).

Table 3-2 indicates the designation of all General Plan roadways as shown on the proposed Highway Plan.

Table 3-2: Highway Plan Roadways in the Planning Area

Roadway Classification	Roadway Segments in Planning Area
Expressways	SR-126
Major Highways	Avenue Scott (from Rye Canyon Road to Avenue Tibbitts) Avenue Tibbitts Bouquet Canyon Road (from Plum Canyon Road to Magic Mountain Parkway) Castaic Road (from Lake Hughes Road to Parker Road) Commerce Center Drive Copper Hill Drive (from Newhall Ranch Road to Seco Canyon Road) Golden Valley Road (from Newhall Ranch Road to SR-14 freeway) Hasley Canyon Road (from Commerce Center Drive to I-5 freeway) Lake Hughes Road (from The Old Road to Ridge Route Road) Long Canyon Road (from SR-126 to Valencia Boulevard) Lost Canyon Road (from Jakes Way to Via Princessa) Lyons Avenue Magic Mountain Parkway (from Commerce Center Drive to Via Princessa) McBean Parkway (from I-5 freeway to Copper Hill Drive) Newhall Avenue (from Railroad Avenue to SR-14 freeway) Newhall Ranch Road Orchard Village Road Parker Road (from The Old Road to Castaic Road) Pico Canyon Road Plum Canyon Road Railroad Avenue (from Magic Mountain Parkway to Lyons Avenue) Rye Canyon Road Sand Canyon Road (from Soledad Canyon Road to Lost Canyon Road) Santa Clarita Parkway Sierra Highway Soledad Canyon Road Stevenson Ranch Parkway The Old Road (from Hasley Canyon Road to Lyons Avenue) The Old Road (from Calgrove Boulevard to Sierra Highway) Valencia Boulevard Via Princessa (from Wiley Canyon Road to Lost Canyon Road) Whites Canyon Road Wiley Canyon Road (from Lyons Avenue to Via Princessa)

(Continued)

Table 3-2: Highway Plan Roadways in the Planning Area (Continued)

Roadway Classification	Roadway Segments in Planning Area
Secondary Highways	Agua Dulce Canyon Road Avenue Scott (from Avenue Tibbitts to McBean Parkway) Bouquet Canyon Road (from Plum Canyon Road to Angeles National Forest boundary) Calgrove Boulevard Canyon Park Boulevard Copper Hill Drive (from Seco Canyon Road to Bouquet Canyon Road) Davenport Road Decoro Drive (from Seco Canyon Road to Copper Hill Drive) Dickason Drive (from Newhall Ranch Road to Decoro Drive) Dockweiler Drive Escondido Canyon Road Golden Valley Road (from Newhall Ranch Road to Plum Canyon Road) Golden Valley Road (from SR-14 freeway to Via Princessa) Haskell Canyon Road (from Copper Hill Drive to Bouquet Canyon Road) Hasley Canyon Road (from Del Valle Road to Commerce Center Drive) Hillcrest Parkway Long Canyon Road (from Chiquito Canyon Road to SR-126) Lost Canyon Road (from Jakes Way to Sand Canyon Road) Magic Mountain Parkway (from Long Canyon Road to Commerce Center Drive) Newhall Avenue (from Lyons Avenue to Railroad Avenue) Potrero Canyon Road Railroad Avenue (from Lyons Avenue to Newhall Avenue) Ridge Route Road (from approximately ¾ mile north of Northlake Hills elementary school to Castaic Road) Rockwell Canyon Road Sand Canyon Road (from Sierra Highway to Soledad Canyon Road) Seco Canyon Road (from Copper Hill Drive to Bouquet Canyon Road) Skyline Ranch Road Sloan Canyon Road (from The Old Road to Quail Valley Road) The Old Road (from Oak Valley Road to Hasley Canyon Road) The Old Road (from Pico Canyon Road to Calgrove Boulevard) Tourney Road Valley Street (from Lyons Avenue to Happy Valley Drive) Via Princessa (from Lost Canyon Road to Golden Valley Road) Wiley Canyon Road (from Lyons Avenue to Calgrove Boulevard)

(Continued)

Table 3-2: Highway Plan Roadways in the Planning Area (Continued)

Roadway Classification	Roadway Segments in Planning Area
Limited Secondary Highways	Bouquet Canyon Road (from Angeles National Forest Boundary to Elizabeth Lake Road) Chiquito Canyon Road (from Del Valle Road to Long Canyon Road) Del Valle Road (from Chiquito Canyon Road to Hasley Canyon Road) Hasley Canyon Road (from Sloan Canyon Road to Del Valle Road) Jakes Way Lake Hughes Road (from Ridge Route Road to Pine Canyon Road) McBean Parkway (from San Francisquito Canyon Road to Copper Hill Drive) Placerita Canyon Road (from Sierra Highway to Sand Canyon Road) Ridge Route Road (from Templin Highway to approximately ¾ mile north of Northlake Hills elementary school) San Francisquito Canyon Road (from McBean Parkway to Elizabeth Lake Road) Sand Canyon Road (from Lost Canyon Road to Little Tujunga Canyon Road) Shadow Pines Boulevard Sloan Canyon Road (from Hillcrest Parkway to Hasley Canyon Road) Tick Canyon Road Vasquez Canyon Road
Parkways	Henry Mayo Drive (from Commerce Center Drive to The Old Road)

4.0 TRAFFIC ANALYSIS

This chapter presents long-range traffic data based on the proposed OVOV land uses and the proposed Highway Plan. Future levels of service findings are discussed and potential improvements needed to implement the plan are summarized.

4.1 LONG-RANGE TRAFFIC VOLUMES

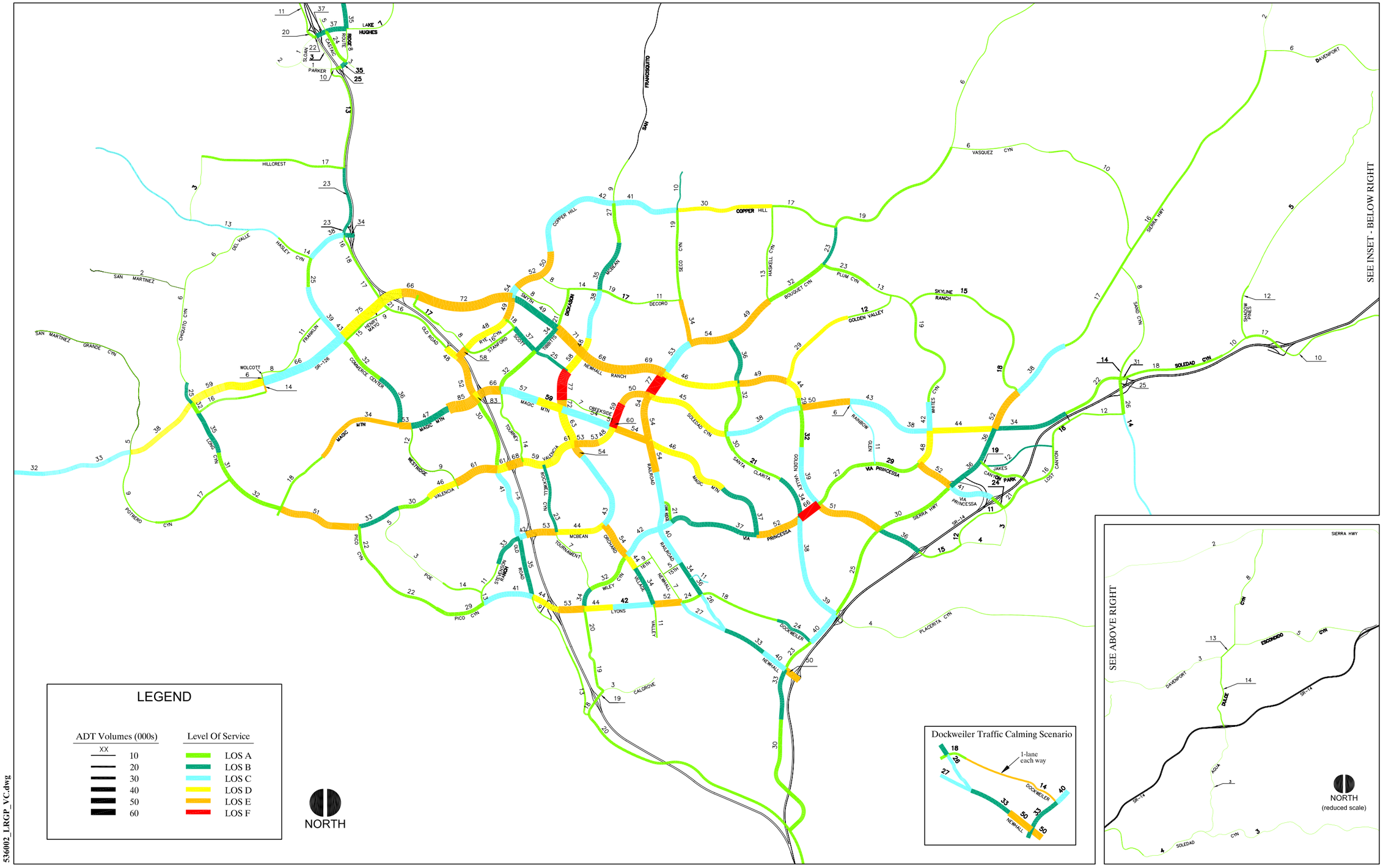
Future daily and peak hour traffic volumes on the analysis area circulation system were estimated for the proposed OVOV land uses and for the current City General Plan/County Area Plan land uses using traffic forecasts produced by the Santa Clarita Valley Consolidated Traffic Model (SCVCTM). They were derived for the roadway system described in the previous chapter, which represents buildout of the proposed Highway Plan.

Long-range ADT volumes for this roadway plan are shown in Figure 4-1, and peak hour volumes for principal intersections are provided in Figure 4-2 and Figure 4-3 for the a.m. and p.m. peak hours, respectively. They are labeled here as OVOV Buildout Conditions and represent buildout of the proposed OVOV land use plan. While a specific date that corresponds to buildout of the land use is indeterminable due to variations in market conditions, these forecasts can generally be considered a year-2035 horizon for planning purposes.

Traffic volumes based on the current City General Plan/County Area Plan traffic model are also presented for comparison purposes. ADT volumes are illustrated in Figure 4-4, and peak hour volumes for principal intersections are provided in Figure 4-5 and Figure 4-6 for the a.m. and p.m. peak hours, respectively.

4.2 LONG-RANGE LEVELS OF SERVICE

A comparison of OVOV Buildout Conditions to traffic forecasts based on the current City General Plan/County Area Plan is provided in Table 4-1. The table presents roadway segment V/C ratios and LOS values for each of the two scenarios. A comparable table for peak hour intersection conditions is provided in Table 4-2 and Table 4-3, which presents ICU and LOS values for each of the two scenarios based on existing intersection geometry as well as with buildout of the proposed Highway Plan.



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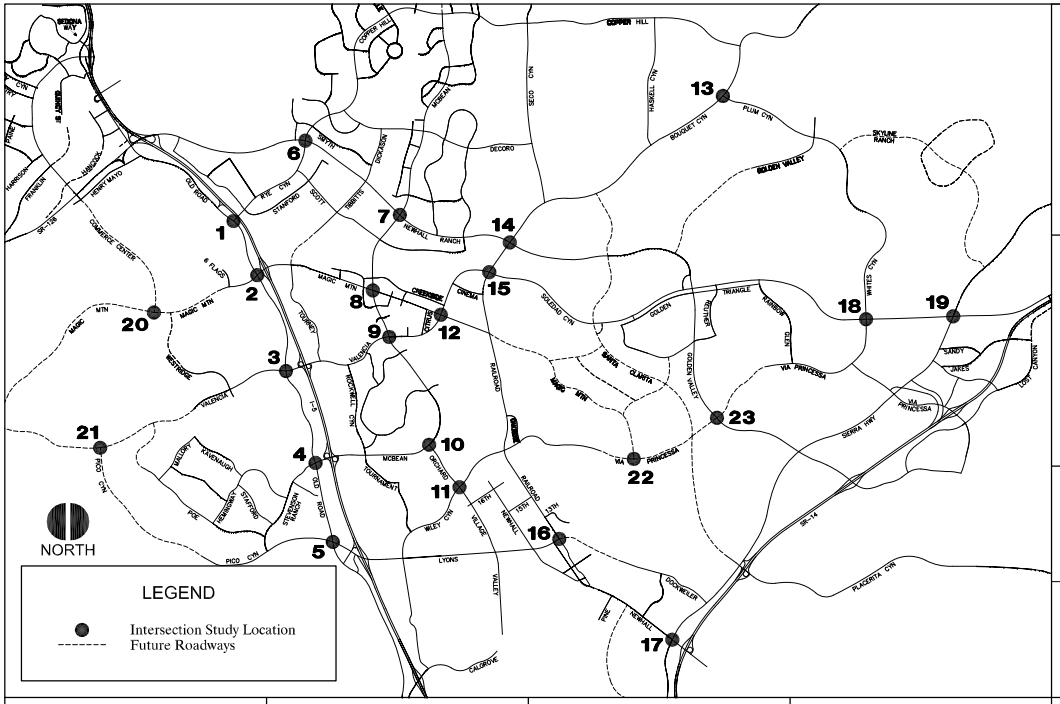

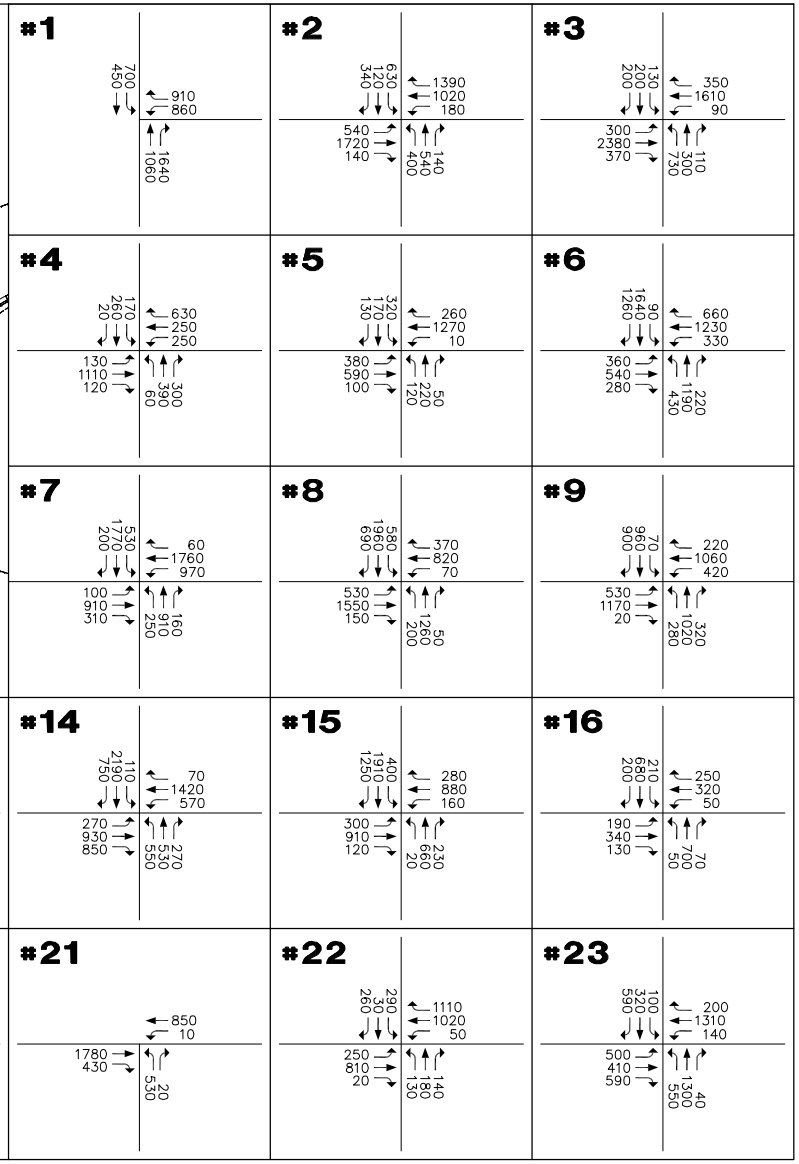

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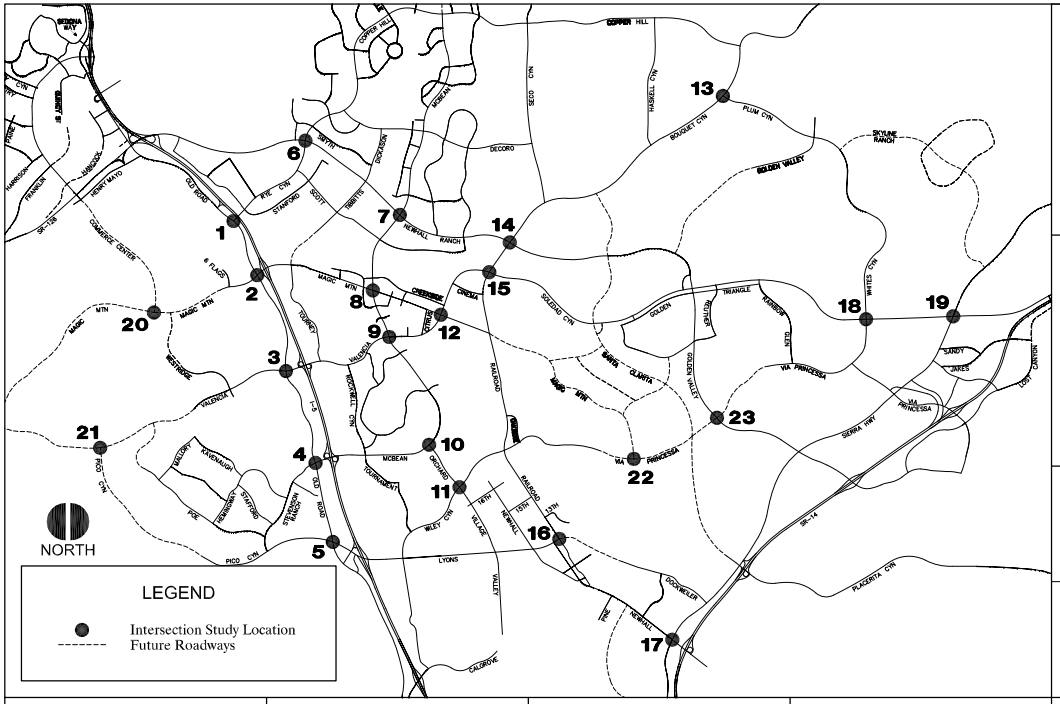
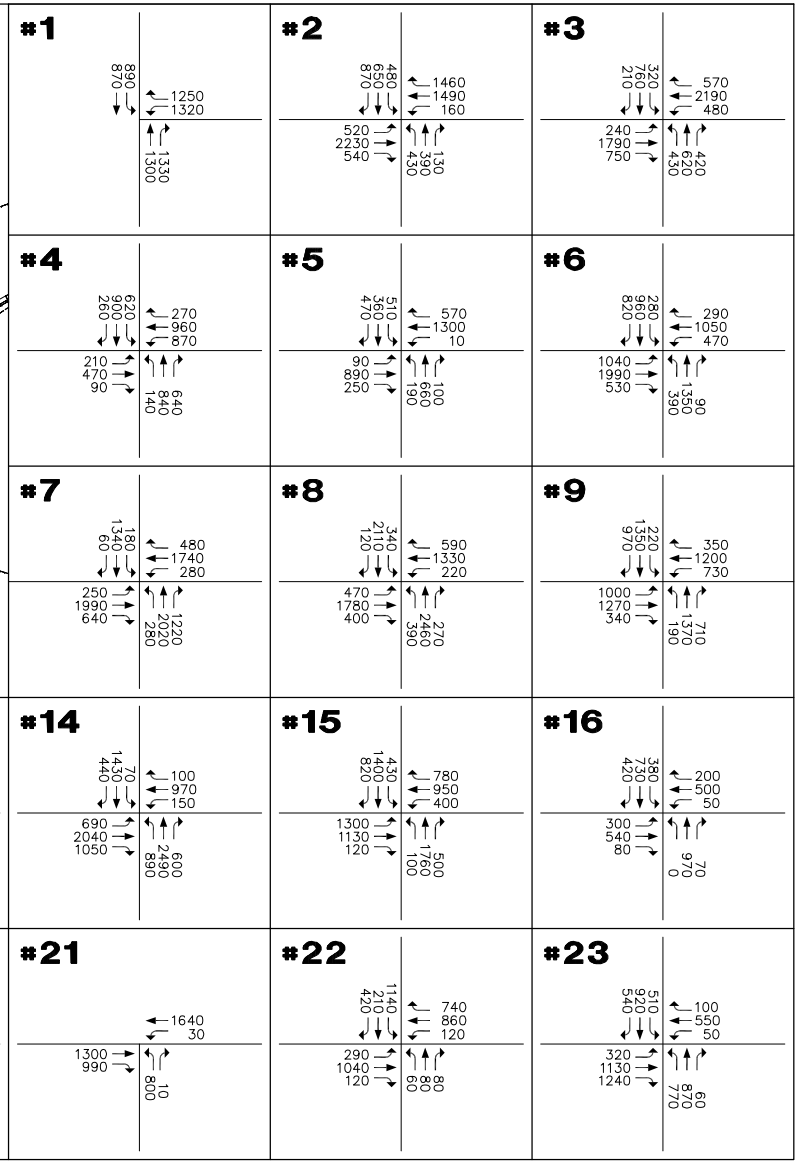
AM PEAK HOUR TURNING MOVEMENT VOLUMES - OVOV BUILDOUT CONDITIONS





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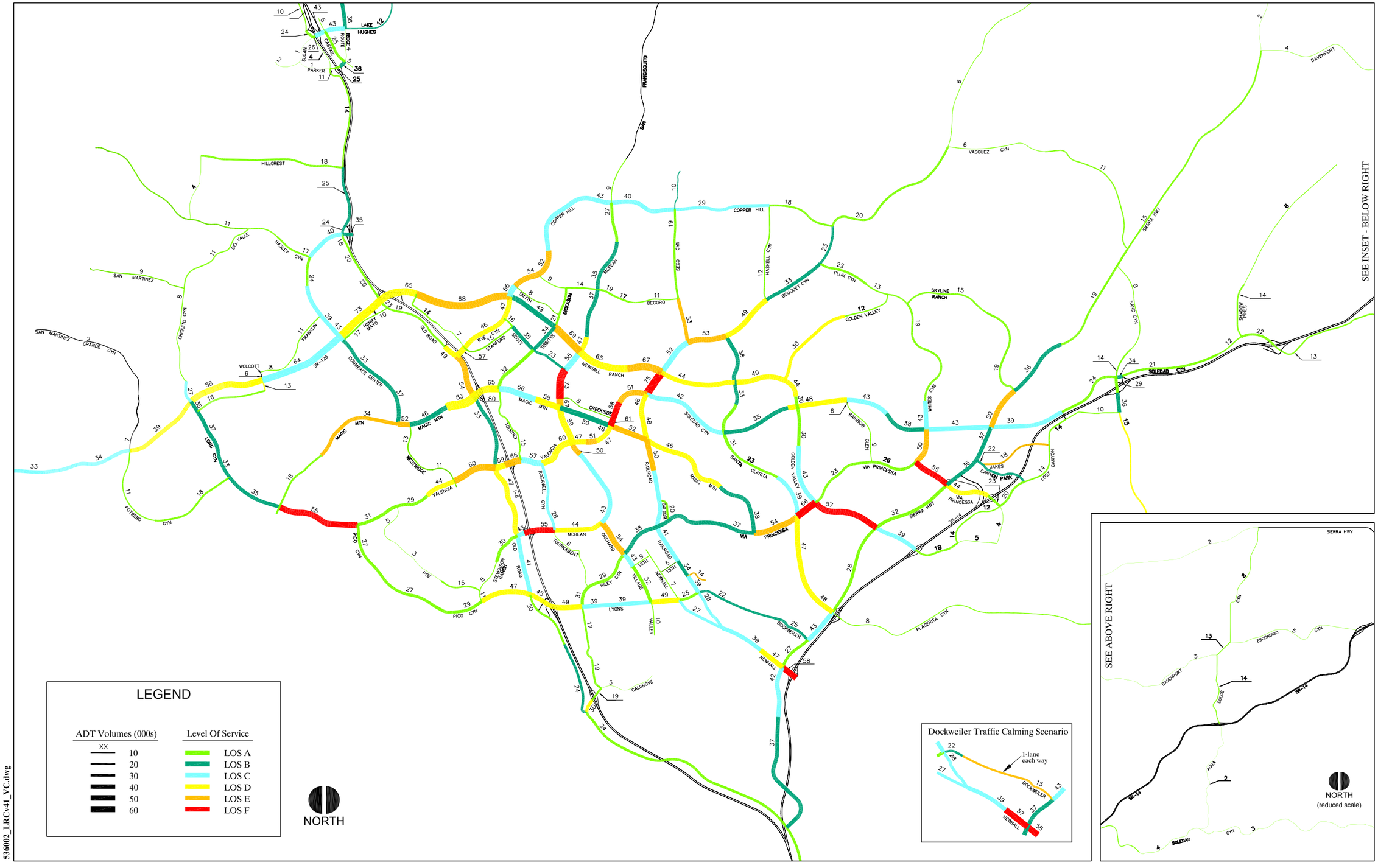
AUSTIN-FOUST ASSOCIATES, INC.

PM PEAK HOUR TURNING MOVEMENT VOLUMES - OVOV BUILDOUT CONDITIONS



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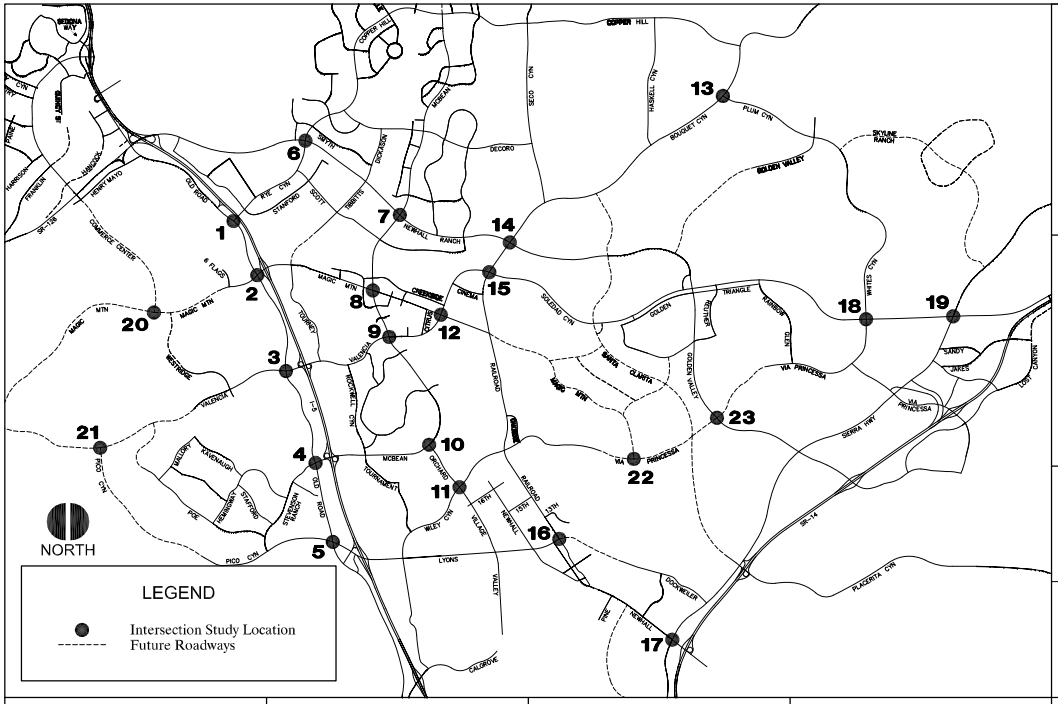
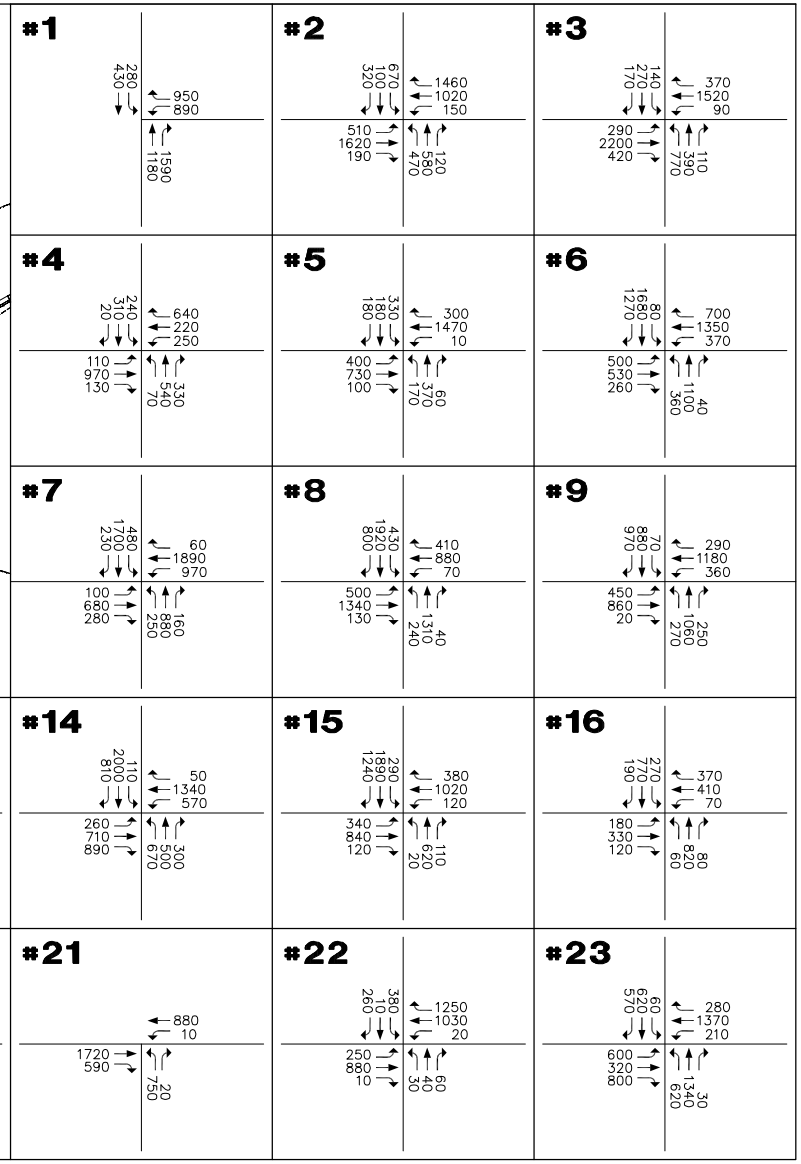
AUSTIN-FOUST ASSOCIATES, INC.

AVERAGE DAILY TRAFFIC VOLUMES - CURRENT GENERAL PLAN BUILDOUT CONDITIONS

Figure 4-4





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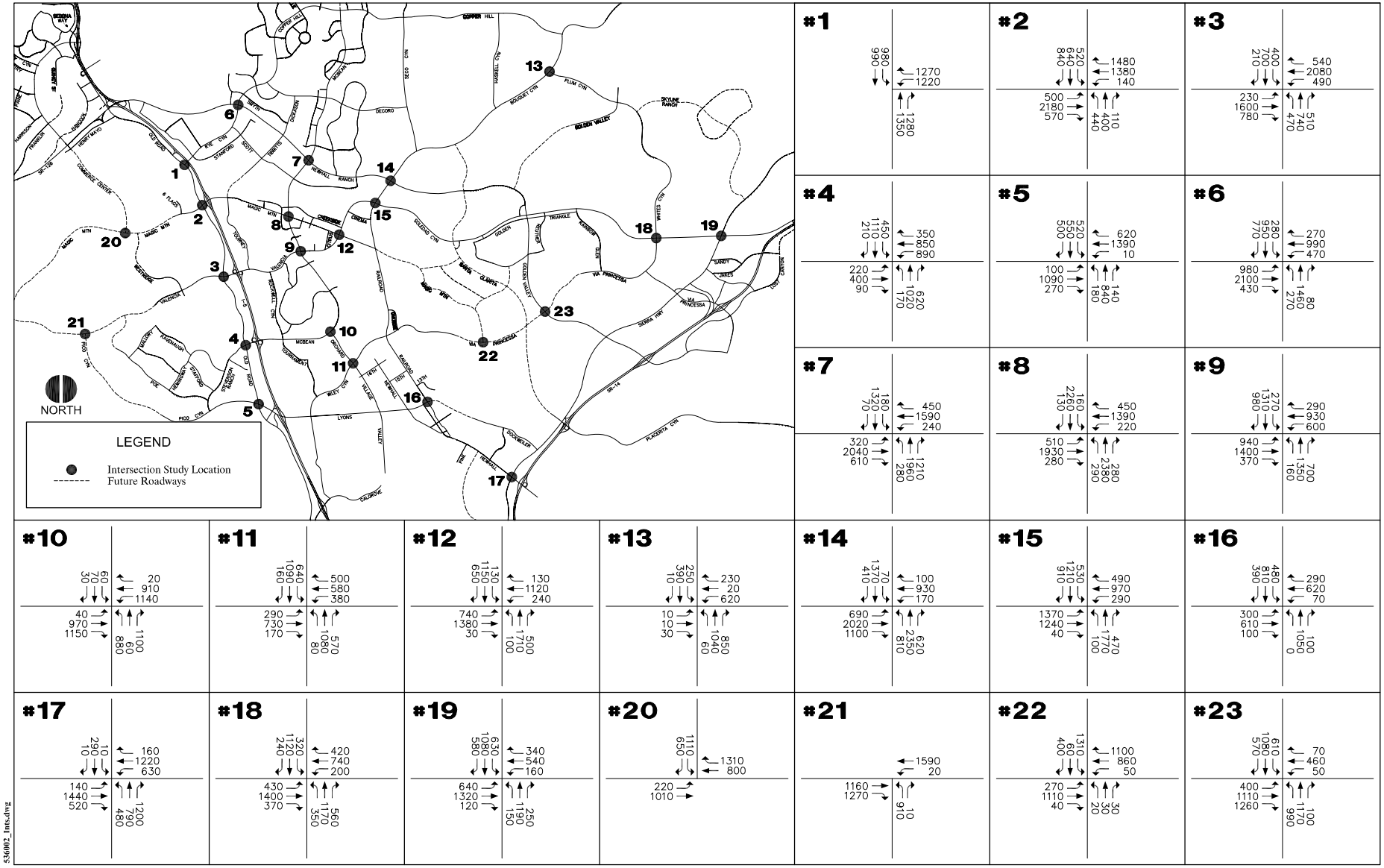
AUSTIN-FOUST ASSOCIATES, INC.

AM PEAK HOUR TURNING MOVEMENT VOLUMES - CURRENT GENERAL PLAN BUILDOUT CONDITIONS



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AUSTIN-FOUST ASSOCIATES, INC.

PM PEAK HOUR TURNING MOVEMENT VOLUMES - CURRENT GENERAL PLAN BUILDOUT CONDITIONS

Table 4-1: ADT V/C and LOS – Current General Plan Buildout Conditions vs OVOV Buildout Conditions

Roadway Segment	Lanes	Capacity	Current GP			OVOV GP		
			Volume	V/C	LOS	Volume	V/C	LOS
1. Agua Dulce n/o Escondido Cyn	4	36,000	8,000	.22	A	8,000	.22	A
2. Agua Dulce n/o Davenport	4	36,000	13,000	.36	A	13,000	.36	A
3. Agua Dulce n/o SR-14	4	36,000	14,000	.39	A	14,000	.39	A
4. Agua Dulce s/o SR-14	4	36,000	2,000	.06	A	3,000	.08	A
5. Ave Scott s/o Rye Canyon	6	54,000	16,000	.30	A	18,000	.33	A
6. Ave Scott s/o Stanford	6	54,000	35,000	.65	B	37,000	.69	B
7. Ave Scott n/o McBean	4	36,000	23,000	.64	B	25,000	.69	B
8. Ave Stanford s/o Vanderbilt	4	36,000	14,000	.39	A	17,000	.47	A
9. Ave Stanford n/o Rye Cyn	4	30,000	7,000	.23	A	8,000	.27	A
10. Ave Stanford s/o Rye Cyn	4	36,000	15,000	.42	A	16,000	.44	A
11. Bouquet Cyn n/o Vasquez	4	36,000	6,000	.17	A	6,000	.17	A
12. Bouquet Cyn n/o Copper Hill	4	36,000	20,000	.56	A	19,000	.53	A
13. Bouquet Cyn e/o Plum Cyn	4	36,000	23,000	.64	B	23,000	.64	B
14. Bouquet Cyn e/o Haskell	6	54,000	33,000	.61	B	32,000	.59	A
15. Bouquet Cyn w/o Haskell	6	54,000	49,000	.91	E	49,000	.91	E
16. Bouquet Cyn e/o Seco	6	54,000	53,000	.98	E	54,000	1.00	E
17. Bouquet Cyn w/o Seco	8	72,000	52,000	.72	C	53,000	.74	C
18. Bouquet Cyn s/o Newhall Ranch	8	72,000	75,000	1.04	**F**	77,000	1.07	**F**
19. Bouquet Cyn s/o Soledad	6	54,000	46,000	.85	D	54,000	1.00	E
20. Bouquet Cyn n/o Magic Mtn	6	54,000	48,000	.89	D	54,000	1.00	E
21. Calgrove e/o The Old Road	4	36,000	30,000	.83	D	18,000	.50	A
22. Calgrove w/o Wiley Cyn	4	36,000	19,000	.53	A	19,000	.53	A
23. Calgrove e/o Wiley Cyn	4	36,000	3,000	.08	A	3,000	.08	A
24. Canyon Park e/o Sierra Hwy	4	36,000	22,000	.61	B	19,000	.53	A
25. Castaic n/o Lake Hughes	4	36,000	6,000	.17	A	5,000	.14	A
26. Castaic s/o Lake Hughes	6	54,000	25,000	.46	A	24,000	.44	A
27. Castaic s/o Ridge Route	2	15,000	5,000	.33	A	3,000	.20	A
28. Chiquito Cyn s/o San Martinez Cyn	2	18,000	8,000	.44	A	6,000	.33	A

(Continued)

Table 4-1: ADT V/C and LOS – Current General Plan Buildout Conditions vs OVOV Buildout Conditions (Continued)

Roadway Segment	Lanes	Capacity	Current GP			OVOV GP		
			Volume	V/C	LOS	Volume	V/C	LOS
29. Chiquito Cyn (Long Cyn) n/o SR-126	4	36,000	27,000	.75	C	25,000	.69	B
30. Commerce Center s/o Industry	6	54,000	24,000	.44	A	25,000	.46	A
31. Commerce Center s/o Franklin	6	54,000	39,000	.72	C	39,000	.72	C
32. Commerce Center n/o SR-126	6	54,000	43,000	.80	C	43,000	.80	C
33. Commerce Center s/o Henry Mayo	6	54,000	33,000	.61	B	32,000	.59	A
34. Commerce Center n/o Magic Mtn	6	54,000	37,000	.69	B	36,000	.67	B
35. Copper Hill n/o Newhall Ranch	8	72,000	55,000	.76	C	54,000	.75	C
36. Copper Hill s/o Decoro	6	54,000	54,000	1.00	E	52,000	.96	E
37. Copper Hill n/o Decoro	6	54,000	52,000	.96	E	50,000	.93	E
38. Copper Hill w/o McBean	6	54,000	43,000	.80	C	42,000	.78	C
39. Copper Hill e/o McBean	6	54,000	40,000	.74	C	41,000	.76	C
40. Copper Hill e/o Seco Cyn	4	36,000	29,000	.81	D	30,000	.83	D
41. Copper Hill e/o Haskell	4	36,000	18,000	.50	A	17,000	.47	A
42. Creekside e/o McBean Pkwy	4	36,000	8,000	.22	A	7,000	.19	A
43. Davenport e/o Sierra Hwy	4	36,000	4,000	.11	A	6,000	.17	A
44. Davenport w/o Agua Dulce	4	36,000	3,000	.08	A	3,000	.08	A
45. Decoro e/o Copper Hill	4	36,000	9,000	.25	A	8,000	.22	A
46. Decoro e/o Dickason	4	36,000	14,000	.39	A	14,000	.39	A
47. Decoro e/o McBean	4	36,000	19,000	.53	A	19,000	.53	A
48. Decoro w/o Hillsborough	4	36,000	17,000	.47	A	17,000	.47	A
49. Decoro w/o Seco Cyn	4	36,000	11,000	.31	A	11,000	.31	A
50. Del Valle n/o San Martinez	2	18,000	11,000	.61	B	6,000	.33	A
51. Dickason n/o Newhall Ranch	6	54,000	21,000	.39	A	21,000	.39	A
52. Dockweiler e/o Railroad	4	36,000	22,000	.61	B	18,000	.50	A
53. Dockweiler w/o Sierra Hwy	4	36,000	25,000	.69	B	24,000	.67	B
54. Escondido e/o Agua Dulce	4	36,000	5,000	.14	A	5,000	.14	A
55. Franklin e/o Wolcott Way	2	15,000	8,000	.53	A	8,000	.53	A
56. Franklin w/o Commerce Center	4	36,000	11,000	.31	A	11,000	.31	A

(Continued)

Table 4-1: ADT V/C and LOS – Current General Plan Buildout Conditions vs OVOV Buildout Conditions (Continued)

Roadway Segment	Lanes	Capacity	Current GP			OVOV GP		
			Volume	V/C	LOS	Volume	V/C	LOS
57. Golden Valley s/o Plum Cyn	4	36,000	12,000	.33	A	12,000	.33	A
58. Golden Valley n/o Newhall Ranch	4	36,000	30,000	.83	D	29,000	.81	D
59. Golden Valley n/o Soledad	6	54,000	44,000	.81	D	44,000	.81	D
60. Golden Valley s/o Soledad	6	54,000	30,000	.56	A	29,000	.54	A
61. Golden Valley n/o Centre Point	6	54,000	30,000	.56	A	32,000	.59	A
62. Golden Valley s/o Centre Point	6	54,000	43,000	.80	C	39,000	.72	C
63. Golden Valley s/o Via Princessa	6	54,000	57,000	1.06	**F**	51,000	.94	E
64. Golden Valley e/o Sierra Hwy	6	54,000	39,000	.72	C	36,000	.67	B
65. Golden Valley e/o SR-14	4	36,000	18,000	.50	A	15,000	.42	A
66. Golden Valley e/o Lost Cyn	4	36,000	5,000	.14	A	4,000	.11	A
67. Haskell Cyn n/o Bouquet	4	36,000	12,000	.33	A	13,000	.36	A
68. Hasley Cyn w/o Del Valle	2	18,000	11,000	.61	B	13,000	.72	C
69. Hasley Cyn w/o Commerce Center	4	36,000	17,000	.47	A	14,000	.39	A
70. Hasley Cyn w/o The Old Road	6	54,000	40,000	.74	C	38,000	.70	B
71. Hasley Cyn w/o I-5	6	54,000	35,000	.65	B	34,000	.63	B
72. Henry Mayo e/o Commerce Center	4	36,000	17,000	.47	A	15,000	.42	A
73. Henry Mayo w/o The Old Road	4	36,000	10,000	.28	A	9,000	.25	A
74. Hillcrest w/o The Old Road	4	36,000	18,000	.50	A	17,000	.47	A
75. Jakes Way e/o Canyon Park	2	18,000	18,000	1.00	E	12,000	.67	B
76. Lake Hughes w/o Castaic	6	54,000	43,000	.80	C	37,000	.69	B
77. Lake Hughes e/o Castaic	6	54,000	43,000	.80	C	37,000	.69	B
78. Lake Hughes e/o Ridge Route	2	18,000	12,000	.67	B	7,000	.39	A
79. Long Cyn s/o SR-126	6	54,000	35,000	.65	B	32,000	.59	A
80. Long Cyn s/o River Village	6	54,000	37,000	.69	B	35,000	.65	B
81. Long Cyn n/o Potrero Cyn	6	54,000	33,000	.61	B	31,000	.57	A
82. Long Canyon s/o Potrero Cyn	6	54,000	35,000	.65	B	32,000	.59	A
83. Lost Cyn w/o Sand Cyn	4	36,000	10,000	.28	A	12,000	.33	A
84. Lost Cyn n/o Jakes Way	4	36,000	14,000	.39	A	16,000	.44	A

(Continued)

Table 4-1: ADT V/C and LOS – Current General Plan Buildout Conditions vs OVOV Buildout Conditions (Continued)

Roadway Segment	Lanes	Capacity	Current GP			OVOV GP		
			Volume	V/C	LOS	Volume	V/C	LOS
85. Lost Cyn n/o Canyon Park	6	54,000	14,000	.26	A	16,000	.30	A
86. Lost Cyn n/o Via Princessa	6	54,000	20,000	.37	A	21,000	.39	A
87. Lost Cyn s/o Via Princessa	4	36,000	12,000	.33	A	11,000	.31	A
88. Lost Cyn n/o Golden Valley	4	36,000	14,000	.39	A	12,000	.33	A
89. Lyons e/o I-5	6	54,000	49,000	.91	E	53,000	.98	E
90. Lyons e/o Wiley Cyn	6	54,000	39,000	.72	C	44,000	.81	D
91. Lyons w/o Orchard Village	6	54,000	39,000	.72	C	42,000	.78	C
92. Lyons e/o Orchard Village	6	54,000	49,000	.91	E	52,000	.96	E
93. Lyons w/o Main Street	6	54,000	25,000	.46	A	24,000	.44	A
94. Magic Mtn e/o Long Cyn	4	36,000	18,000	.50	A	18,000	.50	A
95. Magic Mtn w/o Commerce Center	4	36,000	34,000	.94	E	34,000	.94	E
96. Magic Mtn e/o Commerce Center	6	54,000	52,000	.96	E	53,000	.98	E
97. Magic Mtn e/o Westridge	8	72,000	46,000	.64	B	47,000	.65	B
98. Magic Mtn w/o The Old Road	10	90,000	83,000	.92	E	85,000	.94	E
99. Magic Mtn e/o The Old Road	10	90,000	80,000	.89	D	83,000	.92	E
100. Magic Mtn e/o I-5	8	72,000	65,000	.90	D	66,000	.92	E
101. Magic Mtn e/o Tourney	8	72,000	56,000	.78	C	57,000	.79	C
102. Magic Mtn w/o McBean	8	72,000	58,000	.81	D	59,000	.82	D
103. Magic Mtn e/o McBean	8	72,000	50,000	.69	B	54,000	.75	C
104. Magic Mtn w/o Valencia	8	72,000	48,000	.67	B	51,000	.71	C
105. Magic Mtn e/o Valencia	6	54,000	52,000	.96	E	54,000	1.00	E
106. Magic Mtn e/o Bouquet Cyn	6	54,000	46,000	.85	D	46,000	.85	D
107. Magic Mtn n/o Via Princessa	6	54,000	38,000	.70	B	37,000	.69	B
108. McBean n/o Copper Hill	2	18,000	9,000	.50	A	9,000	.50	A
109. McBean s/o Copper Hill	6	54,000	27,000	.50	A	27,000	.50	A
110. McBean n/o Decoro	6	54,000	35,000	.65	B	35,000	.65	B
111. McBean s/o Decoro	6	54,000	37,000	.69	B	38,000	.70	B
112. McBean n/o Newhall Ranch	6	54,000	47,000	.87	D	48,000	.89	D

(Continued)

Table 4-1: ADT V/C and LOS – Current General Plan Buildout Conditions vs OVOV Buildout Conditions (Continued)

Roadway Segment	Lanes	Capacity	Current GP			OVOV GP		
			Volume	V/C	LOS	Volume	V/C	LOS
113. McBean s/o Newhall Ranch	8	72,000	55,000	.76	C	58,000	.81	D
114. McBean s/o Ave Scott	8	72,000	73,000	1.01	**F**	77,000	1.07	**F**
115. McBean n/o Magic Mtn	8	72,000	67,000	.93	E	72,000	1.00	E
116. McBean n/o Valencia	8	72,000	59,000	.82	D	63,000	.88	D
117. McBean s/o Valencia	6	54,000	50,000	.93	E	54,000	1.00	E
118. McBean n/o Orchard Village	6	54,000	43,000	.80	C	43,000	.80	C
119. McBean e/o Rockwell Cyn	6	54,000	44,000	.81	D	44,000	.81	D
120. McBean w/o Rockwell Cyn	6	54,000	55,000	1.02	**F**	53,000	.98	E
121. McBean w/o I-5	6	54,000	43,000	.80	C	42,000	.78	C
122. Newhall Ranch e/o I-5	8	72,000	65,000	.90	D	66,000	.92	E
123. Newhall Ranch w/o Rye Cyn	8	72,000	68,000	.94	E	72,000	1.00	E
124. Newhall Ranch e/o Rye Cyn	8	72,000	48,000	.67	B	49,000	.68	B
125. Newhall Ranch w/o McBean	8	72,000	69,000	.96	E	71,000	.99	E
126. Newhall Ranch e/o McBean	8	72,000	65,000	.90	D	68,000	.94	E
127. Newhall Ranch w/o Bouquet Cyn	8	72,000	67,000	.93	E	69,000	.96	E
128. Newhall Ranch e/o Bouquet Cyn	6	54,000	44,000	.81	D	46,000	.85	D
129. Newhall Ranch e/o Santa Clarita	6	54,000	49,000	.91	E	49,000	.91	E
130. Newhall n/o Lyons	2	15,000	7,000	.47	A	7,000	.47	A
131. Newhall s/o Lyons	4	36,000	27,000	.75	C	27,000	.75	C
132. Newhall n/o Valle Oro	6	54,000	39,000	.72	C	33,000	.61	B
133. Newhall n/o Sierra Hwy	6	54,000	47,000	.87	D	40,000	.74	C
134. Newhall s/o Sierra Hwy	6	54,000	58,000	1.07	**F**	50,000	.93	E
135. Oak Ridge e/o Railroad	4	36,000	20,000	.56	A	21,000	.58	A
136. Orchard Village s/o McBean	6	54,000	54,000	1.00	E	54,000	1.00	E
137. Orchard Village s/o Wiley Cyn	6	54,000	43,000	.80	C	44,000	.81	D
138. Orchard Village n/o Lyons	6	54,000	32,000	.59	A	34,000	.63	B
139. Parker e/o Sloan	2	18,000	1,000	.06	A	1,000	.06	A
140. Parker w/o I-5	6	54,000	11,000	.20	A	10,000	.19	A

(Continued)

Table 4-1: ADT V/C and LOS – Current General Plan Buildout Conditions vs OVOV Buildout Conditions (Continued)

Roadway Segment	Lanes	Capacity	Current GP			OVOV GP		
			Volume	V/C	LOS	Volume	V/C	LOS
141. Pico Cyn s/o Valencia	6	54,000	27,000	.50	A	22,000	.41	A
142. Pico Cyn w/o Whispering Oaks	6	54,000	27,000	.50	A	22,000	.41	A
143. Pico Cyn w/o Stevenson Ranch	6	54,000	29,000	.54	A	29,000	.54	A
144. Pico Cyn w/o The Old Road	6	54,000	47,000	.87	D	41,000	.76	C
145. Pico Cyn w/o I-5	6	54,000	45,000	.83	D	44,000	.81	D
146. Placerita Cyn e/o SR-14	2	18,000	8,000	.44	A	4,000	.22	A
147. Plum Cyn s/o Bouquet Cyn	6	54,000	22,000	.41	A	23,000	.43	A
148. Plum Cyn w/o Golden Valley	6	54,000	13,000	.24	A	13,000	.24	A
149. Poe s/o Valencia	4	36,000	5,000	.14	A	5,000	.14	A
150. Poe s/o Mallory	4	36,000	3,000	.08	A	3,000	.08	A
151. Poe w/o Stevenson Ranch	4	36,000	15,000	.42	A	14,000	.39	A
152. Potrero s/o SR-126	4	36,000	11,000	.31	A	9,000	.25	A
153. Potrero w/o Long Cyn	4	36,000	18,000	.50	A	17,000	.47	A
154. Railroad s/o Magic Mtn	6	54,000	50,000	.93	E	54,000	1.00	E
155. Railroad s/o Oak Ridge	6	54,000	41,000	.76	C	40,000	.74	C
156. Railroad n/o 13th St	6	54,000	34,000	.63	B	34,000	.63	B
157. Railroad n/o Lyons	6	54,000	39,000	.72	C	36,000	.67	B
158. Railroad s/o Lyons	4	36,000	28,000	.78	C	26,000	.72	C
159. Rainbow Glen s/o Soledad Cyn	2	15,000	6,000	.40	A	6,000	.40	A
160. Rainbow Glen n/o Via Princessa	2	15,000	9,000	.60	A	11,000	.73	C
161. Ridge Route n/o Lake Hughes	6	54,000	36,000	.67	B	35,000	.65	B
162. Ridge Route n/o Castaic	4	36,000	4,000	.11	A	8,000	.22	A
163. Ridge Route e/o I-5	6	54,000	36,000	.67	B	35,000	.65	B
164. Ridge Route btwn I-5 Ramps	6	54,000	25,000	.46	A	25,000	.46	A
165. Landmark e/o Long Cyn	4	36,000	16,000	.44	A	16,000	.44	A
166. Rockwell Cyn n/o McBean	4	36,000	26,000	.72	C	23,000	.64	B
167. Rye Cyn e/o Ave Scott	6	54,000	47,000	.87	D	49,000	.91	E
168. Rye Cyn w/o Ave Scott	6	54,000	46,000	.85	D	48,000	.89	D

(Continued)

Table 4-1: ADT V/C and LOS – Current General Plan Buildout Conditions vs OVOV Buildout Conditions (Continued)

Roadway Segment	Lanes	Capacity	Current GP			OVOV GP		
			Volume	V/C	LOS	Volume	V/C	LOS
169. Rye Cyn e/o The Old Road	7	63,000	57,000	.90	D	58,000	.92	E
170. San Martinez w/o Del Valle	2	15,000	9,000	.60	A	2,000	.13	A
171. San Martinez Grande Cyn n/o VTTM 60678	2	15,000	2,000	.13	A	<500	.00	A
172. San Martinez Grande Cyn n/o SR-126	4	36,000	7,000	.19	A	5,000	.14	A
173. Sand Cyn s/o Sierra Hwy	4	36,000	8,000	.22	A	8,000	.22	A
174. Sand Cyn n/o Soledad Cyn	4	36,000	14,000	.39	A	14,000	.39	A
175. Sand Cyn s/o Soledad Cyn	6	54,000	29,000	.54	A	25,000	.46	A
176. Sand Cyn s/o SR-14	6	54,000	36,000	.67	B	26,000	.48	A
177. Sand Cyn s/o Lost Cyn	2	18,000	15,000	.83	D	14,000	.78	C
178. Santa Clarita s/o Bouquet Cyn	6	54,000	38,000	.70	B	36,000	.67	B
179. Santa Clarita s/o Newhall Ranch	6	54,000	33,000	.61	B	32,000	.59	A
180. Santa Clarita s/o Soledad	6	54,000	31,000	.57	A	30,000	.56	A
181. Santa Clarita s/o Porta Bella	6	54,000	23,000	.43	A	21,000	.39	A
182. Santa Clarita n/o Via Princessa	6	54,000	39,000	.72	C	34,000	.63	B
183. Santa Clarita s/o Via Princessa	6	54,000	47,000	.87	D	38,000	.70	B
184. Santa Clarita w/o Sierra Hwy	6	54,000	48,000	.89	D	39,000	.72	C
185. Seco Cyn n/o Copper Hill	2	15,000	10,000	.67	B	10,000	.67	B
186. Seco Cyn s/o Copper Hill	4	36,000	19,000	.53	A	19,000	.53	A
187. Seco Cyn n/o Bouquet Cyn	4	36,000	33,000	.92	E	34,000	.94	E
188. Shadow Pines n/o Soledad Cyn	2	18,000	14,000	.77	C	12,000	.66	B
189. Shadow Pines n/o Grandifloras	2	18,000	6,000	.33	A	5,000	.28	A
190. Sierra Hwy w/o Agua Dulce	6	54,000	2,000	.04	A	2,000	.04	A
191. Sierra Hwy n/o Davenport	6	54,000	2,000	.04	A	2,000	.04	A
192. Sierra Hwy n/o Vasquez Cyn	6	54,000	15,000	.28	A	16,000	.30	A
193. Sierra Hwy s/o Sand Cyn	6	54,000	19,000	.35	A	17,000	.31	A
194. Sierra Hwy n/o Skyline Ranch	6	54,000	36,000	.67	B	38,000	.70	B
195. Sierra Hwy n/o Soledad Cyn	6	54,000	50,000	.93	E	52,000	.96	E
196. Sierra Hwy s/o Soledad Cyn	6	54,000	37,000	.69	B	36,000	.67	B

(Continued)

Table 4-1: ADT V/C and LOS – Current General Plan Buildout Conditions vs OVOV Buildout Conditions (Continued)

Roadway Segment	Lanes	Capacity	Current GP			OVOV GP		
			Volume	V/C	LOS	Volume	V/C	LOS
197. Sierra Hwy s/o Canyon Park	6	54,000	36,000	.67	B	36,000	.67	B
198. Sierra Hwy s/o Via Princessa	6	54,000	32,000	.59	A	30,000	.56	A
199. Sierra Hwy s/o Golden Valley	6	54,000	28,000	.52	A	25,000	.46	A
200. Sierra Hwy n/o Dockweiler	6	54,000	43,000	.80	C	40,000	.74	C
201. Sierra Hwy n/o Newhall	6	54,000	27,000	.50	A	23,000	.43	A
202. Sierra Hwy s/o Newhall	6	54,000	42,000	.78	C	33,000	.61	B
203. Sierra Hwy n/o SR-14	6	54,000	37,000	.69	B	30,000	.56	A
204. Skyline Ranch e/o Plum Cyn	4	36,000	15,000	.42	A	15,000	.42	A
205. Skyline Ranch w/o Sierra Hwy	4	36,000	19,000	.53	A	18,000	.50	A
206. Sloan Cyn e/o The Old Road	6	54,000	26,000	.48	A	22,000	.41	A
207. Sloan Cyn e/o Parker	4	36,000	1,000	.03	A	1,000	.03	A
208. Sloan Cyn w/o Parker	4	36,000	2,000	.06	A	2,000	.06	A
209. Sloan Cyn s/o Hillcrest	2	18,000	4,000	.22	A	3,000	.17	A
210. Smyth s/o Copper Hill	4	30,000	8,000	.27	A	8,000	.27	A
211. Soledad Cyn e/o Bouquet Cyn	6	54,000	42,000	.78	C	45,000	.83	D
212. Soledad Cyn w/o Golden Valley	6	54,000	38,000	.70	B	38,000	.70	B
213. Soledad Cyn e/o Golden Valley	6	54,000	48,000	.89	D	50,000	.93	E
214. Soledad Cyn e/o Rainbow Glen	6	54,000	43,000	.80	C	43,000	.80	C
215. Soledad Cyn w/o Whites Cyn	6	54,000	38,000	.70	B	38,000	.70	B
216. Soledad Cyn e/o Whites Cyn	6	54,000	43,000	.80	C	44,000	.81	D
217. Soledad Cyn e/o Sierra Hwy	6	54,000	39,000	.72	C	34,000	.63	B
218. Soledad Cyn w/o Sand Cyn	6	54,000	24,000	.44	A	22,000	.41	A
219. Soledad Cyn e/o Sand Cyn	6	54,000	34,000	.63	B	31,000	.57	A
220. Soledad Cyn e/o SR-14 (at Sand Cyn)	6	54,000	21,000	.39	A	18,000	.33	A
221. Soledad Cyn w/o Shadow Pines	6	54,000	12,000	.22	A	10,000	.19	A
222. Soledad Cyn e/o Shadow Pines	6	54,000	22,000	.41	A	17,000	.31	A
223. Soledad Cyn e/o SR-14	4	36,000	13,000	.36	A	10,000	.28	A
224. Soledad Cyn w/o Agua Dulce	4	36,000	4,000	.11	A	4,000	.11	A

(Continued)

Table 4-1: ADT V/C and LOS – Current General Plan Buildout Conditions vs OVOV Buildout Conditions (Continued)

Roadway Segment	Lanes	Capacity	Current GP			OVOV GP		
			Volume	V/C	LOS	Volume	V/C	LOS
225. Soledad Cyn e/o Agua Dulce	4	36,000	3,000	.08	A	3,000	.08	A
226. SR-126 at County Line	4	44,000	33,000	.75	C	32,000	.73	C
227. SR-126 w/o San Martinez Grande Cyn	4	44,000	34,000	.77	C	33,000	.75	C
228. SR-126 w/o Chiquito Cyn/Long Cyn	4	44,000	39,000	.89	D	38,000	.86	D
229. SR-126 w/o Wolcott	6	66,000	58,000	.88	D	59,000	.89	D
230. SR-126 w/o Commerce Center	8	88,000	64,000	.73	C	66,000	.75	C
231. SR-126 w/o I-5	8	88,000	73,000	.83	D	75,000	.85	D
232. Stevenson Ranch w/o Old Road	6	54,000	30,000	.56	A	33,000	.61	B
233. Stevenson Ranch n/o Poe	6	54,000	8,000	.15	A	11,000	.20	A
234. Stevenson Ranch n/o Pico Cyn	6	54,000	11,000	.20	A	13,000	.24	A
235. The Old Road n/o I-5 (at Lake Hughes)	4	36,000	10,000	.28	A	11,000	.31	A
236. The Old Road n/o Sloan Cyn	6	54,000	24,000	.44	A	20,000	.37	A
237. The Old Road n/o Parker	4	36,000	4,000	.11	A	3,000	.08	A
238. The Old Road n/o Hillcrest	4	36,000	14,000	.39	A	13,000	.36	A
239. The Old Road n/o Sedona Way	4	36,000	25,000	.69	B	23,000	.64	B
240. The Old Road n/o Hasley Cyn	4	36,000	24,000	.67	B	23,000	.64	B
241. The Old Road s/o Hasley Cyn	6	54,000	18,000	.33	A	16,000	.30	A
242. The Old Road n/o Biscailuiz	6	54,000	20,000	.37	A	18,000	.33	A
243. The Old Road n/o Turnberry	6	54,000	20,000	.37	A	17,000	.31	A
244. The Old Road n/o Henry Mayo	6	54,000	23,000	.43	A	21,000	.39	A
245. The Old Road s/o Henry Mayo	6	54,000	19,000	.35	A	16,000	.30	A
246. The Old Road n/o Rye Cyn	6	54,000	49,000	.91	E	48,000	.89	D
247. The Old Road n/o Magic Mtn	6	54,000	54,000	1.00	E	52,000	.96	E
248. The Old Road s/o Magic Mtn	6	54,000	33,000	.61	B	30,000	.56	A
249. The Old Road s/o Valencia	6	54,000	47,000	.87	D	41,000	.76	C
250. The Old Road s/o McBean	6	54,000	41,000	.76	C	35,000	.65	B
251. The Old Road s/o Pico	4	36,000	20,000	.56	A	9,000	.25	A
252. The Old Road n/o Calgrove	4	36,000	24,000	.67	B	13,000	.36	A

(Continued)

Table 4-1: ADT V/C and LOS – Current General Plan Buildout Conditions vs OVOV Buildout Conditions (Continued)

Roadway Segment	Lanes	Capacity	Current GP			OVOV GP		
			Volume	V/C	LOS	Volume	V/C	LOS
253. The Old Road s/o Calgrove	6	54,000	24,000	.44	A	20,000	.37	A
254. Tibbitts s/o Newhall Ranch	6	54,000	34,000	.63	B	34,000	.63	B
255. Tibbitts n/o Magic Mtn	6	54,000	32,000	.59	A	32,000	.59	A
256. Tournament s/o McBean	2	15,000	6,000	.40	A	7,000	.47	A
257. Tourney n/o Valencia	4	36,000	15,000	.42	A	14,000	.39	A
258. Valencia e/o Magic Mtn	6	54,000	55,000	1.02	**F**	51,000	.94	E
259. Valencia e/o Pico Cyn	6	54,000	31,000	.57	A	33,000	.61	B
260. Valencia e/o Poe	6	54,000	29,000	.54	A	30,000	.56	A
261. Valencia w/o Westridge	6	54,000	44,000	.81	D	46,000	.85	D
262. Valencia w/o The Old Road	7	63,000	60,000	.95	E	61,000	.97	E
263. Valencia e/o Old Road	8	72,000	59,000	.82	D	61,000	.85	D
264. Valencia e/o I-5	8	72,000	66,000	.92	E	68,000	.94	E
265. Valencia e/o Tourney	8	72,000	57,000	.79	C	59,000	.82	D
266. Valencia w/o McBean	8	72,000	60,000	.83	D	61,000	.85	D
267. Valencia e/o McBean	6	54,000	47,000	.87	D	53,000	.98	E
268. Valencia w/o Citrus	6	54,000	51,000	.94	E	53,000	.98	E
269. Valencia s/o Magic Mtn	6	54,000	47,000	.87	D	48,000	.89	D
270. Valencia n/o Magic Mtn	6	54,000	61,000	1.13	**F**	60,000	1.11	**F**
271. Valencia s/o Cinema	6	54,000	58,000	1.07	**F**	59,000	1.09	**F**
272. Valencia w/o Bouquet Cyn	6	54,000	51,000	.94	E	50,000	.93	E
273. Valley s/o Lyons	4	36,000	10,000	.28	A	11,000	.31	A
274. Vasquez Cyn e/o Bouquet Cyn	2	18,000	6,000	.33	A	6,000	.33	A
275. Vasquez Cyn w/o Sierra Hwy	2	18,000	11,000	.61	B	10,000	.56	A
276. Via Princessa e/o Oak Ridge	6	54,000	37,000	.69	B	37,000	.69	B
277. Via Princessa e/o Magic Mtn	6	54,000	54,000	1.00	E	52,000	.96	E
278. Via Princessa e/o Santa Clarita	6	54,000	66,000	1.22	**F**	66,000	1.22	**F**
279. Via Princessa w/o Rainbow Glen	6	54,000	23,000	.43	A	27,000	.50	A
280. Via Princessa e/o Rainbow Glen	6	54,000	26,000	.48	A	29,000	.54	A

(Continued)

Table 4-1: ADT V/C and LOS – Current General Plan Buildout Conditions vs OVOV Buildout Conditions (Continued)

Roadway Segment	Lanes	Capacity	Current GP			OVOV GP		
			Volume	V/C	LOS	Volume	V/C	LOS
281. Via Princessa s/o Whites Cyn	6	54,000	55,000	1.02	**F**	52,000	.96	E
282. Via Princessa s/o Sierra Hwy	6	54,000	44,000	.81	D	41,000	.76	C
283. Via Princessa n/o Lost Cyn	6	54,000	23,000	.43	A	24,000	.44	A
284. Via Princessa s/o Lost Cyn	6	54,000	4,000	.07	A	3,000	.06	A
285. Westridge s/o Magic Mtn	4	36,000	13,000	.36	A	12,000	.33	A
286. Westridge n/o Valencia	4	36,000	11,000	.31	A	9,000	.25	A
287. Whites Cyn s/o Skyline Ranch	6	54,000	19,000	.35	A	19,000	.35	A
288. Whites Cyn n/o Soledad	6	54,000	43,000	.80	C	42,000	.78	C
289. Whites Cyn s/o Soledad	6	54,000	50,000	.93	E	48,000	.89	D
290. Wiley Cyn e/o Orchard Village	6	54,000	38,000	.70	B	42,000	.78	C
291. Wiley Cyn e/o Tournament	6	54,000	29,000	.54	A	32,000	.59	A
292. Wiley Cyn n/o Lyons	6	54,000	31,000	.57	A	34,000	.63	B
293. Wiley Cyn s/o Lyons	4	36,000	17,000	.47	A	20,000	.56	A
294. Wiley Cyn n/o Calgrove	4	36,000	19,000	.53	A	19,000	.53	A
295. Wolcott n/o SR-126	2	15,000	6,000	.40	A	6,000	.40	A
296. Wolcott s/o SR-126	4	36,000	13,000	.36	A	14,000	.39	A
297. 13th St e/o Railroad	2	15,000	14,000	.93	E	11,000	.73	C
298. 16th St e/o Orchard Village	4	36,000	9,000	.25	A	9,000	.25	A

LOS in **Bold** exceeds performance criteria of LOS E.

Number of Occurrences

LOS	Current GP	OVOV GP
A-C	222	226
D	36	26
E	30	41
F	10	5

Level of service ranges:					
.00 - .60	A	.61 - .70	B	.71 - .80	C
.81 - .90	D	.91 – 1.00	E	Above 1.00	F

Table 4-2: Buildout ICU Summary for Principal Intersections – Existing Lanes

Existing Intersection Lanes								
	Current GP				OVOV GP			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Intersection	**ICU**	**LOS**	**ICU**	**LOS**	**ICU**	**LOS**	**ICU**	**LOS**
1. The Old Road & Rye Canyon	1.58	**F**	2.31	**F**	1.74	**F**	2.30	**F**
2. The Old Road & Magic Mountain	.79	C	1.03	**F**	.78	C	1.06	**F**
3. The Old Road & Valencia	.85	D	.95	E	.84	D	.95	E
4. The Old Road & Stevenson Ranch	.72	C	1.05	**F**	.69	B	1.12	**F**
5. The Old Road & Pico Canyon	1.05	**F**	1.08	**F**	.93	E	.99	E
6. Rye/Copper Hill & Newhall Ranch	.85	D	.89	D	.81	D	.89	D
7. McBean & Newhall Ranch	.80	C	1.15	**F**	.83	D	1.16	**F**
8. McBean & Magic Mountain	.87	D	1.21	**F**	.97	E	1.24	**F**
9. McBean & Valencia	.70	B	.89	D	.71	C	.94	E
10. Orchard Village & McBean	.91	E	1.23	**F**	.94	E	1.26	**F**
11. Orchard Village & Wiley Canyon	1.00	E	1.42	**F**	1.04	**F**	1.42	**F**
12. Valencia & Magic Mountain	.98	E	1.13	**F**	1.10	**F**	1.25	**F**
13. Bouquet Canyon & Plum Canyon	.80	C	.76	C	.80	C	.77	C
14. Bouquet Canyon & Newhall Ranch	.97	E	1.16	**F**	1.00	E	1.17	**F**
15. Bouquet Canyon & Soledad Canyon	.80	C	.99	E	.78	C	1.00	E
16. Railroad & Lyons[2]	.71	C	.94	E	.60	A	.83	D
17. Sierra Highway & Newhall	1.31	**F**	1.29	**F**	1.14	**F**	1.23	**F**
18. Whites Canyon & Soledad Canyon	.89	D	.92	E	.86	D	.91	E
19. Sierra Highway & Soledad Canyon	.90	D	1.23	**F**	.86	D	1.10	**F**
20. Commerce Center & Magic Mtn[1]	.76	C	.74	C	.76	C	.77	C
21. Pico Canyon & Valencia Boulevard[1]	.85	D	.98	E	.75	C	.81	D
22. Magic Mountain & Via Princessa[1]	.57	A	.80	C	.61	A	.81	D
23. Golden Valley & Via Princessa[1]	.91	E	.83	D	.88	D	.76	C

LOS in **Bold** exceeds performance criteria of LOS E.

[1]Future Intersection (ICUs calculated using Buildout Lanes)
[2]Includes future 4th Leg of Intersection (ICUs calculated using Buildout Lanes)

Number of Occurrences

LOS	Current GP	OVOV GP
A-C	12	12
D	9	10
E	10	9
F	15	15

Level of service ranges:						
	.00 - .60	A	.61 - .70	B	.71 - .80	C
	.81 - .90	D	.91 – 1.00	E	Above 1.00	F

Table 4-3: Buildout ICU Summary for Principal Intersections – Buildout Lanes

Buildout Intersection Lanes								
Intersection	Current GP				OVOV GP			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS
1. The Old Road & Rye Canyon	.70	B	1.00	E	.85	D	.99	E
2. The Old Road & Magic Mountain	.79	C	.84	D	.78	C	.86	D
3. The Old Road & Valencia	.85	D	.92	E	.84	D	.95	E
4. The Old Road & Stevenson Ranch	.68	B	.95	E	.65	B	.90	D
5. The Old Road & Pico Canyon	.96	E	1.07	**F**	.85	D	.97	E
6. Rye/Copper Hill & Newhall Ranch	.85	D	.89	D	.81	D	.89	D
7. McBean & Newhall Ranch	.80	C	.88	D	.83	D	.89	D
8. McBean & Magic Mountain	.75	C	.93	E	.77	C	.95	E
9. McBean & Valencia	.66	B	.85	D	.70	B	.87	D
10. Orchard Village & McBean	.79	C	.97	E	.78	C	.98	E
11. Orchard Village & Wiley Canyon	.74	C	.98	E	.78	C	.98	E
12. Valencia & Magic Mountain	.83	D	.95	E	.82	D	.86	D
13. Bouquet Canyon & Plum Canyon	.80	C	.76	C	.80	C	.77	C
14. Bouquet Canyon & Newhall Ranch	.84	D	.87	D	.86	D	.89	D
15. Bouquet Canyon & Soledad Canyon	.80	C	.90	D	.78	C	.90	D
16. Railroad & Lyons	.71	C	.94	E	.60	A	.83	D
17. Sierra Highway & Newhall	.99	E	.99	E	.86	D	.93	E
18. Whites Canyon & Soledad Canyon	.80	C	.92	E	.80	C	.90	D
19. Sierra Highway & Soledad Canyon	.88	D	.88	D	.86	D	.89	D
20. Commerce Center & Magic Mtn[1]	.76	C	.74	C	.76	C	.77	C
21. Pico Canyon & Valencia Boulevard[1]	.85	D	.98	E	.75	C	.81	D
22. Magic Mountain & Via Princessa[1]	.57	A	.80	C	.61	B	.81	D
23. Golden Valley & Via Princessa[1]	.91	E	.83	D	.88	D	.76	C

LOS in **Bold** exceeds performance criteria of LOS E.

[1]Future Intersection

Number of Occurrences

LOS	Current GP	OVOV GP
A-C	17	16
D	14	23
E	14	7
F	1	0

Level of service ranges:						
	.00 - .60	A	.61 - .70	B	.71 - .80	C
	.81 - .90	D	.91 – 1.00	E	Above 1.00	F

Descriptions of the roadway and intersection improvements needed to build out the proposed Highway Plan are provided in the following Section.

4.2.1 Arterial Roadway Segments

Section 1.2.1 discusses the Performance Criteria for Arterial Streets and Intersections used for this analysis, and that the maximum acceptable LOS on arterial roads within the OVOV planning area is LOS E. The traffic model forecasts indicate that the OVOV land use buildout conditions exceed LOS E (i.e., LOS F conditions) for the following five roadway segments:

- Bouquet Canyon Road between Newhall Ranch Road and Soledad Canyon Road (#18)
- McBean Parkway between Avenue Scott and Creekside Road (#114)
- Valencia Boulevard between Creekside Road and Magic Mountain Parkway (#270)
- Valencia Boulevard between Cinema Drive and Creekside Road (#271)
- Via Princessa between Santa Clarita Parkway and Golden Valley Road (#278)

In comparison, traffic model forecasts for the current City General Plan/County Area Plan buildout conditions indicate that LOS E is exceeded at the following 10 roadway segments:

- Bouquet Canyon Road between Newhall Ranch Road and Soledad Canyon Road (#18)
- Golden Valley Road between Via Princessa and Sierra Highway (#63)
- McBean Parkway between Avenue Scott and Creekside Road (#114)
- McBean Parkway between the I-5 freeway and Rockwell Canyon Road (#120)
- Newhall Avenue between Sierra Highway and SR-14 freeway (#134)
- Valencia Boulevard between Pico Canyon Road and Magic Mountain Parkway (West) (#258)
- Valencia Boulevard between Creekside Road and Magic Mountain Parkway (#270)
- Valencia Boulevard between Cinema Drive and Creekside Road (#271)
- Via Princessa between Santa Clarita Parkway and Golden Valley Road (#278)
- Via Princessa between Whites Canyon Road and Sierra Highway (#281)

In total, the proposed OVOV land uses result in five fewer LOS F roadway segments in comparison to the current City General Plan/County Area Plan traffic forecasts. In each case, the deficient locations with the proposed OVOV land uses are shown to be otherwise forecast as LOS F based

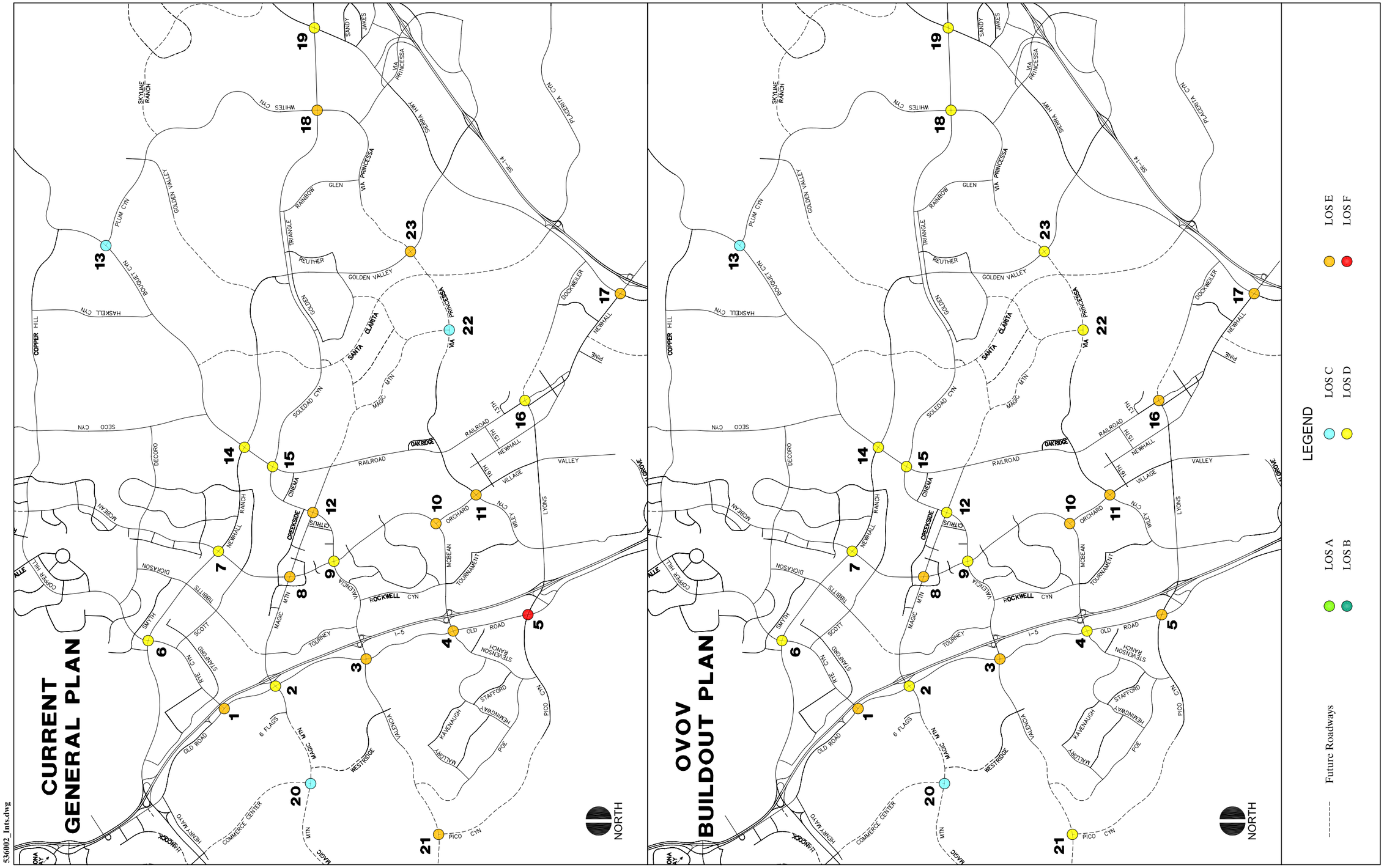
on the current City General Plan/County Area Plan.

4.2.2 Arterial Intersections

Intersection LOS estimates for the proposed OVOV land uses and for the current City General Plan/County Area Plan, for both existing and future intersection geometry, was presented in the previously referenced Table 4-2 and Table 4-3. The forecasts indicate multiple deficiencies based on the existing intersection geometry. Intersection improvements that are consistent with the proposed Highway Plan, details of which are provided in the following Section, result in conditions of LOS E or better for the proposed OVOV land uses at all principal intersections. In comparison, the current City General Plan/County Area Plan results in LOS F conditions at one principal intersection. An illustration of intersection LOS conditions based on both the proposed OVOV land uses and the current City General Plan/County Area Plan is provided in Figure 4-7. Overall, intersection operations are shown to improve with the proposed OVOV land uses in comparison to forecast conditions based on the current City General Plan/County Area Plan.

Both the City and the County have specific requirements regarding the LOS of intersections outlined in their traffic impact study guidelines. Each say that a change in ICU value of .01 or more for LOS E and F conditions, or a change of .02 or more for LOS D conditions, represents a significant impact at the individual project level. Furthermore, the County also says that a change of .04 or more for LOS C conditions represents a significant impact at the individual project level, as stated in the current Traffic Impact Analysis Guidelines of the County Department of Public Works. While not applied for long-range planning studies such as this, these guidelines provide an indication of the significant impacts to be expected as the OVOV area builds out over time.

Each of the principal intersections evaluated in this study, with the exception of Bouquet Canyon Road at Plum Canyon Road, are shown to exceed the significant impact criteria noted above when compared to existing conditions. As such, significant impacts are likely to be identified as part of the future project level impact studies that will be prepared as the Valley builds out in accordance with the proposed OVOV land uses. Mitigation measures beyond the future lane configurations identified in this study are likely not feasible due to right-of-way constraints. However, with the proposed OVOV land uses no intersection is forecast to exceed LOS E. In comparison, one intersection is forecast to exceed LOS E based on traffic model forecasts for the current City General Plan/County Area Plan.


CURRENT GENERAL PLAN
OVOV BUILDOUT PLAN
LEGEND
LOS A
LOS B
LOS C
LOS D
LOS E
LOS F
Future Roadways
NORTH
536002_Ints.dwg

4.3 FUTURE IMPROVEMENTS

Roadway improvements in the form of roadway widening and intersection improvements will be needed to build out the proposed Highway Plan. Table 4-4 lists the improvements needed to implement the recommended Highway Plan as illustrated in the previously referenced Figure 3-2. Table 4-5 summarizes the corresponding intersection lane improvements needed to achieve conditions of LOS E or better.

4.4 FREEWAY ANALYSIS

A planning level analysis has been prepared for select freeway segments within the OVOV area. The purpose of the analysis is to compare conditions based on the proposed OVOV land uses to traffic forecasts based on the current City General Plan/County Area Plan.

4.4.1 I-5 Freeway

The I-5 freeway is listed as a "high priority corridor" on the National Highway System (NHS). The corridor serves inter-regional travel in the north-south direction from California's most southern border with Mexico to Washington's most northern border with Canada. Within the OVOV area, the I-5 freeway is classified as an urban interstate (see Reference 4 in Section 1.5).

The I-5 freeway generally consists of four mix-flow lanes in each direction through the OVOV area. Through the SR-14 interchange area, the I-5 freeway consists of three mix-flow lanes in each direction along with two dedicated truck bypass lanes which are separated from the mainline lanes. Several interchanges provide access to the freeway as described in Section 2.1. A truck weigh station facility operated by the California Highway Patrol is located on the northbound side of the I-5 freeway just south of the SR-126 interchange. High Occupancy Vehicle (HOV) lanes have recently been constructed just south of the Santa Clarita Valley.

Caltrans planning documents have identified the I-5 freeway through this area as needing additional lanes to accommodate existing and anticipated increases in traffic volumes. Caltrans District 7 currently has a project to add additional lanes to the I-5 freeway between the SR-14 interchange and the Parker Road interchange, a distance of approximately 13.6 miles (see Reference 5 in Section 1.5). The project will extend the existing HOV lanes from the SR-14 interchange to just south of the Parker Road interchange, incorporate truck climbing lanes from the SR-14 interchange to the Pico Canyon

Table 4-4: Roadway Improvements to Build-Out the Highway Plan

Roadway/Segment	Improvement	Comments
Agua Dulce Canyon Road		
Between Sierra Highway and Escondido Canyon Road	Widen roadway from 2 lanes to a 4 lane Secondary Highway	
Between Escondido Canyon Road and Davenport Road	Construct new 4 lane Secondary Highway	Gap closure segment
Between Davenport Road and Soledad Canyon Road	Widen roadway from 2 lanes to a 4 lane Secondary Highway	
Avenue Scott		
Between Rye Canyon Road and Avenue Tibbitts	Re-stripe roadway from 4 lanes to 6 lanes	
Avenue Tibbitts		
Between Avenue Scott and Avenue Hopkins	Re-stripe roadway from 4 lanes to 6 lanes	
Between Avenue Hopkins and Magic Mountain Parkway	Construct new 6 lane Major Highway	Includes new bridge over the Santa Clara River
Bouquet Canyon Road		
Between Angeles National Forest and Plum Canyon Road	Widen roadway from 2 lanes to a 4 lane Secondary Highway	
Between Plum Canyon and future Santa Clarita Parkway	Re-stripe roadway from 4 lanes to 6 lanes	Will lose the existing Class II bike lane due to re-striping
Between future Santa Clarita Parkway and Seco Canyon Road	Re-stripe roadway from 5 lanes to 6 lanes	Will lose the existing Class II bike lane due to re-striping
Between Seco Canyon Road and Espuella Drive	Widen roadway from 6 lanes to an 8 lane Major Highway	Includes bridge widening
Between Soledad Canyon Road and Magic Mountain Parkway	Re-stripe roadway from 4 lanes to 6 lanes	
Castaic Road		
Between Lake Hughes Road and Ridge Route Road	Re-stripe roadway from 4 lanes to 6 lanes	
Commerce Center Drive		
Between Henry Mayo Drive and Magic Mountain Parkway	Construct new 6 lane Major Highway	Includes new bridge over the Santa Clara River
Copper Hill Drive		
Between Avenida Rancho Tesoro and San Francisquito Creek Bridge	Re-stripe roadway from 4 lanes to 6 lanes	
Between San Francisquito Creek Bridge and McBean Parkway	Widen roadway from 4 lanes to a 6 lane Major Highway	Includes widening bridge over the San Francisquito Creek
Davenport Road		
Between Sierra Highway and Agua Dulce Canyon Road	Widen roadway from 2 lanes to a 4 lane Secondary Highway	
Dockweiler Drive		
Between Railroad Avenue and Leonard Tree Lane	Construct new 4 lane Secondary Highway	
Between Leonard Tree Lane and Ivy Lane	Implement traffic calming measures with 1 lane in each direction, re-stripe roadway from 2 lanes to 4 lanes when traffic volumes warrant	Will lose the existing on-street parking if re-striped to 4 lanes

(Continued)

Table 4-4: Roadway Improvements to Build-Out the Highway Plan (Continued)

Roadway/Segment	Improvement	Comments
Escondido Canyon Road		
east of Agua Dulce Canyon Road	Widen roadway from 2 lanes to a 4 lane Secondary Highway	
Golden Valley Road		
Between Plum Canyon Road and Dorothy Street	Re-stripe roadway from 2 lanes to 4 lanes	
Between Dorothy Street and Newhall Ranch Road	Construct new 4 lane Secondary Highway	
Between Valley Center Drive and Center Pointe Parkway	Re-stripe roadway from 4 lanes to 6 lanes	
Between Center Pointe Parkway and Sierra Highway	Widen roadway from 4 lanes to a 6 lane Major Highway	
Haskell Canyon Road		
Between Copper Hill Drive and Grovepark Drive/Ridgegrove Drive	Re-stripe roadway from 2 lanes to 4 lanes	
Henry Mayo Drive		
Between Commerce Center Drive and The Old Road	Widen roadway from 2 lanes to a 4 lane Parkway	
Lake Hughes Road		
Between I-5 freeway and Castaic Road	Re-stripe roadway from 4 lanes to 6 lanes	
Long Canyon Road (future)		
Between Chiquito Canyon Road and SR-126	Construct new 4 lane Secondary Highway	
Between SR-126 and Valencia Boulevard	Construct new 6 lane Major Highway	Includes new bridge over the Santa Clara River
Lost Canyon Road		
Between Sand Canyon Road and La Veda Avenue	Widen roadway from 2 lanes to a 4 lane Secondary Highway	
Between La Veda Avenue and Jakes Way	Construct new 4 lane Secondary Highway	
Between Jakes Way and railroad bridge	Construct new 6 lane Major Highway	
Between railroad bridge and Via Princessa	Re-stripe roadway from 4 lanes to 6 lanes	
Lyons Avenue		
Between Wiley Canyon Road and Railroad Avenue	Re-stripe roadway from 4 lanes to 6 lanes	Will lose the existing on-street parking due to re-striping

(Continued)

Table 4-4: Roadway Improvements to Build-Out the Highway Plan (Continued)

Roadway/Segment	Improvement	Comments
Magic Mountain Parkway		
Between Long Canyon Road and Commerce Center Drive	Construct new 4 lane Secondary Highway	
Between Commerce Center Drive and Westridge Parkway	Construct new 6 lane Major Highway	
Between Westridge Parkway and Six Flags Magic Mountain	Construct new 8 lane Major Highway	
Between Six Flags Magic Mountain and I-5 freeway	Widen roadway from 4 lanes to an 8 lane Major Highway	
Between I-5 freeway and Auto Center Drive	Re-stripe roadway from 6 lanes to 8 lanes	
Between Auto Center Drive and Valencia Boulevard	Widen roadway from 4 lanes to an 8 lane Major Highway	
Between Valencia Boulevard and Railroad Avenue	Re-stripe roadway from 4 lanes to 6 lanes	
Between Railroad Avenue and Via Princessa	Construct new 6 lane Major Highway	
McBean Parkway		
Between San Francisquito Canyon Road and Copper Hill Drive	Construct new 2 lane Limited Secondary Highway	
Between Avenue Scott and Creekside Road	Widen roadway from 6 lanes to an 8 lane Major Highway	Includes widening bridge over the Santa Clara River
Between Magic Mountain Parkway and Valencia	Re-stripe roadway from 6 lanes to 8 lanes	
Newhall Ranch Road		
Between Rye Canyon Road and Avenue Tibbitts	Widen roadway from 4 lanes to an 8 lane Major Highway	
Between Avenue Tibbitts and McBean Parkway	Widen roadway from 6 lanes to an 8 lane Major Highway	Includes widening bridge over the San Francisquito Creek
Between McBean Parkway and Bouquet Canyon Road	Re-stripe roadway from 7 lanes to 8 lanes	
Between Bouquet Canyon Road and Santa Clarita Parkway	Re-stripe roadway from 4 lanes to 6 lanes	
Between Santa Clarita Parkway and Golden Valley Road	Construct new 6 lane Major Highway	
Newhall Avenue		
Between Lyons Avenue and Railroad Avenue	Re-stripe roadway from 2 lanes to 4 lanes	Will lose the existing on-street parking due to re-striping

(Continued)

Table 4-4: Roadway Improvements to Build-Out the Highway Plan (Continued)

Roadway/Segment	Improvement	Comments
The Old Road		
north of Lake Hughes Road	Re-stripe roadway from 2 lanes to 4 lanes	
Between Lake Hughes Road and Sedona Way	Widen roadway from 2 lanes to a 4 lane Secondary Highway	
Between Hasley Canyon Road and I-5 SB Ramps at Rye Canyon Road	Widen roadway from 4 lanes to a 6 lane Major Highway	
Between I-5 SB Ramps at Rye Canyon Road and Rye Canyon Road	Re-stripe roadway from 4 lanes to 6 lanes	
Between Rye Canyon Road and Magic Mountain Parkway	Widen roadway from 4 lanes to a 6 lane Major Highway	Includes widening bridge over the Santa Clara River
Between McBean Parkway and Lyons Avenue	Re-stripe roadway from 4 lanes to 6 lanes	
Between Sagecrest Circle (South) and Calgrove Boulevard	Widen roadway from 2 lanes to a 4 lane Secondary Highway	
Between Calgrove Boulevard and Sierra Highway	Widen roadway from 4 lanes to a 6 lane Major Highway	
Orchard Village Road		
Between McBean Parkway and Lyons Avenue	Widen roadway from 4 lanes to a 6 lane Major Highway	
Parker Road		
Between The Old Road and I-5 freeway	Widen roadway from 2 lanes to a 6 lane Major Highway	
Pico Canyon Road		
Between Valencia Boulevard and Whispering Oaks Road	Construct new 6 lane Major Highway	
Between Whispering Oaks Road and I-5 freeway	Re-stripe roadway from 4 lanes to 6 lanes	
Plum Canyon Road		
Between Bouquet Canyon Road and Golden Valley Road	Re-stripe roadway from 4 lanes to 6 lanes	
Potrero Canyon Road (future)		
Between SR-126 and Long Canyon Road	Construct new 4 lane Secondary Highway	Includes new bridge over the Santa Clara River
Railroad Avenue		
Between Magic Mountain Parkway and Lyons Avenue	Re-stripe roadway from 4 lanes to 6 lanes	
Ridge Route Road		
Between I-5 freeway and Castaic Road	Widen roadway from 2 lanes to a 6 lane Major Highway	
Sand Canyon Road		
Between Sierra Highway and Soledad Canyon Road	Widen roadway from 2 lanes to a 4 lane Secondary Highway	
Between SR-14 freeway and Lost Canyon Road	Widen roadway from 2 lanes to a 6 lane Major Highway	Includes widening bridge over the Santa Clara River

(Continued)

Table 4-4: Roadway Improvements to Build-Out the Highway Plan (Continued)

Roadway/Segment	Improvement	Comments
Santa Clarita Parkway (future)		
Between Bouquet Canyon Road and Sierra Highway	Construct new 6 lane Major Highway	Includes new bridge over the Santa Clara River
Shadow Pines Boulevard/Tick Canyon Road		
Between Grandifloras Road and Davenport Road	Construct new 2 lane Limited Secondary Highway	
Sierra Highway		
east of Agua Dulce Canyon Road	Widen roadway from 2 lanes to a 6 lane Major Highway	
Between Agua Dulce Canyon Road and Vasquez Canyon Road	Widen roadway from 2 lanes to a 6 lane Major Highway	
Between Vasquez Canyon and Soledad Canyon	Widen roadway from 4 lanes to a 6 lane Major Highway	
Between Via Princessa and Newhall Avenue	Re-stripe roadway from 4 lanes to 6 lanes	
Between Newhall Avenue and The Old Road	Widen roadway from 4 lanes to a 6 lane Major Highway	
Skyline Ranch Road (future)		
Between Whites Canyon Road and Sierra Highway	Construct new Secondary Highway	Will use an alternative section as approved for the development project through which this roadway passes
Sloan Canyon Road		
Between The Old Road and Parker Road	Widen roadway from 2 lanes to a 4 lane Secondary Highway	
Between Parker Road and Quail Valley Road	Re-stripe roadway from 2 lanes to 4 lanes	
Between Hillcrest Parkway and Hasley Canyon Road	Construct new 2 lane Limited Secondary Highway	
Soledad Canyon Road		
Between River Circle and SR-14 freeway	Re-stripe roadway from 4 lanes to 6 lanes	Will lose the existing Class II bike lane due to re-striping
east of SR-14 freeway	Widen roadway from 2 lanes to a 6 lane Major Highway	
Stevenson Ranch Parkway		
Between The Old Road and Pico Canyon Road	Re-stripe roadway from 4 lanes to 6 lanes	Will lose the existing Class II bike lane due to re-striping
Valencia Boulevard		
Between Long Canyon Road and existing Valencia Boulevard terminus just west of Boulder Crest Drive	Construct new 6 lane Major Highway	
Between I-5 freeway and McBean Parkway	Reconstruct roadway from 7 lanes to an 8 lane Major Highway	

(Continued)

Table 4-4: Roadway Improvements to Build-Out the Highway Plan (Continued)

Roadway/Segment	Improvement	Comments
Via Princessa		
Between existing Via Princessa terminus just east of Claibourne Court and existing Via Princessa terminus just west of Sheldon Avenue	Construct new 6 lane Major Highway	Gap closure segment
Between Sheldon Avenue and Rainbow Glen Drive	Widen roadway from 2 lanes to a 6 lane Major Highway	
Between Rainbow Glen Drive and Whites Canyon Road	Re-stripe roadway from 4 lanes to 6 lanes	
Between SR-14 freeway and Lost Canyon Road	Re-stripe roadway from 4 lanes to 6 lanes	
Whites Canyon Road		
Between Ashboro Drive and Soledad Canyon Road	Re-stripe roadway from 4 lanes to 6 lanes	
Wiley Canyon Road		
Bridge over Railroad Avenue	Widen roadway from 4 lanes to a 6 lane Major Highway	Includes bridge widening
Between bridge over Railroad Avenue and Lyons Avenue	Re-stripe roadway from 4 lanes to 6 lanes	Will lose the existing Class II bike lane due to re-striping
Between Wabuska Street and Calgrove Boulevard	Widen roadway from 2 lanes to a 4 lane Secondary Highway	

Table 4-5: Intersection Improvements to Build-Out the Highway Plan

Intersection	Improvement	Comments
1. The Old Road & Rye Canyon Road	Add 2nd & 3rd northbound through lanes Add 2nd southbound left-turn lane Add 3rd southbound through lane Add 2nd & 3rd westbound left-turn lanes	County intersection
2. The Old Road & Magic Mountain Parkway	Add 5th eastbound through lane Convert 3rd southbound through lane to a shared through/right-turn lane	County intersection
3. The Old Road & Valencia Boulevard	Modify traffic signal to provide eastbound right-turn overlap phasing	County intersection
4. The Old Road & Stevenson Ranch Parkway	Add 2nd southbound left-turn lane Add 1st westbound right-turn lane Modify traffic signal to provide northbound right-turn overlap phasing	County intersection
5. The Old Road & Pico Canyon Road	Add 2nd northbound left-turn lane Convert southbound right-turn lane to 2nd southbound through lane Convert westbound right-turn lane to 3rd westbound through lane	County intersection
6. Rye Canyon Road/Copper Hill Road & Newhall Ranch Road	None	City intersection; Existing geometry sufficient for build-out conditions.
7. McBean Parkway & Newhall Ranch Road	Add 2nd northbound right-turn lane Add 4th westbound through lane	City intersection
8. McBean Parkway & Magic Mountain Parkway	Add 4th northbound through lane Add 3rd eastbound through lane Modify traffic signal to provide westbound right-turn overlap phasing	City intersection
9. McBean Parkway & Valencia Boulevard	Convert 1st northbound right-turn lane to 4th northbound through lane Add 4th westbound through lane Modify traffic signal to provide northbound right-turn overlap phasing	City intersection; Will require ROW on north side of Valencia, east of McBean, to relocate the existing westbound right-turn lane.
10. Orchard Village Road & McBean Parkway	Add 1st eastbound right-turn lane Add 1st westbound right-turn lane Convert 3rd eastbound through lane to a shared through/right-turn lane	City intersection; North leg (hospital driveway) to be improved by site development Will require ROW from HMNMH site to realign McBean.

(Continued)

Table 4-5: Intersection Improvements to Build-Out the Highway Plan (Continued)

Intersection	Improvement	Comments
11. Orchard Village Road & Wiley Canyon Road	Add 3rd northbound through lane Convert 1st southbound through lane to 2nd southbound left-turn lane Convert southbound right-turn lane to 2nd southbound through lane (shared through/right) Convert 2nd eastbound left-turn lane to 3rd eastbound through lane Convert westbound right-turn lane to 3rd westbound through lane (shared through/right)	City intersection; No ROW required but placing new through lanes on Orchard Village adjacent to the curb (e.g., north of Wiley Cyn Road) requires removing the trees adjacent to the curb lane. Also requires removal of Bike Lane from westbound Wiley Cyn Road.
12. Valencia Boulevard & Magic Mountain Parkway	Add 1st northbound right-turn lane Add 3rd eastbound through lane Add 2nd westbound left-turn lane Convert westbound right-turn lane to 3rd westbound through lane (shared through/right)	City intersection; Will require ROW on south side of Magic Mtn., east and west of Valencia, and on east side of Valencia, south of Magic Mtn.
13. Bouquet Canyon Road & Plum Canyon Road	None	City intersection; Existing geometry sufficient for build-out conditions.
14. Bouquet Canyon Road & Newhall Ranch Road	Add 2nd southbound left-turn lane Add 2nd southbound right-turn lane Convert 3rd eastbound left-turn lane to 3rd eastbound through lane Add 4th eastbound through lane Modify traffic signal to provide westbound right-turn overlap phasing	City intersection; Will require ROW on west side of Bouquet, north of Newhall Ranch, for the 2nd right-turn lane.
15. Bouquet Canyon Road & Soledad Canyon Road	Add 4th northbound through lane	City intersection; Will require ROW on east side of Bouquet, south of Soledad, to relocate the existing northbound right-turn lane.

(Continued)

Table 4-5: Intersection Improvements to Build-Out the Highway Plan (Continued)

Intersection	Improvement	Comments
16. Railroad Avenue & Lyons Avenue	Add 1st & 2nd southbound left-turn lanes Convert 2nd eastbound left-turn lane to a shared left/through lane Convert eastbound right-turn lane to a shared through/right-turn lane Add 1st westbound left-turn lane Add 1st & 2nd westbound through lanes Add 1st westbound right-turn lane	City intersection; Lanes per proposed Lyons Avenue at-grade rail crossing.
17. Sierra Highway & Newhall Avenue	Add 1st northbound right-turn lane Convert 2nd northbound through lane to a shared through/right-turn lane Add 2nd westbound left-turn lane (can remove existing westbound right-turn lane)	City intersection; Can remove the existing westbound right-turn lane. Will require ROW on east side of Sierra, south of Newhall.
18. Whites Canyon Road & Soledad Canyon Road	Convert northbound right-turn lane to 3rd northbound through lane (shared through/right) Convert southbound right-turn lane to 3rd southbound through lane (shared through/right)	City intersection; Will require ROW on west side of Whites Cyn, south of Soledad Cyn.
19. Sierra Highway & Soledad Canyon Road	Convert northbound right-turn lane to 3rd northbound through lane (shared through/right) Add 2nd southbound left-turn lane Convert southbound right-turn lane to 3rd southbound through lane (shared through/right) Convert eastbound right-turn lane to 3rd eastbound through lane (shared through/right)	City intersection; Will require ROW on east side of Sierra, north of Soledad Cyn.
20. Commerce Center Drive & Magic Mountain Parkway	Add 1st & 2nd southbound left-turn lanes Add 1st southbound right-turn lane Add 1st & 2nd eastbound left-turn lanes Add 1st, 2nd & 3rd eastbound through lanes Add 1st, 2nd & 3rd westbound through lanes Add 1st westbound free-flow right-turn lane	Future County intersection; Lanes subject to change pending the final development plans for this area.
21. Pico Canyon Road & Valencia Boulevard	Add 1st & 2nd northbound left-turn lanes Add 1st northbound right-turn lane Add 1st, 2nd & 3rd eastbound through lanes (3rd through is shared through/right) Add 1st westbound left-turn lane Add 1st, 2nd & 3rd westbound through lanes	Future County intersection; Lanes subject to change pending the final development plans for this area.

(Continued)

Table 4-5: Intersection Improvements to Build-Out the Highway Plan (Continued)

22. Magic Mountain Parkway & Via Princessa	Add 1st northbound left-turn lane Add 1st northbound through lane Add 1st northbound right-turn lane Add 1st & 2nd southbound left-turn lanes Add 1st southbound through lane Add 1st southbound right-turn lane Add 1st eastbound left-turn lane Add 1st, 2nd & 3rd eastbound through lanes (3rd through is shared through/right) Add 1st westbound left-turn lane Add 1st, 2nd & 3rd westbound through lanes Add 1st westbound free-flow right-turn lane	Future City intersection; Lanes subject to change pending the final development plans for this area.
23. Golden Valley Road & Via Princessa	Add 1st & 2nd northbound left-turn lane Add 3rd northbound through lane Add 1st northbound right-turn lane Add 1st & 2nd southbound left-turn lane Add 3rd southbound through lane Add 1st southbound right-turn lane Add 1st & 2nd eastbound left-turn lane Add 1st, 2nd & 3rd eastbound through lanes Add 1st & 2nd eastbound right-turn lanes Add 1st & 2nd westbound left-turn lanes Add 1st, 2nd & 3rd westbound through lanes Add 1st westbound right-turn lane	Future City intersection; Lanes subject to change pending the final development plans for this area.

Road/Lyons Avenue interchange, and construct and/or extend auxiliary lanes between interchanges at six locations. A Project Approval and Environmental Document (PA&ED) has recently been completed for this project, and funding for construction is identified in the Los Angeles County Metropolitan Transportation Agency (Metro) 2009 Long Range Transportation Plan.

4.4.2 SR-14 Freeway

The SR-14 freeway, in conjunction with US 395, is one of the four major north-south corridors serving California. The corridor connects the Eastern Sierra and Western Nevada regions to the Southern California region. The Caltrans "Interregional Transportation Strategic Plan" identifies the SR-14/US-395 corridor as a "High Emphasis - Focus Route" (see Reference 6 in Section 1.5). The SR-14 freeway is designated as a Super Truck Route (STR), and is also part of the Surface Transportation Assistance Act (STAA) truck network, which provides freeway access for oversized trucks. Within Caltrans District 7, the SR-14 freeway serves as a major commuter route between Antelope Valley communities such as the Cities of Palmdale and Lancaster and the Los Angeles area.

Within the OVOV area, the SR-14 freeway generally consists of three to six lanes in each direction, including one HOV lane in each direction. From the I-5 freeway to the Newhall Avenue interchange, there are five mix-flow lanes and one HOV lane in each direction; from the Newhall Avenue interchange to the Golden Valley Road interchange, there are three mix-flow lanes and one HOV lane in each direction; from the Golden Valley Road interchange to the Sierra Highway interchange, there are four mix-flow lanes and one HOV lane in each direction; from the Sierra Highway interchange to the Sand Canyon Road interchange, there are three mix-flow lanes and one HOV lane in each direction; from the Sand Canyon Road interchange to the Soledad Canyon Road interchange, there are two mix-flow lanes and one HOV lane in each direction; and from the Soledad Canyon Road interchange to the Escondido Canyon Road interchange, there are two to three mix-flow lanes and one HOV lane in each direction.

The North County Combined Highway Corridors Study (see Reference 7 in Section 1.5), a joint study sponsored in part by Metro, Caltrans, the County of Los Angeles, and the City of Santa Clarita, identified the SR-14 freeway through the OVOV area as needing additional lanes to accommodate existing and anticipated increases in traffic volumes. The study identified a short-range plan to complete the mainline to a minimum of three lanes in each direction, and a long-range plan to complete the mainline to four lanes in each direction between the Newhall Avenue interchange and the Sand Canyon

interchange, and to add a dedicated truck lane between the I-5 freeway and the Placerita Canyon Road interchange. The study also identified a short-range plan to convert the existing HOV lanes to a reversible HOV lane configuration that would provide three HOV lanes in the peak travel direction. However, subsequent planning efforts by Caltrans and Metro have focused on utilizing two conventional (i.e., non-reversible) HOV lanes in each direction in-lieu of reversible HOV lanes.

Caltrans is currently constructing HOV lane direct connectors between the existing SR-14 HOV lanes and the existing I-5 HOV lanes. This project is estimated to be completed by 2013.

4.4.3 Freeway Traffic Volumes and LOS

A summary of traffic volumes for ADT, a.m. peak hour, and p.m. peak hour conditions is provided in Table 4-6 for six key freeway segments within the OVOV area. The traffic forecasts include growth outside of the OVOV plan area based on regional traffic projections. Calculations of demand to capacity (D/C) ratios are provided in Appendix E, and the corresponding LOS is summarized in Table 4-7. The freeway LOS estimates are calculated based on both the existing number of freeway lanes and the planned future lanes. In the case of the I-5 freeway, the planned future lanes are based on the I-5 HOV and Truck Lane project discussed in Section 4.4.1. In the case of the SR-14 freeway, the planned future lanes are based on the short-range plan outlined in the Metro study discussed in Section 4.4.2.

The freeway LOS summarized in the previously referenced Table 4-7 indicates that with the proposed OVOV land uses, freeway conditions are the same or one level of service better than with the current City General Plan/County Area Plan. When the future freeway lanes are taken into account, deficiencies occur with the current City General Plan/County Area Plan on the SR-14 freeway in the peak direction (i.e., southbound in the a.m. peak hour and northbound in the p.m. peak hour). With the proposed OVOV land uses, deficiencies are still expected to occur, although to a lesser extent and at fewer segments due to lower freeway traffic volumes.

4.5 CONGESTION MANAGEMENT PROGRAM ANALYSIS

The Los Angeles County Congestion Management Program (CMP) (See Reference 8 in Section 1.5) states that only development projects are subject to the CMP Land Use Analysis Program and the CMP Transportation Impact Analysis. As such, a literal CMP analysis is not required for the General Plan/Area Plan update.

Table 4-6: Freeway Volume Summary

Segment	ADT	AM Peak Hour		PM Peak Hour	
		NB	SB	NB	SB
I-5 south of Parker Interchange					
Existing Conditions	110,000	1,860	2,190	3,570	3,070
Current GP	240,000	5,140	6,950	8,760	7,980
Proposed OVOV GP	239,000	4,090	6,770	8,770	7,640
I-5 south of Valencia Interchange					
Existing Conditions	179,000	5,430	5,310	6,050	6,420
Current GP	269,000	8,540	9,970	9,730	10,320
Proposed OVOV GP	259,000	7,860	8,200	9,190	10,300
I-5 north of SR-14 Interchange					
Existing Conditions	202,000	5,600	6,610	6,970	6,410
Current GP	308,000	8,710	10,430	10,530	10,800
Proposed OVOV GP	269,000	7,540	7,380	8,700	10,480
SR-14 south of Aqua Dulce Interchange					
Existing Conditions	110,000	1,970	5,580	5,130	2,810
Current GP	200,000	4,260	11,970	11,300	5,190
Proposed OVOV GP	158,000	2,700	11,780	10,590	3,350
SR-14 south of Sierra Highway Interchange					
Existing Conditions	152,000	2,510	7,090	7,500	3,380
Current GP	279,000	5,020	15,330	15,430	7,100
Proposed OVOV GP	217,000	3,900	14,350	13,580	5,150
SR-14 north of I-5 Interchange					
Existing Conditions	176,000	2,950	8,350	8,430	4,100
Current GP	316,000	6,320	16,170	16,250	8,490
Proposed OVOV GP	230,000	5,100	13,920	13,390	6,820

Table 4-7: Freeway Level of Service Summary

Segment	AM Peak Hour		PM Peak Hour	
	NB	SB	NB	SB
Existing Freeway Lanes				
I-5 south of Parker Interchange				
Existing Conditions	A	A	B	B
Current GP	C	D	**F**	E
Proposed OVOV GP	C	D	**F**	E
I-5 south of Valencia Interchange				
Existing Conditions	C	C	D	D
Current GP	**F**	**F**	**F**	**F**
Proposed OVOV GP	E	**F**	**F**	**F**
I-5 north of SR-14 Interchange				
Existing Conditions	A	**F**	D	E
Current GP	**F**	**F**	**F**	**F**
Proposed OVOV GP	E	**F**	**F**	**F**
SR-14 south of Aqua Dulce Interchange				
Existing Conditions	A	C	C	B
Current GP	C	**F**	**F**	C
Proposed OVOV GP	B	**F**	**F**	B
SR-14 south of Sierra Highway Interchange				
Existing Conditions	A	C	D	B
Current GP	B	**F**	**F**	C
Proposed OVOV GP	B	**F**	**F**	C
SR-14 north of I-5 Interchange				
Existing Conditions	A	C	C	B
Current GP	C	**F**	**F**	C
Proposed OVOV GP	B	**F**	**F**	C
Future Freeway Lanes				
I-5 south of Parker Interchange				
Current GP	C	C	D	D
Proposed OVOV GP	B	C	D	D
I-5 south of Valencia Interchange				
Current GP	D	E	E	E
Proposed OVOV GP	D	D	E	E
I-5 north of SR-14 Interchange				
Current GP	D	D	E	D
Proposed OVOV GP	C	C	D	D
SR-14 south of Aqua Dulce Interchange				
Current GP	B	**F**	**F**	C
Proposed OVOV GP	A	**F**	**F**	B
SR-14 south of Sierra Highway Interchange				
Current GP	B	**F**	**F**	C
Proposed OVOV GP	B	**F**	**F**	B
SR-14 north of I-5 Interchange				
Current GP	B	**F**	**F**	C
Proposed OVOV GP	B	E	E	B

LOS in **Bold** exceeds performance criteria of LOS E.

CMP roadways within the OVOV area consist of the following:

- I-5 Freeway
- SR-14 Freeway
- SR-126 Expressway
- Sierra Highway from Newhall Avenue to the SR-14 freeway at Red Rover Mine Road
- Magic Mountain Parkway from the I-5 freeway to Railroad Avenue
- Railroad Avenue/Newhall Avenue from Magic Mountain Parkway to the SR-14 freeway

Section 4.2 shows that each of the CMP arterial roadways achieves the CMP LOS target of LOS E or better with the proposed OVOV land uses. Section 4.4.3 shows that the I-5 freeway achieves the CMP LOS target of LOS E or better with the proposed OVOV land uses. The SR-14 freeway is anticipated to operate at LOS F conditions in the peak direction with either the current City General Plan/County Area Plan or with the proposed OVOV land uses. However, with the proposed OVOV land uses, traffic volumes on the SR-14 freeway are lower and there are fewer segments at LOS F than with the current City General Plan/County Area Plan.

4.6 GROUND TO PLAN ANALYSIS

This section presents a comparison of the proposed plan to existing conditions. Existing conditions are compared to the scenario previously presented in Section 4.2, which consists of the proposed land use plan along with the proposed Highway Plan. This comparison demonstrates the net impact of both the proposed land use and Highway Plan.

4.6.1 OVOV Land Use with the Proposed Highway Plan Network

A comparison of traffic forecasts based on the proposed OVOV plan (the proposed land uses along with the proposed highway network) to existing conditions is provided in Table 4-8. The table presents roadway segment V/C ratios and LOS values for each of the two scenarios. A comparable table for peak hour intersection conditions is provided in Table 4-9.

The previously referenced Table 4-8 shows that four of the five roadway segments that are at LOS F for existing conditions are forecast to operate at LOS E or better with the proposed OVOV plan.

Table 4-8: ADT V/C and LOS – Existing Conditions vs OVOV Buildout Conditions

Roadway Segment	Existing Conditions			OVOV GP With Highway Plan		
	Volume	V/C	LOS	Volume	V/C	LOS
1. Agua Dulce n/o Escondido Cyn	4,000	.22	A	8,000	.22	A
2. Agua Dulce n/o Davenport	3,000	.17	A	13,000	.36	A
4. Agua Dulce s/o SR-14	<500	.00	A	3,000	.08	A
6. Ave Scott s/o Stanford	14,000	.39	A	37,000	.69	B
8. Ave Stanford s/o Vanderbilt	5,000	.14	A	17,000	.47	A
10. Ave Stanford s/o Rye Cyn	9,000	.25	A	16,000	.44	A
11. Bouquet Cyn n/o Vasquez	4,000	.22	A	6,000	.17	A
14. Bouquet Cyn e/o Haskell	25,000	.69	B	32,000	.59	A
15. Bouquet Cyn w/o Haskell	39,000	1.08	**F**	49,000	.91	E
16. Bouquet Cyn e/o Seco	43,000	.96	E	54,000	1.00	E
17. Bouquet Cyn w/o Seco	48,000	.89	D	53,000	.74	C
18. Bouquet Cyn s/o Newhall Ranch	50,000	.69	B	77,000	1.07	**F**
20. Bouquet Cyn n/o Magic Mtn	36,000	1.00	E	54,000	1.00	E
25. Castaic n/o Lake Hughes	11,000	.31	A	5,000	.14	A
28. Chiquito Cyn s/o San Martinez Cyn	1,000	.06	A	6,000	.33	A
31. Commerce Center s/o Franklin	16,000	.30	A	39,000	.72	C
32. Commerce Center n/o SR-126	11,000	.20	A	43,000	.80	C
35. Copper Hill n/o Newhall Ranch	35,000	.49	A	54,000	.75	C
39. Copper Hill e/o McBean	35,000	.97	E	41,000	.76	C
43. Davenport e/o Sierra Hwy	2,000	.11	A	6,000	.17	A
44. Davenport w/o Agua Dulce	2,000	.11	A	3,000	.08	A
46. Decoro e/o Dickason	20,000	.56	A	14,000	.39	A
48. Decoro w/o Hillsborough	16,000	.44	A	17,000	.47	A
51. Dickason n/o Newhall Ranch	13,000	.36	A	21,000	.39	A
54. Escondido e/o Agua Dulce	3,000	.17	A	5,000	.14	A
55. Franklin e/o Wolcott Way	<500	.00	A	8,000	.53	A
56. Franklin w/o Commerce Center	6,000	.17	A	11,000	.31	A
62. Golden Valley s/o Centre Point	19,000	.53	A	39,000	.72	C

(Continued)

Table 4-8: ADT V/C and LOS – Existing Conditions vs OVOV Buildout Conditions (Continued)

Roadway Segment	Existing Conditions			OVOV GP With Highway Plan		
	Volume	V/C	LOS	Volume	V/C	LOS
64. Golden Valley e/o Sierra Hwy	14,000	.26	A	36,000	.67	B
68. Hasley Cyn w/o Del Valle	3,000	.17	A	13,000	.72	C
69. Hasley Cyn w/o Commerce Center	7,000	.19	A	14,000	.39	A
70. Hasley Cyn w/o The Old Road	17,000	.31	A	38,000	.70	B
71. Hasley Cyn w/o I-5	11,000	.31	A	34,000	.63	B
74. Hillcrest w/o The Old Road	9,000	.25	A	17,000	.47	A
75. Jakes Way e/o Canyon Park	6,000	.33	A	12,000	.67	B
77. Lake Hughes e/o Castaic	9,000	.25	A	37,000	.69	B
78. Lake Hughes e/o Ridge Route	2,000	.11	A	7,000	.39	A
85. Lost Cyn n/o Canyon Park	6,000	.17	A	16,000	.30	A
86. Lost Cyn n/o Via Princessa	9,000	.25	A	21,000	.39	A
87. Lost Cyn s/o Via Princessa	2,000	.11	A	11,000	.31	A
92. Lyons e/o Orchard Village	47,000	1.31	**F**	52,000	.96	E
93. Lyons w/o Main Street	20,000	.56	A	24,000	.44	A
105. Magic Mtn e/o Valencia	16,000	.44	A	54,000	1.00	E
109. McBean s/o Copper Hill	21,000	.39	A	27,000	.50	A
112. McBean n/o Newhall Ranch	39,000	.72	C	48,000	.89	D
113. McBean s/o Newhall Ranch	50,000	.69	B	58,000	.81	D
114. McBean s/o Ave Scott	58,000	1.07	**F**	77,000	1.07	**F**
117. McBean s/o Valencia	35,000	.65	B	54,000	1.00	E
118. McBean n/o Orchard Village	40,000	.74	C	43,000	.80	C
119. McBean e/o Rockwell Cyn	24,000	.44	A	44,000	.81	D
120. McBean w/o Rockwell Cyn	32,000	.59	A	53,000	.98	E
124. Newhall Ranch e/o Rye Cyn	11,000	.15	A	49,000	.68	B
126. Newhall Ranch e/o McBean	32,000	.44	A	68,000	.94	E
127. Newhall Ranch w/o Bouquet Cyn	37,000	.51	A	69,000	.96	E
128. Newhall Ranch e/o Bouquet Cyn	25,000	.69	B	46,000	.85	D
131. Newhall s/o Lyons	22,000	1.22	**F**	27,000	.75	C

(Continued)

Table 4-8: ADT V/C and LOS – Existing Conditions vs OVOV Buildout Conditions (Continued)

Roadway Segment	Existing Conditions			OVOV GP With Highway Plan		
	Volume	V/C	LOS	Volume	V/C	LOS
132. Newhall n/o Valle Oro	44,000	.81	D	33,000	.61	B
133. Newhall n/o Sierra Hwy	41,000	.76	C	40,000	.74	C
136. Orchard Village s/o McBean	30,000	.83	D	54,000	1.00	E
137. Orchard Village s/o Wiley Cyn	29,000	.81	D	44,000	.81	D
138. Orchard Village n/o Lyons	21,000	.58	A	34,000	.63	B
146. Placerita Cyn e/o SR-14	4,000	.22	A	4,000	.11	A
150. Poe s/o Mallory	1,000	.03	A	3,000	.08	A
151. Poe w/o Stevenson Ranch	8,000	.22	A	14,000	.39	A
155. Railroad s/o Oak Ridge	33,000	.92	E	40,000	.74	C
157. Railroad n/o Lyons	34,000	.94	E	36,000	.67	B
161. Ridge Route n/o Lake Hughes	5,000	.09	A	35,000	.65	B
166. Rockwell Cyn n/o McBean	8,000	.22	A	23,000	.64	B
168. Rye Cyn w/o Ave Scott	41,000	.76	C	48,000	.89	D
169. Rye Cyn e/o The Old Road	47,000	.87	D	58,000	.92	E
172. San Martinez Grande Cyn n/o SR-126	<500	.00	A	5,000	.14	A
174. Sand Cyn n/o Soledad Cyn	7,000	.39	A	14,000	.39	A
175. Sand Cyn s/o Soledad Cyn	27,000	.75	C	25,000	.46	A
176. Sand Cyn s/o SR-14	11,000	.61	B	26,000	.48	A
177. Sand Cyn s/o Lost Cyn	9,000	.50	A	14,000	.78	C
192. Sierra Hwy n/o Vasquez Cyn	11,000	.61	B	16,000	.30	A
195. Sierra Hwy n/o Soledad Cyn	23,000	.64	B	52,000	.96	E
196. Sierra Hwy s/o Soledad Cyn	36,000	.67	B	36,000	.67	B
198. Sierra Hwy s/o Via Princessa	24,000	.67	B	30,000	.56	A
201. Sierra Hwy n/o Newhall	19,000	.53	A	23,000	.43	A
211. Soledad Cyn e/o Bouquet Cyn	47,000	.87	D	45,000	.83	D
212. Soledad Cyn w/o Golden Valley	45,000	.83	D	38,000	.70	B
213. Soledad Cyn e/o Golden Valley	37,000	.69	B	50,000	.93	E
215. Soledad Cyn w/o Whites Cyn	44,000	.81	D	38,000	.70	B

(Continued)

Table 4-8: ADT V/C and LOS – Existing Conditions vs OVOV Buildout Conditions (Continued)

Roadway Segment	Existing Conditions			OVOV GP With Highway Plan		
	Volume	V/C	LOS	Volume	V/C	LOS
216. Soledad Cyn e/o Whites Cyn	43,000	.80	C	44,000	.81	D
217. Soledad Cyn e/o Sierra Hwy	30,000	.56	A	34,000	.63	B
220. Soledad Cyn e/o SR-14 (at Sand Cyn)	17,000	.47	A	18,000	.33	A
221. Soledad Cyn w/o Shadow Pines	11,000	.31	A	10,000	.19	A
222. Soledad Cyn e/o Shadow Pines	5,000	.14	A	17,000	.31	A
223. Soledad Cyn e/o SR-14	2,000	.11	A	10,000	.28	A
224. Soledad Cyn w/o Agua Dulce	2,000	.11	A	4,000	.11	A
225. Soledad Cyn e/o Agua Dulce	2,000	.11	A	3,000	.08	A
227. SR-126 w/o San Martinez Grande Cyn	24,000	.55	A	33,000	.75	C
228. SR-126 w/o Chiquito Cyn/Long Cyn	24,000	.55	A	38,000	.86	D
229. SR-126 w/o Wolcott	24,000	.55	A	59,000	.89	D
230. SR-126 w/o Commerce Center	25,000	.57	A	66,000	.75	C
231. SR-126 w/o I-5	34,000	.52	A	75,000	.85	D
239. The Old Road n/o Sedona Way	15,000	.83	D	23,000	.64	B
242. The Old Road n/o Biscailuiz	10,000	.56	A	18,000	.33	A
245. The Old Road s/o Henry Mayo	15,000	.42	A	16,000	.30	A
247. The Old Road n/o Magic Mtn	31,000	.86	D	52,000	.96	E
248. The Old Road s/o Magic Mtn	15,000	.42	A	30,000	.56	A
254. Tibbitts s/o Newhall Ranch	11,000	.20	A	34,000	.63	B
262. Valencia w/o The Old Road	16,000	.30	A	61,000	.97	E
266. Valencia w/o McBean	48,000	.76	C	61,000	.85	D
271. Valencia s/o Cinema	54,000	1.00	E	59,000	1.09	**F**
273. Valley s/o Lyons	2,000	.06	A	11,000	.31	A
274. Vasquez Cyn e/o Bouquet Cyn	7,000	.39	A	6,000	.33	A
275. Vasquez Cyn w/o Sierra Hwy	8,000	.44	A	10,000	.56	A
283. Via Princessa n/o Lost Cyn	13,000	.29	A	24,000	.44	A
288. Whites Cyn n/o Soledad	39,000	1.08	**F**	42,000	.78	C

(Continued)

Table 4-8: ADT V/C and LOS – Existing Conditions vs OVOV Buildout Conditions (Continued)

Roadway Segment	Existing Conditions			OVOV GP With Highway Plan		
	Volume	V/C	LOS	Volume	V/C	LOS
289. Whites Cyn s/o Soledad	32,000	.59	A	48,000	.89	D
290. Wiley Cyn e/o Orchard Village	11,000	.31	A	42,000	.78	C
294. Wiley Cyn n/o Calgrove	9,000	.50	A	19,000	.53	A
228. SR-126 w/o Chiquito Cyn/Long Cyn	24,000	.55	A	38,000	.86	D

LOS in **Bold** exceeds performance criteria of LOS E.

	Number of Occurrences	
LOS	Exist. Conditions	OVOV GP With Highway Plan
A-C	93	83 (226[1])
D	10	13 (26[1])
E	6	15 (41[1])
F	5	3 (5[1])

[1]Numbers in parentheses indicate the total number of segments included in the analysis of buildout conditions. Note that the analysis of buildout conditions includes more locations than the analysis of existing conditions due to the inclusion of future roadways as well as existing roadways where current traffic data is not available.

Level of service ranges:						
	.00 - .60	A	.61 - .70	B	.71 - .80	C
	.81 - .90	D	.91 – 1.00	E	Above 1.00	F

Table 4-9: ICU Summary for Principal Intersections – Existing Conditions vs OVOV Buildout Conditions

Buildout Intersection Lanes								
Intersection	Existing Conditions				OVOV GP With Highway Plan			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS
1. The Old Road & Rye Canyon	.61	B	.66	B	.85	D	.99	E
2. The Old Road & Magic Mountain	.28	A	.32	A	.78	C	.86	D
3. The Old Road & Valencia	.67	B	.44	A	.84	D	.95	E
4. The Old Road & Stevenson Ranch	.58	A	.76	C	.65	B	.90	D
5. The Old Road & Pico Canyon	.76	C	.71	C	.85	D	.97	E
6. Rye/Copper Hill & Newhall Ranch	.63	B	.70	B	.81	D	.89	D
7. McBean & Newhall Ranch	.73	C	.78	C	.83	D	.89	D
8. McBean & Magic Mountain	.61	B	.76	C	.77	C	.95	E
9. McBean & Valencia	.61	B	.74	C	.70	B	.87	D
10. Orchard Village & McBean	.57	A	.68	B	.78	C	.98	E
11. Orchard Village & Wiley Canyon	.60	A	.62	B	.78	C	.98	E
12. Valencia & Magic Mountain	.58	A	.66	B	.82	D	.86	D
13. Bouquet Canyon & Plum Canyon	.68	B	.73	C	.80	C	.77	C
14. Bouquet Canyon & Newhall Ranch	.66	B	.82	D	.86	D	.89	D
15. Bouquet Canyon & Soledad Canyon	.68	B	.77	C	.78	C	.90	D
16. Railroad & Lyons	.57	A	.56	A	.60	A	.83	D
17. Sierra Highway & Newhall	.57	A	.64	B	.86	D	.93	E
18. Whites Canyon & Soledad Canyon	.80	C	.86	D	.80	C	.90	D
19. Sierra Highway & Soledad Canyon	.67	B	.76	C	.86	D	.89	D
20. Commerce Center & Magic Mtn[1]	n/a	n/a	n/a	n/a	.76	C	.77	C
21. Pico Canyon & Valencia Boulevard[1]	n/a	n/a	n/a	n/a	.75	C	.81	D
22. Magic Mountain & Via Princessa[1]	n/a	n/a	n/a	n/a	.61	B	.81	D
23. Golden Valley & Via Princessa[1]	n/a	n/a	n/a	n/a	.88	D	.76	C

[1]Future Intersection

Number of Occurrences

LOS	Exist. Conditions	OVOV GP With Highway Plan
A-C	36	16
D	2	23
E	0	7
F	0	0

Level of service ranges:						
	.00 - .60	A	.61 - .70	B	.71 - .80	C
	.81 - .90	D	.91 – 1.00	E	Above 1.00	F

The fifth segment that is at LOS F for existing conditions, McBean Parkway south of Avenue Scott, is shown to remain at LOS F with the OVOV plan. However, the V/C ratio at that location does not increase with the OVOV plan.

Whereas Table 4-8 (the comparison of existing conditions to OVOV Buildout Conditions) identifies three segments that are forecast to operate at LOS F, Table 4-1 (the comparison of the current City/County plan to OVOV Buildout Conditions) identifies five roadway segments that are forecast to operate at LOS F due to a greater number of locations evaluated in Table 4-1. The number of locations evaluated in the comparison of existing conditions to OVOV Buildout Conditions is limited to the locations where existing traffic data is available, hence a fewer number of locations are evaluated in Table 4-8.

The previously referenced Table 4-9 shows that with the proposed Highway Plan in place, there are no intersections forecast to exceed LOS E, as is also the case for existing conditions.

Mission Village - Response to Comments Analysis Technical Memorandum, Austin-Foust Associates, Inc. (April 29, 2011)

AUSTIN-FOUST ASSOCIATES, INC.
TRAFFIC ENGINEERING AND TRANSPORTATION PLANNING

MEMORANDUM

TO: Tom Worthington, Impact Sciences, Inc.

FROM: Daryl Zerfass, P.E.

DATE: April 29, 2011

SUBJECT: **MISSION VILLAGE – RESPONSES TO COMMENTS ANALYSIS**

The purpose of this memorandum is to provide supplemental analysis in response to comments received on the Mission Village Draft Envirionmental Impact Report (DEIR).

Project Alternative 3 Supplemental Analysis

The Mission Village EIR includes a project alternative with a reduction of 1,422 residential units and the removal of 697,000 square feet of commercial/office space as the result of an expanded Spineflower Preserve area. The expanded preserve area also results in the removal of the Commerce Center Drive connection to the north, including the bridge over the Santa Clara River. This memorandum presents a supplemental analysis of the Alternative 3 scenario.

For this analysis, special model runs were prepared for long-range cumulative conditions based on the Alternative 3 scenario and based on a "no-project" Alternative 3 scenario. The No-Project Alternative 3 scenario differs from the long-range cumulative conditions no-project scenario presented in the Mission Village Traffic Impact Analysis (TIA/October 2010) due to the removal of the Commerce Center Drive Bridge as part of Alternative 3. These model runs allow for both an evaluation of Project Alternative 3 impacts as well as a basis of comparison for demonstrating the impact of not constructing the Commerce Center Drive Bridge.

Table 1, shows the land use and trip generation estimates for Alternative 3. As shown, Alternative 3 would generate approximately 40,000 average daily trips (ADT), which is 18,000 ADT, or 31%, less than the proposed project ADT of 58,000.

Table 2, presents a comparison of roadway volumes for long-range cumulative conditions between the proposed project scenario and the Alterative 3 scenario. While Alternative 3 would result in lower traffic generation than the proposed project, the removal of the Commerce Center Drive Bridge

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Table 1: Land Use and Trip Generation Summary - Alternative 3

Land Use Type	Units	AM Peak Hour			PM Peak Hour			ADT
		IB	OB	Total	IB	OB	Total	
3. Single Family (6-10 du/ac)	168 DU	32	94	126	108	62	170	1,663
4. Condominium/Townhouse	1,700 DU	170	816	986	799	442	1,241	13,600
5. Apartment	312 DU	25	134	159	128	66	193	2,153
7. Senior (Active)	459 DU	37	55	92	73	46	119	1,703
8. CCRC	351 DU	42	21	63	49	53	102	986
Residential Total	*2,990 DU*	*306*	*1,120*	*1,426*	*1,157*	*668*	*1,825*	*20,105*
13. Commercial Shops	224.1 TSF	161	108	269	403	403	807	8,305
20. Elementary/Middle School	900 STU	234	180	414	72	81	153	1,305
24. Library	36 TSF	27	11	38	122	133	255	3,059
31. Business Park	0 TSF	0	0	0	0	0	0	0
40. Commercial Office	634 TSF	983	120	1,103	133	818	951	7,329
51. Developed Park[1]	40.9 AC	0	0	0	1	2	3	106
Non-Residential Total		*1,405*	*419*	*1,824*	*732*	*1,437*	*2,169*	*20,105*
Alternative 3 Total		**1,711**	**1,539**	**3,250**	**1,889**	**2,105**	**3,994**	**40,210**
LRGP Total		**2,701**	**2,364**	**5,065**	**2,763**	**3,163**	**5,926**	**58,452**
Difference (LRGP - Alternative 3)		**-990**	**-825**	**-1,815**	**-874**	**-1,058**	**-1,932**	**-18,242**
Trip Rates								
3. Single Family (6-10 du/ac)[2]	DU	.19	.56	.75	.64	.37	1.01	9.90
4. Condominium/Townhouse[2]	DU	.10	.48	.58	.47	.26	.73	8.00
5. Apartment[2]	DU	.08	.43	.51	.41	.21	.62	6.90
7. Senior (Active)[2]	DU	.08	.12	.20	.16	.10	.26	3.71
8. CCRC[3]	DU	.12	.06	.18	.14	.15	.29	2.81
13. Commercial Shops[2]	TSF	.72	.48	1.20	1.80	1.80	3.60	37.06
20. Elementary/Middle School[2]	STU	.26	.20	.46	.08	.09	.17	1.45
24. Library[2]	TSF	.76	.30	1.06	3.40	3.69	7.09	84.98
31. Business Park[2]	TSF	1.20	.23	1.43	.30	.99	1.29	10.20

(Continued)

Table 1: Land Use and Trip Generation Summary - Alternative 3 (Continued)

Land Use Type	Units	AM Peak Hour			PM Peak Hour			ADT
		IB	OB	Total	IB	OB	Total	
40. Commercial Office[2]	TSF	1.55	.19	1.74	.21	1.29	1.50	11.56
51. Developed Park[2]	AC	.00	.00	.00	.03	.04	.07	2.60

DU = Dwelling Units
TSF = Thousand Square Feet
STU = Students
AC = Acres

[1]Includes private recreation centers.

Trip rate sources:
[2]Santa Clarita Valley Consolidated Transportation Model (SCVCTM)
[3]Institute of Transportation Engineers (ITE) Trip Generation 8th Edition, Category 255 (Continued Care Retirement Community)

Table 2: Roadway ADT Comparison - Alternative 3

Location	Year 2035 Cumulative Conditions ADT with Project	Year 2035 Cumulative Conditions ADT with Project Alternative 3	ADT Difference
N/S Roadway Screenline			
Potrero Canyon at River Crossing	8	8 (n/a)	0 (-8)
Long Canyon s/o Wolcott	35	39 (47)	4 (12)
Commerce Center s/o Henry Mayo	23	n/a	-23
The Old Road s/o Henry Mayo	50	56	6
SB I-5 Mainline s/o SR-126	122	126	4
NB I-5 Mainline s/o SR-126	121	123	2
Stanford s/o Vanderbilt	15	16	1
Newhall Ranch e/o Vanderbilt	57	57	0
Total	**431**	**425**	**-6**
E/W Roadway Screenline			
Valencia w/o The Old Road	56	56	0
Magic Mountain w/o The Old Road	74	83	9
Skyline w/o The Old Road	15	16	1
Henry Mayo e/o Commerce Center	13	14	1
SR-126 e/o Commerce Center	74	75	1
Hancock e/o Commerce Center	6	5	-1
Total	**238**	**249**	**11**
Westridge Parkway			
Westridge Parkway s/o Mission Village	8	6	-2

n/a = not applicable (roadway not constructed with this scenario)
(X) = numbers in parentheses represent conditions without the Potrero Canyon Road Bridge

results in increased traffic volumes at some locations. For example, volumes on parallel roadways such as the future Long Canyon Road Bridge are shown to increase by 4,000 ADT, The Old Road is forecast to increase by 6,000 ADT, Avenue Stanford is shown to increase marginally by 1,000 ADT, and the I-5 freeway is shown to increase by 6,000 ADT. East-west roadways generally are shown to have negligible increases in traffic volume, with the exception of Magic Mountain Parkway which is shown to increase by 9,000 ADT.

A detailed peak hour intersection impact analysis has been prepared for Alternative 3 and the results are presented in Table 3. The table shows that under long-range cumulative conditions, Alternative 3 would result in significant impacts at the following locations (intersection numbers correspond to Mission Village TIA; jurisdictional agencies are shown parentheses):

9. The Old Road & I-5 SB Ramps (Caltrans/County)
10. I-5 SB Ramps & Magic Mountain Parkway (Caltrans/County)
11. I-5 NB Ramps & Magic Mountain Parkway (Caltrans/City)
12. I-5 SB Ramps & Valencia Boulevard (Caltrans/County)
16. I-5 SB Ramps/Marriott Way & Pico Canyon Road (Caltrans/County)
25. The Old Road & Rye Canyon Road (County)
26. The Old Road & Magic Mountain Parkway (County)
36. Tourney Road & Valencia Boulevard (City)
37. Tourney Road & Magic Mountain Parkway (City)
44. McBean Parkway & Valencia Boulevard (City)
48. McBean Parkway & Newhall Ranch Road (City)
51. Wiley Canyon Road & Lyons Avenue (City)
54. Orchard Village Road & Wiley Canyon (City)
57. Valencia Boulevard & Magic Mountain Parkway (City)
65. Bouquet Canyon Road & Soledad Canyon Road (City)
66. Bouquet Canyon Road & Newhall Ranch Road (City)

Table 4 provides a comparison of significantly impacted locations between Alternative 3 and the proposed project. As shown on the table, the number of significantly impacted locations under Alternative 3 is slightly less than for the proposed project. However, as further discussed below, some locations require more mitigation than the proposed project.

Table 5 summarizes the intersection mitigation measures for Alternative 3, and mitigation beyond that needed for the proposed project is shown in bold. A summary of intersection levels of service for Alternative 3 with the mitigation measures is provided in Table 6. Thus, Alternative 3 would result in significant impacts at fewer locations than the proposed project, although Alternative 3 would require additional mitigation improvements beyond those required by the proposed project.

Table 3: ICU and LOS Summary - Buildout 2035 Cumulative Conditions With and Without Alternative 3

Intersection	Buildout 2035 Cumulative Conditions without Project				Buildout 2035 Cumulative Conditions with Project Alternative 3				Change	
	AM		PM		AM		PM			
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	AM	PM
Freeway Ramp Intersections (County)										
7. I-5 SB Ramps & Henry Mayo Drive (SR-126)	1.06	F	1.00	E	1.06	F	.99	E	.00	-.01
9. The Old Road & I-5 SB Ramps	.94	E	1.43	F	.98	**E**	1.44	**F**	**.04**	**.01**
10. I-5 SB Ramps & Magic Mountain Parkway	.88	D	.94	E	.88	D	.96	**E**	.00	**.02**
12. I-5 SB Ramps & Valencia Boulevard	.81	D	1.26	F	.82	D	1.30	**F**	.01	**.04**
14. I-5 SB Ramps & McBean Parkway	.75	C	1.00	E	.76	C	1.00	E	.01	.00
16. I-5 SB/Marriott & Pico Canyon Road/Lyons Avenue	.64	B	1.04	F	.65	B	1.08	**F**	.01	**.04**
Freeway Ramp Intersections (City)										
8. I-5 NB Ramps & SR-126	.65	B	.72	C	.65	B	.73	C	.00	.01
11. I-5 NB Ramps & Magic Mountain	.83	D	.92	E	.83	D	.93	**E**	.00	**.01**
13. I-5 NB Ramps & Valencia	.80	C	.84	D	.81	D	.86	D	.01	.02
15. I-5 NB Ramps & McBean	.63	B	.68	B	.62	B	.69	B	-.01	.01
17. I-5 NB On/Off & Lyons Ave	.54	A	.91	E	.55	A	.91	E	.01	.00
County Arterial Intersections										
25. The Old Road & Rye Canyon	2.05	F	2.20	F	2.12	**F[1]**	2.27	**F[1]**	**.07**	**.07**
26. The Old Road & Magic Mountain Parkway	.83	D	1.08	F	.92	**E**	1.25	**F**	**.09**	**.17**
27. The Old Road & Valencia Boulevard	.73	C	.90	D	.78	C[1]	.90	D[1]	.05	.00

(Continued)

Table 3: ICU and LOS Summary - Buildout 2035 Cumulative Conditions With and Without Alternative 3 (Continued)

	Buildout 2035 Cumulative Conditions without Project				Buildout 2035 Cumulative Conditions with Project Alternative 3					
	AM		PM		AM		PM		Change	
Intersection	**ICU**	**LOS**	**ICU**	**LOS**	**ICU**	**LOS**	**ICU**	**LOS**	**AM**	**PM**
28. The Old Road & McBean Parkway	.64	B	.96	E	.68	B	.95	E	.04	-.01
29. The Old Road & Pico Canyon Road	.85	D	.93	E	.86	D[1]	.95	E[1]	.01	.02
81. Commerce Ctr & Henry Mayo	.76	C	.60	A	.79	C	.62	B	.03	.02
82. Commerce Ctr & SR-126 EB	.32	A	.24	A	.32	A	.24	A	.00	.00
83. Commerce Ctr & SR-126 WB	.82	D	.64	B	.82	D	.66	B	.00	.02
105. Westridge Parkway & Valencia Boulevard	.54	A	.57	A	.56	A	.66	B	.02	.09
108. Stevenson Ranch Parkway & Pico Canyon Road	.55	B	.79	C	.54	A	.79	C	-.01	.00
109. Stevenson Ranch Parkway & Poe Parkway/Chase	.49	A	.60	A	.49	A	.60	A	.00	.00
City Arterial Intersections										
30. Stanford & Rye Canyon	.57	A	.81	D	.57	A	.82	D	.00	.01
33. Copper Hill & Newhall Ranch	.81	D	.89	D	.81	D	.88	D	.00	-.01
35. Copper Hill & Decoro	.72	C	.81	D	.72	C	.81	D	.00	.00
36. Tourney & Valencia	.67	B	.91	E	.68	B	.94	**E**	.01	**.03**
37. Tourney & Magic Mountain	.74	C	.93	E	.75	C	.94	**E**	.01	**.01**
44. McBean & Valencia	.71	C	.93	E	.71	C	.94	**E**	.00	**.01**
45. McBean & Magic Mountain	.96	E	1.24	F	.96	E[1]	1.23	F[1]	.00	-.01
48. McBean & Newhall Ranch	.82	D	1.15	F	.82	D	1.16	**F**	.00	**.01**
49. McBean & Decoro	.65	B	.66	B	.65	B	.66	B	.00	.00
51. Wiley Canyon & Lyons Cyn	.70	B	1.05	F	.70	B	1.07	**F**	.00	**.02**

(Continued)

Table 3: ICU and LOS Summary - Buildout 2035 Cumulative Conditions With and Without Alternative 3 (Continued)

	Buildout 2035 Cumulative Conditions without Project				Buildout 2035 Cumulative Conditions with Project Alternative 3				Change	
	AM		PM		AM		PM			
Intersection	**ICU**	**LOS**	**ICU**	**LOS**	**ICU**	**LOS**	**ICU**	**LOS**	**AM**	**PM**
54. Orchard Village & Wiley Cyn	1.08	F	1.42	F	1.08	F[1]	1.43	**F[1]**	.00	**.01**
55. Orchard Village & McBean	.92	E	1.22	F	.92	E[1]	1.22	F[1]	.00	.00
57. Valencia & Magic Mountain	1.12	F	1.25	F	1.12	**F**	1.26	**F**	**.00**	**.01**
65. Bouquet & Soledad	.78	C	.98	E	.80	C	1.00	**E**	.02	**.02**
66. Bouquet & Newhall Ranch	.94	E	.97	E	.95	**E**	.98	**E**	**.01**	**.01**

Bold = Significant Impact (LOS exceeds the long-range cumulative baseline conditions LOS as shown in the One Valley One Vision General Plan/Area Plan update, and the project impact exceeds the significance criteria for the applicable jurisdiction)

Intersection Level of Service Performance Criteria is LOS D, unless noted otherwise.

[1]LOS E is the Level of Service Performance Criteria for this location (See Reference 6 (One Valley One Vision Valley-Wide Traffic Study) in Section 1.6 of the project's traffic study).

Level of service ranges: .00 - .60A .71 - .80C .91 – 1.00 E
.61 - .70B .81 - .90D Above 1.00 F

Table 4: Significant Impact Comparison - Proposed Project and Project Alternative 3

Location	Jurisdiction	Proposed Project Impact	Project Alt. 3 Impact
7. I-5 SB Ramps & SR-126	Caltrans/County	X	
9. The Old Road & I-5 SB Ramps	Caltrans/County	X	X
10. I-5 SB Ramps & Magic Mountain Parkway	Caltrans/County	X	X
11. I-5 NB Ramps & Magic Mountain Parkway	Caltrans/City	X	X
12. I-5 SB Ramps & Valencia Boulevard	Caltrans/County	X	X
14. I-5 SB Ramps & McBean Parkway	Caltrans/County	X	
16. I-5 SB Ramps/Marriott Way & Pico Canyon Road	Caltrans/County	X	X
17. I-5 NB On/Off Ramps & Lyons Avenue	Caltrans/City	X	
25. The Old Road & Rye Canyon Road	County	X	X
26. The Old Road & Magic Mountain Parkway	County	X	X
28. The Old Road & McBean Parkway	County	X	
36. Tourney Road & Valencia Boulevard	City		X
37. Tourney Road & Magic Mountain Parkway	City	X	X
44. McBean Parkway & Valencia Boulevard	City		X
45. McBean Parkway & Magic Mountain Parkway	City	X	
48. McBean Parkway & Newhall Ranch Road	City	X	X
51. Wiley Canyon Road & Lyons Avenue	City	X	X
54. Orchard Village Road & Wiley Canyon	City	X	X
55. Orchard Village Road & McBean Parkway	City	X	
57. Valencia Boulevard & Magic Mountain Parkway	City	X	X
65. Bouquet Canyon Road & Soledad Canyon Road	City		X
66. Bouquet Canyon Road & Newhall Ranch Road	City	X	X
94. Commerce Center Drive & SR-126	Caltrans/County	X	
Total Number of Impacted Intersections		**20**	**16**

X = Significant Impact

Table 5: Off-Site Mitigation Measures for Alternative 3 Impacts - Buildout 2035 Cumulative Conditions

Location	Jurisdiction	Alt. 3 Project Mitigation
9. The Old Road & I-5 SB Ramps	Caltrans/County	Add a 2nd northbound right-turn lane, a 2nd southbound left-turn lane, and a 3rd southbound through lane. Convert the shared westbound left/right-turn lane to a 2nd westbound left-turn lane and add a westbound right-turn lane.
10. I-5 SB Ramps & Magic Mountain Parkway	Caltrans/County	Re-stripe the shared southbound left-turn/through lane to a left-turn lane and the 1st southbound right-turn lane to a shared through/left-turn lane.
11. I-5 NB Ramps & Magic Mountain	Caltrans/City	Re-stripe the shared northbound through/right-turn lane to a shared left-turn/through/right-turn lane.
12. I-5 SB Ramps & Valencia Boulevard	Caltrans/County	Re-stripe the 2nd westbound free-flow right-turn lane to a 3rd westbound through lane/shared free-flow right-turn lane.
16. I-5 SB/Marriott & Pico Canyon Road/Lyons Avenue	Caltrans/County	Add a left-turn phase for the westbound left-turn lane (can be protected/permissive configuration) and right-turn overlap phasing for the northbound right-turn lane. **Stripe a 3rd eastbound through lane.**
25. The Old Road & Rye Canyon	County	Add a 2nd and 3rd northbound through lane, convert the northbound free right-turn lanes to two conventional right-turn lanes, add a 2nd southbound left-turn lane and a 3rd southbound through lane. Add a 2nd and 3rd westbound left-turn lane and convert the westbound free right-turn lanes to two conventional right-turn lanes. Add right-turn overlap phasing for the westbound right-turn and northbound right-turns.
26. The Old Road & Magic Mountain Parkway	County	**Stripe a 5th eastbound through lane. Convert the 3rd southbound through lane to a shared through/right-turn lane. Add a 4th northbound through lane (requires acquisition of additional right of way for the 4th northbound through lane).**
36. Tourney Road & Valencia Boulevard	City	**Restripe the 2nd southbound left-turn lane to a shared left/right-turn lane.**
37. Tourney Road & Magic Mountain Parkway	City	Stripe a 4th eastbound through lane.
44. McBean Parkway & Valencia Boulevard	City	**Add a 4th westbound through lane.**

(Continued)

Table 5: Off-Site Mitigation Measures for Alternative 3 Impacts - Buildout 2035 Cumulative Conditions (Continued)

Location	Jurisdiction	Alt. 3 Project Mitigation
48. McBean Parkway & Newhall Ranch Road	City	Re-stripe for 4th westbound through lane. Reconfigure the northbound approach to include dual right-turn lanes.
51. Wiley Canyon & Lyons	City	Re-stripe eastbound right-turn lane to 3rd through lane (shared through/right-turn lane).
54. Orchard Village & Wiley Canyon	City	Stripe a northbound right-turn lane.
57. Valencia Boulevard & Magic Mountain	City	Add a 2nd westbound left-turn lane by removing or relocating the existing east leg raised median.
65. Bouquet Canyon Road & Soledad Canyon Road	City	**Add a 4th northbound through lane.**
66. Bouquet Canyon Road & Newhall Ranch Road	City	Restripe the 3rd eastbound left-turn lane to a 4th through lane.
Mitigation that is not required for the proposed Project (i.e., is applicable to Alternative 3 only) is shown in **bold**.		

Table 6: ICU and LOS Summary - Buildout 2035 Cumulative Conditions with Alternative 3 and Mitigation

Intersection	Buildout 2035 Cumulative Conditions without Project Alt. 3				Buildout 2035 Cumulative Conditions with Project Alt. 3 and Mitigation				Change	
	AM		PM		AM		PM			
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	AM	PM
Freeway Ramp Intersections (County)										
9. The Old Road & I-5 SB Ramps	.94	E	1.43	F	.94	E	1.16	F	.00	-.27
10. I-5 SB Ramps & Magic Mountain Parkway	.88	D	.94	E	.74	C	.83	D	-.14	-.11
12. I-5 SB Ramps & Valencia Boulevard	.81	D	1.26	F	.66	B	1.03	F	-.15	-.23
16. I-5 SB/Marriott & Pico Canyon Road/Lyons Avenue	.64	B	1.04	F	.65	B	.88	D	.01	-.16
Freeway Ramp Intersections (City)										
11. I-5 NB Ramps & Magic Mountain	.83	D	.92	E	.75	C	.83	D	-.08	-.09
County Arterial Intersections										
25. The Old Road & Rye Canyon	2.05	F	2.20	F	.89	D[1]	.95	E[1]	-1.16	-1.25
26. The Old Road & Magic Mountain Parkway	.83	D	1.08	F	.88	D	.88	D	.05	-.20
City Arterial Intersections										
36. Tourney & Valencia	.67	B	.91	E	.68	B	.79	C	.01	-.12
37. Tourney & Magic Mountain	.74	C	.93	E	.75	C	.84	D	.01	-.09
44. McBean & Valencia	.71	C	.93	E	.69	B	.89	D	-.02	-.04
48. McBean & Newhall Ranch	.82	D	1.15	F	.82	D	.89	D	.00	-.26
51. Wiley Canyon & Lyons Cyn	.70	B	1.05	F	.62	B	.95	E	-.08	-.10

(Continued)

Table 6: ICU and LOS Summary - Buildout 2035 Cumulative Conditions with Alternative 3 and Mitigation (Continued)

	Buildout 2035 Cumulative Conditions without Project Alt. 3				Buildout 2035 Cumulative Conditions with Project Alt. 3 and Mitigation				Change	
	AM		PM		AM		PM			
Intersection	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	AM	PM
54. Orchard Village & Wiley Cyn	1.08	F	1.42	F	.98	E[1]	1.26	F[1]	-.10	-.16
57. Valencia & Magic Mountain	1.12	F	1.25	F	.93	E	1.12	F	-.19	-.13
65. Bouquet & Soledad Cyn	.78	C	.98	E	.80	C	.90	D	.02	-.08
66. Bouquet & Newhall Ranch	.94	E	.97	E	.92	E	.90	D	-.02	-.07

Intersection Level of Service Performance Criteria is LOS D, unless noted otherwise.

[1]LOS E is the Level of Service Performance Criteria for this location (See Reference 6 (One Valley One Vision Valley-Wide Traffic Study) in Section 1.6 of the project's traffic study).

Level of service ranges: .00 - .60 A; .61 - .70 B; .71 - .80 C; .81 - .90 D; .91 – 1.00 E; Above 1.00 F

The mitigation identified in Table 5 (referenced above) for the Alternative 3 scenario is consistent with the proposed Project mitigation as identified in the Project TIA, unless otherwise noted in Table 5. Of note, the City has requested that alternative mitigation measures be investigated for some locations, which is addressed later in this memorandum. (See discussion in the section following below.) Due to the similarities between the impacts of Alternative 3 and those of the proposed Project at intersections within the City of Santa Clarita, alternative mitigation measures for the proposed Project are also applicable to the Alternative 3 mitigation (i.e., in those instances in which the proposed Project's mitigation is revised in response to the City's request, similar revisions would be made to the Alternative 3 improvements).

Regarding transit routes, the elimination of the Commerce Center Drive connection to SR-126 would result in the loss of a potential transit route, although specific transit routes are at the discretion of the transit provider (Santa Clarita Transit) and will be determined at a later date by Santa Clarita Transit. Without the Commerce Center Drive connection to SR-126, alternative north/south transit routes consist of the future Long Canyon Road connection to SR-126, as well as The Old Road, which runs parallel to the I-5 freeway. The area most affected by the elimination of a transit connection to SR-126 via Commerce Center Drive is the Mission Village area itself. Travel distance from Mission Village to the

Valencia Commerce Center business park area (just north of SR-126) without the connection to SR-126 is approximately 4.5 miles, in comparison to approximately 1.75 miles with the connection. At an average travel speed of 20 miles per hour, that equates to an increase of approximately 8 minutes for a transit trip from Mission Village to the Valencia Commerce Center business park area.

Regarding response times for law enforcement and other emergency services, the elimination of the Commerce Center Drive connection to SR-126 will not affect the primary fire department response time since a fire station is proposed to be located within the Mission Village site itself. Likewise, secondary response units responding from the east or south would also not be affected. Secondary response units from the north would utilize The Old Road, which runs parallel to the I-5 freeway, or would utilize the Long Canyon Road connection to SR-126. As such, without the connection there would be longer response times for secondary response units arriving from the north. The effect of the elimination of the Commerce Center Drive connection to SR-126 on law enforcement response times is comparable to the effect on fire department response times. Law enforcement response from the east, south or west is not affected, but in some cases response times from the north would increase due to the need to utilize The Old Road or Long Canyon Road in lieu of the Commerce Center Drive connection to SR-126.

The ICU worksheets corresponding to the anlaysis presented above are attached to this memorandum for reference.

Alternative Mitigation Improvements Analysis

The Mission Village Traffic Impact Analysis (TIA/October 2010) identified several significant impacts within the City of Santa Clarita and mitigation measures were proposed accordingly. In response to a request from the City of Santa Clarita, alternative mitigation measures have been investigated for certain locations. Following is a discussion of the current constraints and potential alternative mitigation measures for each of those intersection locations. Intersection Capacity Utilization (ICU) summary tables and worksheets are provided for reference.

I-5 NB On/Off Ramps and Lyons Avenue

The I-5 NB On/Off Ramps and Lyons Avenue intersection is shown in the Mission Village TIA to be significantly impacted by the proposed project under long-range cumulative (2035) conditions; the intersection would not be significantly impacted by the project for the project's buildout year of 2021. The TIA identified a proposed mitigation measure to consist of *re-striping the third westbound through lane to a right-turn lane and to re-stripe the second westbound through lane to a shared through/right-turn lane*.

However, since Lyons Avenue is classified as a six-lane major arterial in the City of Santa Clarita General Plan, the City prefers that three through lanes be maintained in each way. City staff requested

that if a westbound right-turn only lane is required as a project-related mitigation measure, it should not be as a result of losing a through lane.

The proposed mitigation measure was selected on the basis that it would improve the efficiency of the intersection without requiring additional widening of the roadway. Specifically, the projected traffic volumes for the westbound approach of Lyons Avenue indicate that the existing three lanes would provide sufficient capacity without the need for widening for additional lanes.

As shown in Table 7, between 30 percent and 43 percent of the approach volumes are right-turning vehicles. Therefore, since three lanes provide sufficient capacity for the approach, the intersection could be configured such that at least one of the three lanes can be a dedicated right-turn lane without negatively affecting the through movement.

Table 7: Westbound Approach Volume Summary – Lyons Avenue at I-5 NB Ramps

Time Period	Westbound Right-turn Volume	Westbound Total Approach Volume	Right-turn Percentage
AM Peak Hour	500	1,680	30%
PM Peak Hour	970	2,280	43%

Source: Mission Village Traffic Impact Analysis, Figures 4-19 and 4-20.

With the mitigation improvement proposed in the TIA, the intersection is projected to operate at LOS C for long-range buildout conditions. (See Mission Village TIA, Table 4-10, ICU and LOS Summary - 2035 Cumulative Conditions with Mitigation.) Therefore, the proposed mitigation measure is both practical in the sense that it can be implemented within the existing right-of-way, as well as efficient since it does not result in unnecessary widening. Furthermore, the mitigation proposed in the Draft EIR is consistent with the existing configuration of Lyons Avenue at the southbound I-5 Ramps where the third approach lane is configured as a dedicated right-turn lane and only two lanes continue through the intersection.

However, since the City would prefer to maintain three through lanes in each direction at this location, alternative mitigation measures have been investigated. As identified in the TIA, additional westbound right-turn capacity is required in order to mitigate the project's impact, as well as to provide acceptable levels of service overall, and any form of affective mitigation must address the westbound right-turn volume. Alternative mitigation that has been considered includes widening the westbound approach to accommodate a separate right-turn lane. Widening Lyons Avenue for a dedicated westbound right-turn lane would be feasible within the existing Caltrans right-of-way, although the amount of available Caltrans right-of-way would result in a short (approximately 80') right-turn pocket. A right-turn pocket of that length would be ineffective when traffic in the adjacent through lane is queued at the intersection, and a longer right-turn pocket would affect the existing businesses on the north side of Lyons Avenue due to the need to remove landscaping and, potentially, parking.

Nonetheless, an ICU analysis has been prepared to evaluate a separate right-turn lane as mitigation. The ICU analysis determined that the addition of a single right-turn lane alone would not result in acceptable levels of service as the ICU with the addition of a single right-turn lane results in LOS E conditions for the PM peak hour. To provide acceptable levels of service, the adjacent through lane would need to be configured to allow right-turns (i.e., convert the through lane to a shared through/right-turn lane), which results in LOS A conditions for the AM peak hour and LOS C conditions for the PM peak hour. (See Table 8: ICU and LOS Summary – Buildout 2035 Cumulative Conditions with Alternative Mitigation.)

Providing a separate westbound right-turn lane in the manner discussed above results in conditions that are effectively equivalent to the proposed mitigation included in the TIA. With three through lanes, the PM peak hour ICU is forecast to be 0.76 (LOS C) for long-range buildout conditions, whereas with two through lanes as proposed in the TIA, the PM peak hour ICU is forecast to be 0.79 (LOS C) for long-range buildout conditions. The AM peak hour ICU is forecast to be 0.57 (LOS A) with either lane configuration.

As shown above, LOS C conditions are forecast for long-range buildout conditions without the need to widen the roadway to provide a dedicated right-turn lane. If a dedicated right-run lane is provided, the PM peak hour ICU reduces from 0.79 to 0.76 for the PM peak hour, and no measurable change is achieved for the AM peak hour. As such, the revised mitigation measure would provide only a marginal improvement (-0.03) to intersection operation.

Therefore, in light of the fact that the amount of available right-of-way is limited, which would result in a short right-turn pocket that would be ineffective when traffic in the adjacent through lane is queued at the intersection, in combination with the fact that the widening would provide only limited operational improvement, and that LOS C conditions are forecast without widening the roadway, it is recommended that the westbound approach not be widened and that the proposed mitigation included in the Mission Village TIA remain unchanged.

McBean Parkway and Newhall Ranch Road

The intersection of McBean Parkway and Newhall Ranch Road is shown in the Mission Village TIA to be significantly impacted by the proposed project under both project buildout year (2021) conditions and long-range cumulative (2035) conditions. The TIA identified a proposed mitigation measure to *reconstruct the northbound approach to remove the pork-chop island and reconfigure as conventional dual right-turn lanes*.

This intersection was initially constructed with dual northbound right-turn lanes with a mid-sized median/pedestrian refuge island separating the right-turn lanes from the adjacent through lanes. A pedestrian cross-walk from the outside curb to the median island was positioned at a skewed angle significantly offset from the edge of traveled way of the cross street. Prior discussions with City staff

Table 8: ICU and LOS Summary – Buildout 2035 Cumulative Conditions with Alternative Mitigation

	Buildout 2035 Cumulative Conditions without Project				Buildout 2035 Cumulative Conditions with Project and Alternative Mitigation					
	AM		PM		AM		PM		Change	
Intersection	**ICU**	**LOS**	**ICU**	**LOS**	**ICU**	**LOS**	**ICU**	**LOS**	**AM**	**PM**
17. I-5 NB Ramps & Lyons	.56	A	.89	D	.57	A	.76	C	.01	-.13
54. Orchard Village & Wiley	.97	E	1.25	F	.81	D[1]	1.07	F[1]	-.16	-.18
55. Orchard Village & McBean	.77	C	.96	E	.78[2]	C[1]	.97[2]	E[1]	.01	.01
57. Valencia & Magic Mountain	.91	E	1.11	F	.91	E	1.06	F	.00	-.05
66. Bouquet & Newhall Ranch	.93	E	.95	E	.93	E	.87	D	.00	-.08

Intersection Level of Service Performance Criteria is LOS D, unless noted otherwise.

[1]LOS E is the Level of Service Performance Criteria for this location (See Reference 6 (One Valley One Vision Valley-Wide Traffic Study) in Section 1.6 of the project's traffic study).

[2]Mitigation not required due to no significant project impact for this scenario.

Level of service ranges:							
	.00 - .60	A	.71 - .80	C	.91 – 1.00	E
	.61 - .70	B	.81 - .90	D	Above 1.00	F

have indicated that the cross-walk configuration resulted in frequent violations by motorists when pedestrians were present. Within recent years, the City re-striped this right-turn pocket to reconfigure as a single-right turn lane to rectify the pedestrian crossing issues. City staff has also commented that, as a general practice, they are attempting to reduce the number of locations with dual right-turn lanes due to potential conflicts between right-turning motorists and pedestrians.

Traffic forecasts provided in the Mission Village TIA indicate that the removal of the dual northbound right-turn lane configuration at the intersection will ultimately result in a deficient level of service at this intersection as traffic volumes increase over time, since the right-turning volume will be one of the intersection's critical movements. Specifically, the TIA determined that at project buildout with only a single right-turn lane provided, the northbound right-turning volume will become a critical movement that by itself requires an additional 24 percent of the total intersection capacity in relation to what is otherwise needed to serve the northbound approach. (See Mission Village TIA, PM peak hour ICU calculation for 2035 Cumulative Conditions with Project, Page A-64).

Additionally, prior traffic planning studies approved by the City, as well as the current County of Los Angeles and City of Santa Clarita One Valley One Vision Areawide and General Plan update, identify the need for dual northbound right-turn lanes at this location for future conditions. (See North Valencia Annexation Area EIR Traffic Study, Figure III-10, Page III-14; North Valencia Specific Plan No. 2 EIR Traffic Study, Figure III-9, Page III-13; and City of Santa Clarita/County of Los Angeles One Valley One Vision Valley-Wide Traffic Study, Table 4-5, Page 4-31.)

In response to the City's request to not provide dual right-turn lanes at this location, alternative improvement measures have been investigated. A thorough analysis of the intersection's forecast ICU has confirmed that additional northbound right-turn capacity is required in order to provide acceptable LOS for conditions both with and without the Mission Village project, as well as to mitigate the project's direct and cumulative impact. As such, the provision of additional right-turn capacity is needed for acceptable LOS with or without the proposed project.

One alternative improvement that was investigated consisted of modifying the traffic signal timing to provide a right-turn overlap phase for the northbound right-turns without adding a second right-turn lane. However, an ICU analysis indicates that right-turn overlap phasing alone is not sufficient to mitigate the project's impact or to provide acceptable levels of service overall. Alternatively, the existing right-turn lane could be converted to a free-flow right-turn lane; however free-flowing right-turn lanes present similar challenges in regard to accommodating pedestrians, and as such, would not represent a substantial improvement over signal controlled dual right-turn lanes. In addition, conversion to a free-flow right-turn lane would require widening the south side of Newhall Ranch Road to provide an additional receiving lane, which would require the acquisition of right-of-way and would result in a reduction of parkway landscaping.

Striping the westbound approach to its ultimate planned configuration of four through lanes was also investigated as a potential stand alone mitigation measure, however that improvement provides a negligible benefit to the critical PM peak hour due to the eastbound direction becoming the critical movement.

In addition to the two alternatives considered above, a detailed evaluation of the intersection operations has been prepared using Synchro traffic signal optimization software to consider additional alternative configurations at the intersection. Specifically, four separate configurations of the northbound intersection approach were evaluated for the critical PM peak hour for 2021 cumulative conditions: a single northbound right-turn lane in both a yield configuration and a protected configuration, and a dual right-turn lane in both a yield and protected configuration.

For 2021 cumulative conditions with the proposed project, maintaining a single northbound right-turn lane in a yield configuration (i.e., the existing configuration) results in an average intersection delay of 102.9 seconds per vehicle (sec/veh), which is LOS F. If a second right-turn lane is added in a yield configuration (i.e., the original configuration that was recently modified by the City), the average intersection delay reduces to 63.5 sec/veh, which is LOS E. However, this particular configuration of dual right-turn lanes is unacceptable to the City relative to pedestrian safety.

To address pedestrian safety, a modified right-turn lane configuration for both single and dual right-turn lanes has been evaluated. To eliminate potential conflicts between right-turning motorists and pedestrians, an approach lane configuration consisting of a right-turn movement with protected signal phasing in conjunction with right-turn-on-red prohibition and right-turn overlap phasing was evaluated. This configuration allows for a protected pedestrian crossing interval specific to crossing the right-turn lane(s) (i.e. a protected pedestrian phase for crossing from the outside curb to the pedestrian refuge island, during which the right-turning vehicles will have a right-turn red arrow with the prohibition of right-turns-on-red.).

With the protected right-turn movement described above, the average intersection delay with a single right-turn lane is 82.1 sec/veh, which is LOS F. With dual right-turn lanes, the average intersection delay reduces to 61.4 sec/veh, which is LOS E. In each case, despite the prohibition of right-turns-on-red, the provision of a right-turn overlap phase results in improved operational conditions in comparison to the unprotected yield configuration. Table 9 summarizes the delay and LOS for each of these scenarios.

Table 9: McBean Parkway/Newhall Ranch Road Delay and LOS Summary - 2021 Cumulative Conditions with Alternative Mitigation

	Right-turn Yield		**Right-turn Protected (No Right-turn-on-Red, Right-turn Overlap Phase, Protected Pedestrian Crossing)**	
Configuration	**Delay (sec/veh)**	**LOS**	**Delay (sec/veh)**	**LOS**
Single Right-turn Lane	102.9	F	82.1	F
Dual Right-turn Lanes	63.5	E	61.4	E

Therefore, in light of the fact that a free-flow right-turn lane would not address the City's desire to improve pedestrian safety, and since the City's own long-range planning documents indicate that this intersection is planned to return to dual northbound right-turn lanes in order to accommodate buildout traffic conditions, an intersection design can be provided that improves pedestrian safety while simultaneously reducing vehicle delay. Accordingly, the recommended improvements contained in the Draft EIR to modify the northbound approach to provide dual-right-turn lanes will be revised to also provide appropriate pedestrian enhancements, examples of which are to prohibit northbound right-turns-on-red, provide a signal overlap phase for the northbound right-turn movement, and provide a pedestrian signal for crossing between the southeast corner of the intersection to the southeast pedestrian refuge island. The recommendation to re-stripe for a fourth westbound through lane will remain as part of the recommended improvements; however the recommendation to reconstruct the northbound approach to remove the pork-chop island and reconfigure as conventional turn lanes will be removed.

Orchard Village Road and Wiley Canyon Road

The Orchard Village Road and Wiley Canyon Road intersection is shown in the Mission Village TIA to be significantly impacted by the proposed project under long-range cumulative (2035) conditions; the intersection would not be significantly impacted by the project for the project's buildout year of 2021. The TIA identified a proposed mitigation measure to consist of *striping a northbound right-turn lane*.

However, since striping a northbound right-turn lane is also an approved mitigation measure for the Henry Mayo Newhall Memorial Hospital expansion project, the City of Santa Clarita has stated that if this improvement is completed as part of the hospital expansion prior to construction of Mission Village, then Mission Village can not use it as a mitigation measure since it will already be in place. As such, the City has also stated that the traffic analysis for Mission Village should assume this improvement in the future background conditions and determine if any additional measures would be necessary to mitigate Mission Village project traffic.

Future improvements such as the mitigation measures adopted as part of the Henry Mayo Newhall Memorial Hospital project typically are not assumed as part of background conditions during the impact analysis due to uncertainty as to their construction timing. The inclusion of such unbuilt improvements could have the effect of the analysis understating project impacts due to assumed increased capacity and improved operations that may not materialize. Nonetheless, in response to the request by the City, a supplemental impact analysis has been prepared which incorporates the Mayo Hospital's mitigation measure as part of the background conditions. Under this scenario, the proposed project would result in a significant project impact under long-range cumulative (2035) conditions, as was the case in the TIA. To mitigate this impact, the addition of a second southbound left-turn lane and elimination of the existing southbound right-turn lane is recommended. This improvement is identified in the One Valley One Vision General Plan update, and also is consistent with the generalized improvement included in the Via Princessa Bridge & Thoroughfare (B&T) District. (See One Valley One Vision Valley-Wide Traffic Study, Table 4-5, Page 4-32; Via Princessa B&T District, Page C-7.)

A summary of the resulting ICU and levels of service with the alternative mitigation measure is provided in Table 8, above, which indicates that the alternative mitigation measure effectively mitigates the project's impacts if the Henry Mayo Newhall Memorial Hospital mitigation is implemented prior to the construction of Mission Village. Accordingly, it is recommended that the Final EIR include revisions noting that in the event the Mayo Memorial Hospital improvements at the Orchard Village & Wiley Canyon Road intersection are implemented prior to construction of Mission Village, the improvement recommended to mitigate the project's identified significant impact at this intersection is to add a second southbound left-turn lane and remove the existing southbound right-turn lane.

In addition to the revised background conditions discussed above, City staff has also requested that a queuing analysis be provided for the northbound right-turn and left-turn movements to determine the storage lengths that will be required. Table 10 depicts the anticipated queue lengths for the northbound approach based on the mitigation measures discussed above.

Table 10: Orchard Village/Wiley Canyon Queue Summary

	Average Queue – Northbound			95th Percentile Queue – Northbound		
Scenario	**Left-Turn**	**Through**	**Right-Turn**	**Left-Turn**	**Through**	**Right-Turn**
2021 with Project, with Hospital Mitigation Only	42 ft.	292 ft.	0 ft.	80 ft.	393 ft.	51 ft.
2035 without Project, with Hospital Mitigation Only	27 ft.	508 ft.[2]	356 ft.[2]	53 ft.	642 ft.[1]	587 ft.[1]
2035 with Project, with Hospital Mitigation Only	27 ft.	517 ft.[2]	358 ft.[2]	53 ft.	652 ft.[1]	589 ft.[1]
2035 with Project, with Hospital & Mission Mitigation	59 ft.[2]	467 ft.[2]	248 ft.	161 ft.[1]	602 ft.[1]	488 ft.[1]

Note: The queue lengths indicated above are based on a 120 second signal cycle length for the PM peak hour cumulative conditions with and without the proposed Mission Village project, which represents the critical time period for the northbound approach.
[1]95th percentile volume exceeds capacity. Queue shown is maximum after two cycles.
[2]Volume exceeds capacity. Queue shown is maximum after two cycles.

The above table shows that for 2021 conditions with the proposed project, queue lengths for the northbound left-turns and right-turns are 80 feet or less, which is within the length of the existing left-turn pocket (approximately 200 feet) and the proposed right-turn pocket (approximately 175 feet). For 2035 conditions, the anticipated left-turn queue lengths are within the length of the existing left-turn pocket; however, the right-turn queue lengths are anticipated to exceed 350 feet on average, and 580 feet for the 95th percentile volume with only the Hospital's mitigation, which would exceed the length of the proposed right-turn pocket. Right-turn queue lengths are effectively identical for conditions with or without the proposed project, and decrease with the additional intersection mitigation of the proposed project.

As noted above, in the event the Mayo Memorial Hospital improvements at the Orchard Village & Wiley Canyon Road intersection are implemented prior to construction of Mission Village as the City suggests, the improvement recommended to mitigate the project's identified significant impact at the intersection would be to add a second southbound left-turn lane and remove the existing southbound right-turn lane, rather than to stripe a northbound right-turn lane. Under these circumstances, the addition of a northbound right-turn lane would not be implemented as project mitigation.

Orchard Village Road and McBean Parkway

The Orchard Village Road and McBean Parkway intersection is shown in the Mission Village TIA to be significantly impacted by the proposed project under both project buildout year (2021)

conditions and long-range cumulative (2035) conditions. The TIA identified a proposed mitigation measure to *add a separate southbound left-turn lane, add a separate southbound through lane, add a separate southbound right-turn lane, and reconfigure the existing southbound right-turn lane as a shared left-turn/through lane.*

However, since the proposed mitigation measure is also an approved mitigation measure for the Henry Mayo Newhall Memorial Hospital expansion project, the City of Santa Clarita has stated that if this improvement is completed as part of the hospital expansion prior to construction of Mission Village, then Mission Village can not use it as a mitigation measure, since it will already be in place. As with the Orchard Village Road and Wiley Canyon Road intersection discussed above, the City has also stated that the traffic analysis for Mission Village should assume this improvement in the future background conditions and determine if any additional measures would be necessary to mitigate Mission Village project traffic.

As noted above, future improvements such as the mitigation measures adopted as part of the Henry Mayo Newhall Memorial Hospital project typically are not assumed as part of background conditions during the impact analysis due to uncertainty as to their construction timing; the inclusion of such unbuilt improvements could have the effect of the analysis understating project impacts due to assumed increased capacity and improved operations that may not materialize. Nonetheless, in response to the comment, a supplemental impact analysis was prepared in which the mitigation measures for the Henry Mayo Newhall Memorial Hospital expansion project are assumed as part of background conditions for this location. With those improvements assumed, the proposed project would no longer result in a significant project impact at this location and, therefore, mitigation is no longer required for the proposed Mission Village project.

For the supplemental project buildout year (2021) analysis, only the first phase of the Mayo Hospital project's mitigation has been assumed, which would consist of modifications to the Hospital driveway (i.e., the intersection's southbound approach). With that mitigation assumed as part of background conditions, the proposed project would have no measurable effect on the ICU values and the intersection is forecast to operate at LOS C or better. (See Table 11: ICU and LOS Summary – Project Buildout 2021 Cumulative Conditions with Alternative Mitigation.)

Under the supplemental long-range cumulative (2035) conditions analysis, all of the mitigation measures approved as part of the hospital project have been assumed as part of background conditions since the entire hospital expansion project would be completed under the 2035 scenario. Under this scenario, the resulting conditions are LOS E at the intersection, which is consistent with the conclusions reached in the One Valley One Vision General Plan update. (See One Valley One Vision Valley-Wide Traffic Study, Table 4-9, Page 4-45.) Accordingly, it is recommended that the Final EIR include revisions noting that in the event the Mayo Memorial Hospital improvements at the McBean Parkway & Orchard Village Road intersection are implemented prior to construction of Mission Village, the improvements recommended to mitigate the project's identified significant impact at this intersection would no longer be necessary.

Table 11: ICU and LOS Summary – Project Buildout 2021 Cumulative Conditions with Alternative Mitigation

	2021 Cumulative Conditions without Project				2021 Cumulative Conditions with Project and Alternative Mitigation					
	AM		PM		AM		PM		Change	
Intersection	**ICU**	**LOS**	**ICU**	**LOS**	**ICU**	**LOS**	**ICU**	**LOS**	**AM**	**PM**
17. I-5 NB Ramps & Lyons	.51	A	.75	C	.52[1]	A	.77[1]	C	.01	-.13
54. Orchard Village & Wiley	.65	B	.75	C	.65[1]	B	.75[1]	C	.00	.00
55. Orchard Village & McBean	.63	B	.78	C	.64[1]	B	.80[1]	C	.01	.02
57. Valencia & Magic Mountain	.79	C	.83	D	.80[1]	C	.84[1]	D	.01	.01
66. Bouquet & Newhall Ranch	.81	D	.87	D	.82	D	.83	D	.01	-.04

[1]Mitigation not required due to no significant project impact for this scenario.

Level of service ranges: .00 - .60 A .71 - .80 C .91 – 1.00 E
.61 - .70 B .81 - .90 D Above 1.00 F

Valencia Boulevard and Magic Mountain Parkway

The Valencia Boulevard and Magic Mountain Parkway intersection is shown in the Mission Village TIA to be significantly impacted by the proposed project under long-range cumulative (2035) conditions; the intersection would not be significantly impacted by the project for the project's buildout year of 2021. The TIA identified a proposed mitigation measure to *add a second westbound left-turn lane*.

As with the Orchard Village Road intersections discussed above, the proposed mitigation measure at this intersection is also an approved mitigation measure for Henry Mayo Newhall Memorial Hospital expansion project, and the City has similar concerns regarding it's exclusion from the background, no-project, conditions.

In response to the City's concerns, a supplemental impact analysis has been prepared which incorporates the hospital mitigation measure as part of background conditions. Under this scenario, the proposed project would still result in a significant project impact under long-range cumulative (2035) conditions, as was the case in the TIA. To mitigate this impact, the reinstatement of a dedicated westbound right-turn lane (the hospital mitigation removes the existing right-turn lane) and the addition

of a third eastbound through lane is recommended. This improvement is identified in the One Valley One Vision General Plan update and also is included in the Valencia Bridge & Thoroughfare District. (See One Valley One Vision Valley-Wide Traffic Study, Table 4-9, Page 4-45; Valencia B&T District, Page 11.) Accordingly, it is recommended that the Final EIR include revisions noting that in the event the Mayo Memorial Hospital improvements at the Valencia Boulevard & Magic Mountain Parkway intersection are implemented prior to construction of Mission Village, the improvement recommended to mitigate the project's identified significant impact at this intersection is to reinstate a dedicated westbound right-turn lane, and add a third eastbound through lane at the intersection.

Bouquet Canyon Road and Newhall Ranch Road

The Bouquet Canyon Road and Newhall Ranch Road intersection is shown in the Mission Village TIA to be significantly impacted by the proposed project under both project buildout year (2021) conditions and long-range cumulative (2035) conditions. The TIA identified a mitigation measure to *stripe a third eastbound through lane*.

However, subsequent to the release of the Mission Village notice of preparation of Draft EIR, and following the collection of traffic counts for the EIR traffic impact analysis, the recommended mitigation measure was completed in March 2010 as part of recent Newhall Ranch Road and Golden Valley Road improvements. As such, since this improvement already exists, it should be included as part of background conditions.

A supplemental ICU analysis has been prepared in which the subject improvement is included as part of background conditions for future scenarios. This analysis determined that the proposed project would result in a significant impact under both the project buildout year (2021) and long-range cumulative (2035) conditions, as was the case in the TIA.

Recent discussions with City staff have indicated that the City desires to maintain the existing eastbound triple left-turn lane at the intersection even though three eastbound left-turn lanes were not anticipated when the intersection was initially designed. The evaluation of the project's buildout year (2021) indicates that the triple-left turn lanes continue to be needed for that horizon year. Therefore, a revised improvement has been developed for inclusion in the Final EIR that would allow the triple left-turn lane to remain in place as part of the 2021 mitigation. Specifically, it is recommended that the Final EIR include a revised improvement for the project buildout year of 2021 that consists of reconfiguring the second eastbound right-turn lane to a shared through/right-turn lane, which results in a total of four eastbound through lanes as planned for in the intersection's original design. East of the intersection, the fourth eastbound through lane will be dropped prior to the Millhouse Drive intersection, which is approximately 2,400 feet to the east of the Bouquet Canyon Road intersection. A summary of the resulting ICU and levels of service with the mitigation measure in place at the intersection is provided in Table 11, above, for the 2021 horizon.

However, the evaluation of long-range cumulative (2035) conditions indicates that the triple-left turn lanes are no longer needed to serve the critical movement, and that the eastbound intersection approach should be returned to the planned configuration of two left-turn lanes, four through lanes, and two right-turn lanes, as recommended in the Project's traffic study. Accordingly, the recommended 2035 mitigation improvement included in the Draft EIR will be revised to restripe the eastbound approach to consist of two left-turn lanes, four through lanes, and two right-turn lanes. A summary of the resulting ICU and levels of service with the mitigation measure in place at the intersection is provided in Table 8, above, for the long-range cumulative (2035) horizon.

The ICU worksheets corresponding to the anlaysis presented above and excerpts from the prior traffic studies and B&T District reports referenced above are attached to this memorandum for reference.

McBean Parkway Midblock Analysis

At the request of the City of Santa Clarita, a mid-block arterial analysis has been prepared for the section of McBean Parkway between Avenue Scott and Creekside Road. This segment of roadway includes the McBean Parkway Bridge over the Santa Clara River, where the roadway currently reduces from eight through lanes (four lanes each direction) to six through lanes (three lanes each direction).

Intersections typically represent the constraints within an urban/suburban network due to the need to share signal time with cross street traffic. As such, mid-block links are not typically constraints except for special circumstances, potentially such as the condition noted in the comment where mid-block lanes reduce to a fewer number than at the adjacent intersections. To evaluate the section of McBean Parkway between Avenue Scott and Creekside Road, a supplemental analysis was prepared based on the constraint that is represented by the number of lanes on the bridge. While the bridge has four lanes in the northbound direction, only three lanes currently exist in the southbound direction. The bridge was constructed in 1985 with three lanes in each direction, and in 2009 a fourth northbound lane was striped by utilizing a portion of the center median in order to provide temporary traffic relief until the planned bridge widening is completed. Immediately north and south of the bridge, McBean Parkway is already widened to its ultimate eight-lane section (four lanes each direction). In March 2011, the City awarded the design contract for the bridge widening.

The long-range cumulative (2035) forecasts provided by the SCVCTM for the McBean Parkway Bridge indicate that peak southbound traffic volumes occur during the AM peak hour and consist of approximately 3,800 vph in the southbound direction. This volume is based on a buildout scenario that does not include the future Tibbitts Bridge, and, therefore, represent a worst case scenario for this segment of McBean Parkway.

SimTraffic microsimulation software was utilized to evaluate the southbound segment of McBean Parkway where it merges from four lanes to three lanes approximately 300 feet south of the Avenue Scott intersection. The simulation indicates that based on 2035 conditions, a pronounced slowing of traffic would occur across all southbound lanes due to the volume of traffic that must merge at the

point of the lane drop. As shown on Table B.4-24, the average speed at the merge point is 16 miles per hour (mph), for conditions either with or without the proposed Mission Village project.

As shown in Table 12, the proposed Mission Village project results in an increased density of 5 vehicles per mile, which is equivalent to an additional 0.28 vehicles within the 300 foot segment where the merge occurs (e.g., 5 veh/mi / 5,200 feet/mi x 300 feet = 0.28). Since the impact of the proposed Mission Village project is negligible within this segment of roadway (i.e., less than one additional vehicle, on average, during any given portion of the peak hour), no further mitigation is required on the part of the project.

Table 12: McBean Parkway Bridge Capacity Analysis

Direction	Existing Lanes	2035 Volume[1]	PM Peak Hour	
			Average Speed at Merge	Density[2]
Southbound – Without Project	3	3,724 vph	16 mph	233 veh/mi
Southbound – With Project	3	3,800 vph (+72 vph)	16 mph (no change)	238 veh/mi (+5 veh/mi)

vph = vehicles per hour
mph = miles per hour

[1]Volume source = SCVCTM Long-Range Cumulative (2035) Buildout Conditions without Avenue Tibbitts Bridge, with Mission Village Project
[2]Density (veh/mi) = vehicles per hour / miles per hour

Enclosures:

ICU Calculation Worksheets – Project Alternative 3 Analysis
ICU Calculation Worksheets – Alternative Mitigation Improvements Analysis
Synchro Delay, LOS, and Queue Worksheets
Simtraffic Performance Report
References

Project Alternative 3 Analysis

7. I-5 SB Ramps & SR-126

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	1050	.36*	1230	.43*
SBT	0	0	0		0	
SBR	2	3200	700	.22	410	.13
EBL	0	0	0		0	
EBT	4	6400	1100	.17	2470	.39
EBR	f		1300		1100	
WBL	0	0	0		0	
WBT	3	4800	2860	.60*	2240	.47*
WBR	f		30		220	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION 1.06 1.00

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	1070	.37*	1220	.42*
SBT	0	0	0		0	
SBR	2	3200	690	.22	430	.13
EBL	0	0	0		0	
EBT	4	6400	1090	.17	2490	.39
EBR	f		1310		1130	
WBL	0	0	0		0	
WBT	3	4800	2850	.59*	2260	.47*
WBR	f		30		220	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION 1.06 .99

Project Alternative 3 Analysis

8. I-5 NB Ramps & SR-126

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	3	5250	960	.18*	1280	.24*
NBT	0	0	0		0	
NBR	1	1750	110	.06	20	.01
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	4	7000	1560	.22	2680	.38*
EBR	f		340		720	
WBL	0	0	0		0	
WBT	3	5250	1950	.37*	1150	.22
WBR	f		510		880	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.65**		**.72**

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	3	5250	970	.18*	1290	.25*
NBT	0	0	0		0	
NBR	1	1750	110	.06	20	.01
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	4	7000	1570	.22	2690	.38*
EBR	f		340		710	
WBL	0	0	0		0	
WBT	3	5250	1930	.37*	1170	.22
WBR	f		530		890	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.65**		**.73**

Project Alternative 3 Analysis

9. The Old Rd & I-5 SB Ramps

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	30	.02	30	.02
NBT	2	3200	1270	.40*	1870	.58*
NBR	1	1600	460	.29	710	.44
SBL	1	1600	210	.13*	1050	.66*
SBT	2	3200	380	.12	1360	.43
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1.5		960		280	
WBT	0	3200	0	.31*	0	.09*
WBR	0.5		20		10	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .94 1.43

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	30	.02	30	.02
NBT	2	3200	1330	.42*	1980	.62*
NBR	1	1600	500	.31	710	.44
SBL	1	1600	200	.13*	1000	.63*
SBT	2	3200	430	.13	1440	.45
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1.5		1020		260	
WBT	0	3200	0	.33*	0	.09*
WBR	0.5		20		20	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .98 1.44

2035 Cumulative With Project Alt 3 With Mitigat

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	30	.02	30	.02
NBT	2	3200	1330	.42*	1980	.62*
NBR	2	3200	500	.16	710	.22
SBL	2	2880	200	.07*	1000	.35*
SBT	3	4800	430	.09	1440	.30
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	2880	1020	.35*	260	.09*
WBT	0	0	0		0	
WBR	1	1600	20	.01	20	.01
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .94 1.16

Project Alternative 3 Analysis

10. I-5 SB Ramps & Magic Mtn

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		1310		1260	
SBT	0.5	3200	0	.41*	0	.39*
SBR	2	3200	120	.04	180	.06
EBL	0	0	0		0	
EBT	3	4800	950	.20	1780	.37*
EBR	2	3200	1020	.32	720	.23
WBL	2	2880	130	.05	230	.08*
WBT	4	6400	2230	.35*	2540	.40
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.02*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.88**		**.94**

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		1270		1220	
SBT	0.5	3200	0	.40*	0	.38*
SBR	2	3200	160	.05	220	.07
EBL	0	0	0		0	
EBT	3	4800	1090	.23	1940	.40*
EBR	2	3200	1080	.34	750	.23
WBL	2	2880	110	.04	220	.08*
WBT	4	6400	2310	.36*	2590	.40
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.02*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.88**		**.96**

2035 Cumulative With Project Alt 3 With Mitigat

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2.5		1270		1220	
SBT	0.5	4800	0	.26*	0	.25*
SBR	1	1600	160	.10	220	.14
EBL	0	0	0		0	
EBT	3	4800	1090	.23	1940	.40*
EBR	2	3200	1080	.34	750	.23
WBL	2	2880	110	.04	220	.08*
WBT	4	6400	2310	.36*	2590	.40
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.02*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.74**		**.83**

Project Alternative 3 Analysis

11. I-5 NB Ramps & Magic Mtn

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	1120	.32*	1090	.31*
NBT	0.5	3500	0	.15	0	.10
NBR	1.5		520		360	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	2	3500	130	.04	340	.10
EBT	3	5250	2130	.41*	2700	.51*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3.5	8750	1240	{.20}	1670	{.29}
WBR	1.5		740		1110	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.83**		**.92**

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	1100	.31*	1100	.31*
NBT	0.5	3500	0	.15	0	.09
NBR	1.5		540		330	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	2	3500	160	.05	420	.12
EBT	3	5250	2200	.42*	2750	.52*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3.5	8750	1320	{.21}	1700	{.28}
WBR	1.5		700		1070	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.83**		**.93**

2035 Cumulative With Project Alt 3 With Mitigat

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2.5		1100	{.23}*	1100	.21*
NBT	0	7000	0	.23	0	
NBR	1.5		540		330	.19
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	2	3500	160	.05	420	.12
EBT	3	5250	2200	.42*	2750	.52*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3.5	8750	1320	{.20}	1700	{.29}
WBR	1.5		700		1070	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.75**		**.83**

Project Alternative 3 Analysis

12. I-5 SB Ramps & Valencia

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	320	.11*	300	.10*
SBT	0	0	0		0	
SBR	1	1600	400	.25	600	.38
EBL	0	0	0		0	
EBT	3	4800	1370	.29	1590	.33
EBR	f		1010		730	
WBL	0	0	0		0	
WBT	2	3200	1460	.46*	2510	.78*
WBR	f		1150		870	
Right Turn Adjustment			SBR	.14*	SBR	.28*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.81**		**1.26**

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	340	.12*	300	.10*
SBT	0	0	0		0	
SBR	1	1600	400	.25	640	.40
EBL	0	0	0		0	
EBT	3	4800	1390	.29	1630	.34
EBR	f		1000		760	
WBL	0	0	0		0	
WBT	2	3200	1490	.47*	2560	.80*
WBR	f		1160		850	
Right Turn Adjustment			SBR	.13*	SBR	.30*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.82**		**1.30**

2035 Cumulative With Project Alt 3 With Mitigat

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	340	.12*	300	.10*
SBT	0	0	0		0	
SBR	1	1600	400	.25	640	.40
EBL	0	0	0		0	
EBT	3	4800	1390	.29	1630	.34
EBR	f		1000		760	
WBL	0	0	0		0	
WBT	3	4800	1490	.31*	2560	.53*
WBR	f		1160		850	
Right Turn Adjustment			SBR	.13*	SBR	.30*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.66**		**1.03**

Project Alternative 3 Analysis

13. I-5 NB Ramps & Valencia

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	640	.18*	490	.14*
NBT	0	0	0		0	
NBR	2	3500	1230	.35	1230	.35
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5250	1590	.34*	1720	.37*
EBR	0	0	170		220	
WBL	2	3500	190	.05*	290	.08*
WBT	4	7000	2070	.30	2920	.42
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.13*	NBR	.15*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.80**		**.84**

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	630	.18*	480	.14*
NBT	0	0	0		0	
NBR	2	3500	1250	.36	1250	.36
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5250	1620	.34*	1760	.38*
EBR	0	0	180		220	
WBL	2	3500	190	.05*	300	.09*
WBT	4	7000	2120	.30	2980	.43
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.14*	NBR	.15*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.81**		**.86**

Project Alternative 3 Analysis

14. I-5 SB Ramps & McBean

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1600	430	.27*	520	.33*
SBT	0	0	0		0	
SBR	1	1600	290	.18	260	.16
EBL	0	0	0		0	
EBT	2	3200	1230	.38*	1280	.40
EBR	1	1600	330	.21	110	.07
WBL	0	0	0		0	
WBT	2	3200	830	.26	1810	.57*
WBR	1	1600	390	.24	340	.21
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for WBR

TOTAL CAPACITY UTILIZATION .75 1.00

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1600	450	.28*	510	.32*
SBT	0	0	0		0	
SBR	1	1600	290	.18	260	.16
EBL	0	0	0		0	
EBT	2	3200	1210	.38*	1330	.42
EBR	1	1600	330	.21	120	.08
WBL	0	0	0		0	
WBT	2	3200	910	.28	1840	.58*
WBR	1	1600	390	.24	330	.21
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for WBR

TOTAL CAPACITY UTILIZATION .76 1.00

Project Alternative 3 Analysis

15. I-5 NB Ramps & McBean

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	270	.08*	510	.15*
NBT	0	0	0		0	
NBR	2	3500	550	.16	620	.18
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3500	1280	.37*	1390	.40*
EBR	1	1750	410	.23	390	.22
WBL	0	0	0		0	
WBT	3	5250	980	.21	1620	.37
WBR	0	0	120		310	
Right Turn Adjustment			NBR	.08*	NBR	.03*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.63**		**.68**

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	340	.10*	530	.15*
NBT	0	0	0		0	
NBR	2	3500	530	.15	620	.18
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3500	1280	.37*	1440	.41*
EBR	1	1750	400	.23	380	.22
WBL	0	0	0		0	
WBT	3	5250	990	.21	1620	.37
WBR	0	0	130		310	
Right Turn Adjustment			NBR	.05*	NBR	.03*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.62**		**.69**

Project Alternative 3 Analysis

16. I-5 SB/Marriott & Pico/Lyons

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	1	1600	70	.04	400	.25
SBL	1.5		760		290	
SBT	0.5	3200	10	.24*	130	.13*
SBR	1	1600	340	.21	20	.01
EBL	0	0	0		0	
EBT	2	3200	710	.23	1490	.48*
EBR	0	0	30		40	
WBL	1	1600	30	.02	490	.31*
WBT	2	3200	960	.30*	1370	.43
WBR	1	1600	280	.18	220	.14
Right Turn Adjustment					NBR	.02*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .64 1.04

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	1	1600	70	.04	410	.26
SBL	1.5		770		330	
SBT	0.5	3200	10	.24*	120	.14*
SBR	1	1600	340	.21	20	.01
EBL	0	0	0		0	
EBT	2	3200	710	.23	1550	.50*
EBR	0	0	30		40	
WBL	1	1600	30	.02	500	.31*
WBT	2	3200	980	.31*	1370	.43
WBR	1	1600	280	.18	250	.16
Right Turn Adjustment					NBR	.03*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .65 1.08

2035 Cumulative With Project Alt 3 With Mitigat

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	1	1600	70	.04	410	.26
SBL	1.5		770		330	
SBT	0.5	3200	10	.24*	120	.14*
SBR	1	1600	340	.21	20	.01
EBL	0	0	0		0	
EBT	3	4800	710	.15	1550	.33*
EBR	0	0	30		40	
WBL	1	1600	30	.02	500	.31*
WBT	2	3200	980	.31*	1370	.43
WBR	1	1600	280	.18	250	.16
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .65 .88

Project Alternative 3 Analysis

17. I-5 NB On/Off & Lyons Ave

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		150	{.05}*	730	{.21}*
NBT	0.5	3500	10	.05	0	.21
NBR	f		280		400	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1750	70	.04	90	.05
EBT	2	3500	1380	.39*	1490	.43*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	5250	1130	.31	1300	.37
WBR	0	0	520		960	.55
Right Turn Adjustment					WBR	.17*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.54**		**.91**

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		150	{.05}*	740	{.21}*
NBT	0.5	3500	10	.05	0	.21
NBR	f		280		400	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1750	70	.04	90	.05
EBT	2	3500	1400	.40*	1530	.44*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	5250	1150	.32	1320	.38
WBR	0	0	510		970	.55
Right Turn Adjustment					WBR	.16*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.55**		**.91**

Project Alternative 3 Analysis

17. I-5 NB On/Off & Lyons Ave

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		150	{.05}*	730	{.21}*
NBT	0.5	3500	10	.05	0	.21
NBR	f		280		400	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1750	70	.04	90	.05
EBT	2	3500	1380	.39*	1490	.43*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	5250	1130	.31	1300	.37
WBR	0	0	520		960	.55
Right Turn Adjustment					WBR	.17*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.54**		**.91**

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		150	{.05}*	740	{.21}*
NBT	0.5	3500	10	.05	0	.21
NBR	f		280		400	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1750	70	.04	90	.05
EBT	2	3500	1400	.40*	1530	.44*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	5250	1150	.32	1320	.38
WBR	0	0	510		970	.55
Right Turn Adjustment					WBR	.16*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.55**		**.91**

Project Alternative 3 Analysis

25. The Old Rd & Rye Canyon

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	1440	.90*	1510	.94*
NBR	f		1570		1250	
SBL	1	1600	650	.41*	710	.44*
SBT	2	3200	580	.18	1410	.44
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	1030	.64*	1150	.72*
WBT	0	0	0		0	
WBR	f		710		1210	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION 2.05 2.20

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	1530	.96*	1620	1.01*
NBR	f		1600		1290	
SBL	1	1600	620	.39*	680	.43*
SBT	2	3200	730	.23	1490	.47
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	1070	.67*	1170	.73*
WBT	0	0	0		0	
WBR	f		740		1220	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION 2.12 2.27

2035 Cumulative With Project Alt 3 With Mitigat

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	4800	1530	.32*	1620	.34*
NBR	2	3200	1600	.50	1290	.40
SBL	2	2880	620	.22*	680	.24*
SBT	3	4800	730	.15	1490	.31
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	3	4320	1070	.25*	1170	.27*
WBT	0	0	0		0	
WBR	2	3200	740	.23	1220	.38
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for WBR NBR

TOTAL CAPACITY UTILIZATION .89 .95

Project Alternative 3 Analysis

26. The Old Rd & Magic Mountain

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	2880	420	.15	320	.11*
NBT	3	4800	670	.14*	360	.08
NBR	1	1600	160	.10	150	.09
SBL	2	2880	800	.28*	360	.13
SBT	3	4800	120	.03	720	.15*
SBR	1	1600	420	.26	1050	.66
EBL	2	2880	570	.20*	540	.19
EBT	4	6400	1010	.16	1980	.31*
EBR	1	1600	110	.07	550	.34
WBL	2	2880	200	.07	210	.07*
WBT	4	6400	700	.11*	980	.15
WBR	f		1450		1520	
Right Turn Adjustment					SBR	.34*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.83**		**1.08**

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	2880	420	.15	340	.12*
NBT	3	4800	660	.14*	360	.08
NBR	1	1600	160	.10	140	.09
SBL	2	2880	740	.26*	340	.12
SBT	3	4800	120	.03	690	.14*
SBR	1	1600	640	.40	1270	.79
EBL	2	2880	790	.27*	760	.26*
EBT	4	6400	1270	.20	2220	.35
EBR	1	1600	110	.07	550	.34
WBL	2	2880	200	.07	220	.08
WBT	4	6400	940	.15*	1150	.18*
WBR	f		1330		1450	
Right Turn Adjustment					SBR	.45*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.92**		**1.25**

2035 Cumulative With Project Alt 3 With Mitigat

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	2880	420	.15	340	.12*
NBT	4	6400	660	.10*	360	.06
NBR	1	1600	160	.10	140	.09
SBL	2	2880	740	.26*	340	.12
SBT	2.5	6400	120	.04	690	.22*
SBR	1.5		640	.20	1270	.40
EBL	2	2880	790	.27*	760	.26*
EBT	5	8000	1270	.16	2220	.28
EBR	1	1600	110	.07	550	.34
WBL	2	2880	200	.07	220	.08
WBT	4	6400	940	.15*	1150	.18*
WBR	f		1330		1450	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.88**		**.88**

Project Alternative 3 Analysis

27. The Old Rd & Valencia

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	2880	540	.19*	350	.12*
NBT	3	4800	390	.08	590	.12
NBR	1	1600	130	.08	450	.28
SBL	2	2880	140	.05	340	.12
SBT	3	4800	180	.04*	840	.18*
SBR	1	1600	190	.12	230	.14
EBL	2	2880	320	.11*	240	.08*
EBT	4	6400	2290	.36	1600	.25
EBR	1	1600	340	.21	340	.21
WBL	2	2880	100	.03	600	.21
WBT	3	4800	1400	.29*	2030	.42*
WBR	f		400		430	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.73**		**.90**

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	2880	660	.23*	390	.14*
NBT	3	4800	380	.08	590	.12
NBR	1	1600	130	.08	420	.26
SBL	2	2880	130	.05	410	.14
SBT	3	4800	190	.04*	730	.15*
SBR	1	1600	180	.11	260	.16
EBL	2	2880	330	.11*	240	.08*
EBT	4	6400	2310	.36	1630	.25
EBR	1	1600	340	.21	430	.27
WBL	2	2880	100	.03	640	.22
WBT	3	4800	1430	.30*	2070	.43*
WBR	f		390		460	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.78**		**.90**

Project Alternative 3 Analysis

28. The Old Rd & McBean

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	70	.04	140	.09*
NBT	3	4800	380	.08*	790	.16
NBR	1	1600	290	.18	630	.39
SBL	1	1600	160	.10*	290	.18
SBT	2	3200	230	.07	1020	.32*
SBR	1	1600	20	.01	300	.19
EBL	2	2880	130	.05	220	.08*
EBT	3	4800	1150	.24*	470	.10
EBR	1	1600	120	.08	90	.06
WBL	2	2880	270	.09*	880	.31
WBT	2	3200	260	.16	960	.37*
WBR	0	0	560	.35	230	
Right Turn Adjustment			NBR	.03*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.64**		**.96**

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	70	.04	140	.09*
NBT	3	4800	410	.09*	790	.16
NBR	1	1600	290	.18	640	.40
SBL	1	1600	160	.10*	310	.19
SBT	2	3200	240	.08	1000	.31*
SBR	1	1600	20	.01	290	.18
EBL	2	2880	130	.05	210	.07*
EBT	3	4800	1140	.24*	480	.10
EBR	1	1600	120	.08	90	.06
WBL	2	2880	270	.09*	880	.31
WBT	2	3200	260	.16	960	.38*
WBR	0	0	640	.40	260	
Right Turn Adjustment			Multi	.06*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.68**		**.95**

Project Alternative 3 Analysis

29. The Old Rd & Pico Canyon

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	100	.06	530	.33*
NBT	2	3200	220	.08*	530	.23
NBR	0	0	50		200	
SBL	2	2880	320	.11*	670	.23
SBT	2	3200	170	.09	450	.24*
SBR	0	0	130		310	
EBL	1	1600	370	.23*	50	.03
EBT	2	3200	410	.13	440	.14*
EBR	1	1600	80	.05	630	.39
WBL	1	1600	10	.01	190	.12*
WBT	2	3200	1060	.33*	380	.12
WBR	f		290		700	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.85**		**.93**

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	100	.06	530	.33*
NBT	2	3200	230	.09*	540	.23
NBR	0	0	50		200	
SBL	2	2880	320	.11*	650	.23
SBT	2	3200	170	.09	450	.24*
SBR	0	0	130		310	
EBL	1	1600	370	.23*	50	.03
EBT	2	3200	410	.13	520	.16*
EBR	1	1600	80	.05	630	.39
WBL	1	1600	10	.01	190	.12*
WBT	2	3200	1070	.33*	390	.12
WBR	f		300		690	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.86**		**.95**

Project Alternative 3 Analysis

30. Ave Stanford & Rye Canyon

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	220	.06*	150	.04*
NBT	1	1750	20	.04	220	.15
NBR	0	0	50		50	
SBL	1	1750	30	.02	120	.07
SBT	1	1750	50	.03*	430	.25*
SBR	1	1750	100	.06	340	.19
EBL	1	1750	160	.09	130	.07*
EBT	3	5250	1750	.37*	1690	.36
EBR	0	0	170		200	
WBL	1	1750	10	.01*	20	.01
WBT	3	5250	1350	.26	1760	.35*
WBR	0	0	10		80	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.57**		**.81**

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	230	.07*	170	.05*
NBT	1	1750	20	.04	230	.16
NBR	0	0	50		50	
SBL	1	1750	30	.02	120	.07
SBT	1	1750	50	.03*	440	.25*
SBR	1	1750	100	.06	350	.20
EBL	1	1750	160	.09	130	.07*
EBT	3	5250	1730	.36*	1700	.36
EBR	0	0	170		210	
WBL	1	1750	10	.01*	20	.01
WBT	3	5250	1400	.27	1760	.35*
WBR	0	0	10		80	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.57**		**.82**

Project Alternative 3 Analysis

33. Rye/Copper Hill & NRR

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	440	.13*	390	.11
NBT	3	5250	1190	.23	1300	.25*
NBR	f		150		100	
SBL	2	3500	130	.04	300	.09*
SBT	3	5250	1610	.31*	900	.17
SBR	f		1220		760	
EBL	2	3500	310	.09*	1050	.30*
EBT	4	7000	560	.08	2080	.30
EBR	1	1750	280	.16	490	.28
WBL	2	3500	330	.09	460	.13
WBT	4	7000	1270	.18*	1020	.15*
WBR	f		680		300	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.81**		**.89**

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	430	.12*	390	.11
NBT	3	5250	1210	.23	1300	.25*
NBR	f		140		90	
SBL	2	3500	130	.04	290	.08*
SBT	3	5250	1630	.31*	850	.16
SBR	f		1210		770	
EBL	2	3500	320	.09*	1040	.30*
EBT	4	7000	570	.08	2110	.30
EBR	1	1750	280	.16	520	.30
WBL	2	3500	330	.09	460	.13
WBT	4	7000	1300	.19*	1050	.15*
WBR	f		680		300	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.81**		**.88**

Project Alternative 3 Analysis

35. Copper Hill & Decoro

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5250	890	.17	2940	.56*
NBR	1	1750	180	.10	70	.04
SBL	1	1750	330	.19	150	.09*
SBT	3	5250	3060	.58*	650	.12
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3500	150	.04*	90	.03*
WBT	0	0	0		0	
WBR	1	1750	130	.07	230	.13
Right Turn Adjustment					WBR	.03*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.72**		**.81**

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5250	890	.17	2930	.56*
NBR	1	1750	180	.10	70	.04
SBL	1	1750	340	.19	150	.09*
SBT	3	5250	3060	.58*	650	.12
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3500	150	.04*	90	.03*
WBT	0	0	0		0	
WBR	1	1750	130	.07	230	.13
Right Turn Adjustment					WBR	.03*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.72**		**.81**

Project Alternative 3 Analysis

36. Tourney & Valencia

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3500	180	.05*	450	.13*
SBT	0	0	0		0	
SBR	1	1750	200	.11	720	.41
EBL	2	3500	700	.20*	320	.09*
EBT	4	7000	2100	.30	2630	.38
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	4	7000	1970	.32*	2420	.38*
WBR	0	0	270		210	
Right Turn Adjustment					SBR	.21*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.67**		**.91**

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3500	180	.05*	450	.13*
SBT	0	0	0		0	
SBR	1	1750	220	.13	770	.44
EBL	2	3500	700	.20*	360	.10*
EBT	4	7000	2150	.31	2640	.38
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	4	7000	2000	.33*	2430	.38*
WBR	0	0	280		200	
Right Turn Adjustment					SBR	.23*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.68**		**.94**

2035 Cumulative With Project Alt 3 With Mitigat

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		180	.05*	450	
SBT	0	5250	0		0	{.21}*
SBR	1.5		220	{.00}	770	
EBL	2	3500	700	.20*	360	.10*
EBT	4	7000	2150	.31	2640	.38
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	4	7000	2000	.33*	2430	.38*
WBR	0	0	280		200	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.68**		**.79**

Project Alternative 3 Analysis

37. Tourney & Magic Mountain

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	50	.03	310	.18*
NBT	2	3500	450	.14*	450	.17
NBR	0	0	40		150	
SBL	1	1750	30	.02*	120	.07
SBT	2	3500	220	.06	570	.16*
SBR	2	3500	220	.06	660	.19
EBL	2	3500	520	.15*	400	.11
EBT	3	5250	1740	.33	2430	.46*
EBR	1	1750	260	.15	50	.03
WBL	1	1750	170	.10	60	.03*
WBT	3	5250	1670	.33*	1490	.29
WBR	0	0	50		10	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .74 .93

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	40	.02	290	.17*
NBT	2	3500	450	.14*	490	.18
NBR	0	0	40		150	
SBL	1	1750	30	.02*	120	.07
SBT	2	3500	240	.07	590	.17*
SBR	2	3500	220	.06	670	.19
EBL	2	3500	560	.16*	400	.11
EBT	3	5250	1780	.34	2450	.47*
EBR	1	1750	260	.15	50	.03
WBL	1	1750	170	.10	60	.03*
WBT	3	5250	1700	.33*	1490	.29
WBR	0	0	50		10	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .75 .94

2035 Cumulative With Project Alt 3 With Mitigat

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	40	.02	290	.17*
NBT	2	3500	450	.14*	490	.18
NBR	0	0	40		150	
SBL	1	1750	30	.02*	120	.07
SBT	2	3500	240	.07	590	.17*
SBR	2	3500	220	.06	670	.19
EBL	2	3500	560	.16*	400	.11*
EBT	4	7000	1780	.25	2450	.35
EBR	1	1750	260	.15	50	.03
WBL	1	1750	170	.10	60	.03
WBT	3	5250	1700	.33*	1490	.29*
WBR	0	0	50		10	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .75 .84

Project Alternative 3 Analysis

44. McBean & Valencia

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	280	.08*	170	.05*
NBT	3	5250	1080	.21	1330	.25
NBR	2	3500	330	.09	720	.21
SBL	2	3500	50	.01	240	.07
SBT	3	5250	920	.18*	1440	.27*
SBR	2	3500	870	.25	1030	.29
EBL	2	3500	510	.15*	1000	.29*
EBT	3	5250	1100	.21	1280	.24
EBR	1	1750	20	.01	270	.15
WBL	2	3500	430	.12	690	.20
WBT	3	5250	1060	.20*	1180	.22*
WBR	1	1750	240	.14	400	.23
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR

TOTAL CAPACITY UTILIZATION .71 .93

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	280	.08*	170	.05*
NBT	3	5250	1040	.20	1310	.25
NBR	2	3500	330	.09	720	.21
SBL	2	3500	50	.01	240	.07
SBT	3	5250	920	.18*	1420	.27*
SBR	2	3500	870	.25	940	.27
EBL	2	3500	540	.15*	1000	.29*
EBT	3	5250	1110	.21	1280	.24
EBR	1	1750	20	.01	280	.16
WBL	2	3500	430	.12	720	.21
WBT	3	5250	1060	.20*	1230	.23*
WBR	1	1750	240	.14	370	.21
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR

TOTAL CAPACITY UTILIZATION .71 .94

2035 Cumulative With Project Alt 3 With Mitigat

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	280	.08*	170	.05*
NBT	3	5250	1040	.20	1310	.25
NBR	2	3500	330	.09	720	.21
SBL	2	3500	50	.01	240	.07
SBT	3	5250	920	.18*	1420	.27*
SBR	2	3500	870	.25	940	.27
EBL	2	3500	540	.15	1000	.29*
EBT	3	5250	1110	.21*	1280	.24
EBR	1	1750	20	.01	280	.16
WBL	2	3500	430	.12*	720	.21
WBT	4	7000	1060	.15	1230	.18*
WBR	1	1750	240	.14	370	.21
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR

TOTAL CAPACITY UTILIZATION .69 .89

Project Alternative 3 Analysis

45. McBean & Magic Mtn

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	200	.06	340	.10
NBT	3	5250	1310	.25*	2450	.47*
NBR	f		40		270	
SBL	2	3500	590	.17*	410	.12*
SBT	4	7000	1900	.27	2130	.30
SBR	f		700		100	
EBL	2	3500	480	.14	460	.13
EBT	2	3500	1460	.42*	1690	.48*
EBR	1	1750	120	.07	460	.26
WBL	2	3500	70	.02*	230	.07*
WBT	3	5250	780	.15	1230	.23
WBR	1	1750	390	.22	580	.33
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .96 1.24

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	190	.05	340	.10
NBT	3	5250	1320	.25*	2460	.47*
NBR	f		40		270	
SBL	2	3500	580	.17*	390	.11*
SBT	4	7000	1890	.27	2150	.31
SBR	f		710		110	
EBL	2	3500	490	.14	490	.14
EBT	2	3500	1470	.42*	1730	.49*
EBR	1	1750	130	.07	420	.24
WBL	2	3500	70	.02*	220	.06*
WBT	3	5250	790	.15	1230	.23
WBR	1	1750	390	.22	580	.33
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .96 1.23

Project Alternative 3 Analysis

48. McBean & Newhall Ranch

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	260	.07	300	.09
NBT	3	5250	920	.18*	2000	.38*
NBR	1	1750	160	.09	1210	.69
SBL	2	3500	520	.15*	180	.05*
SBT	4	7000	1750	.25	1330	.19
SBR	f		190		60	
EBL	2	3500	100	.03*	230	.07*
EBT	4	7000	840	.12	2010	.29
EBR	1	1750	320	.18	670	.38
WBL	2	3500	940	.27	260	.07
WBT	3	5250	1870	.36*	1610	.31*
WBR	1	1750	60	.03	520	.30
Right Turn Adjustment					NBR	.24*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .82 1.15

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	260	.07	290	.08
NBT	3	5250	930	.18*	2010	.38*
NBR	1	1750	160	.09	1230	.70
SBL	2	3500	520	.15*	180	.05*
SBT	4	7000	1750	.25	1340	.19
SBR	f		200		60	
EBL	2	3500	100	.03*	250	.07*
EBT	4	7000	840	.12	2000	.29
EBR	1	1750	310	.18	700	.40
WBL	2	3500	950	.27	260	.07
WBT	3	5250	1890	.36*	1640	.31*
WBR	1	1750	60	.03	530	.30
Right Turn Adjustment					NBR	.25*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .82 1.16

2035 Cumulative With Project Alt 3 With Mitigat

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	260	.07	290	.08
NBT	3	5250	930	.18*	2010	.38*
NBR	f		160		1230	
SBL	2	3500	520	.15*	180	.05*
SBT	4	7000	1750	.25	1340	.19
SBR	f		200		60	
EBL	2	3500	100	.03	250	.07
EBT	4	7000	840	.12*	2000	.29*
EBR	1	1750	310	.18	700	.40
WBL	2	3500	950	.27*	260	.07*
WBT	4	7000	1890	.27	1640	.23
WBR	1	1750	60	.03	530	.30
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .82 .89

Project Alternative 3 Analysis

48. McBean & Newhall Ranch

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	260	.07	300	.09
NBT	3	5250	920	.18*	2000	.38*
NBR	1	1750	160	.09	1210	.69
SBL	2	3500	520	.15*	180	.05*
SBT	4	7000	1750	.25	1330	.19
SBR	f		190		60	
EBL	2	3500	100	.03*	230	.07*
EBT	4	7000	840	.12	2010	.29
EBR	1	1750	320	.18	670	.38
WBL	2	3500	940	.27	260	.07
WBT	3	5250	1870	.36*	1610	.31*
WBR	1	1750	60	.03	520	.30
Right Turn Adjustment					NBR	.24*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .82 1.15

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	260	.07	290	.08
NBT	3	5250	930	.18*	2010	.38*
NBR	1	1750	160	.09	1230	.70
SBL	2	3500	520	.15*	180	.05*
SBT	4	7000	1750	.25	1340	.19
SBR	f		200		60	
EBL	2	3500	100	.03*	250	.07*
EBT	4	7000	840	.12	2000	.29
EBR	1	1750	310	.18	700	.40
WBL	2	3500	950	.27	260	.07
WBT	3	5250	1890	.36*	1640	.31*
WBR	1	1750	60	.03	530	.30
Right Turn Adjustment					NBR	.25*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .82 1.16

2035 Cumulative With Project Alt 3 With Alt Mit

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	260	.07	290	.08
NBT	3	5250	930	.18*	2010	.38*
NBR	f		160		1230	
SBL	2	3500	520	.15*	180	.05*
SBT	4	7000	1750	.25	1340	.19
SBR	f		200		60	
EBL	2	3500	100	.03	250	.07
EBT	4	7000	840	.12*	2000	.29*
EBR	1	1750	310	.18	700	.40
WBL	2	3500	950	.27*	260	.07*
WBT	4	7000	1890	.27	1640	.23
WBR	1	1750	60	.03	530	.30
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .82 .89

Project Alternative 3 Analysis

49. McBean & Decoro

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	170	.10*	50	.03
NBT	3	5250	410	.08	1530	.29*
NBR	1	1750	160	.09	530	.30
SBL	1	1750	120	.07	160	.09*
SBT	3	5250	1420	.27*	680	.13
SBR	1	1750	180	.10	40	.02
EBL	2	3500	50	.01*	270	.08
EBT	2	3500	90	.03	400	.11*
EBR	1	1750	100	.06	100	.06
WBL	2	3500	440	.13	260	.07*
WBT	2	3500	540	.17*	130	.07
WBR	0	0	70		120	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.65**		**.66**

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	170	.10*	50	.03
NBT	3	5250	410	.08	1530	.29*
NBR	1	1750	170	.10	560	.32
SBL	1	1750	110	.06	160	.09*
SBT	3	5250	1420	.27*	680	.13
SBR	1	1750	180	.10	40	.02
EBL	2	3500	50	.01*	280	.08
EBT	2	3500	80	.02	380	.11*
EBR	1	1750	100	.06	100	.06
WBL	2	3500	440	.13	260	.07*
WBT	2	3500	540	.17*	130	.07
WBR	0	0	70		120	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.65**		**.66**

Project Alternative 3 Analysis

51. Wiley Cyn & Lyons

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	160	.09*	310	.18*
NBT	2	3500	190	.05	640	.18
NBR	1	1750	180	.10	340	.19
SBL	1	1750	170	.10	130	.07
SBT	2	3500	490	.14*	850	.24*
SBR	1	1750	470	.27	570	.33
EBL	2	3500	260	.07	530	.15
EBT	2	3500	960	.27*	1280	.37*
EBR	1	1750	90	.05	10	.01
WBL	1	1750	170	.10*	280	.16*
WBT	3	5250	620	.12	1260	.27
WBR	0	0	20		160	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.70**		**1.05**

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	160	.09*	320	.18*
NBT	2	3500	190	.05	640	.18
NBR	1	1750	180	.10	330	.19
SBL	1	1750	170	.10	110	.06
SBT	2	3500	500	.14*	860	.25*
SBR	1	1750	470	.27	590	.34
EBL	2	3500	260	.07	540	.15
EBT	2	3500	970	.28*	1310	.37*
EBR	1	1750	100	.06	20	.01
WBL	1	1750	160	.09*	290	.17*
WBT	3	5250	630	.12	1260	.27
WBR	0	0	20		160	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.70**		**1.07**

2035 Cumulative With Project Alt 3 With Mitigat

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	160	.09*	320	.18*
NBT	2	3500	190	.05	640	.18
NBR	1	1750	180	.10	330	.19
SBL	1	1750	170	.10	110	.06
SBT	2	3500	500	.14*	860	.25*
SBR	1	1750	470	.27	590	.34
EBL	2	3500	260	.07	540	.15*
EBT	3	5250	970	.20*	1310	.25
EBR	0	0	100		20	
WBL	1	1750	160	.09*	290	.17
WBT	3	5250	630	.12	1260	.27*
WBR	0	0	20		160	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.62**		**.95**

Project Alternative 3 Analysis

54. Orchard Village & Wiley Cyn

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	40	.02	60	.03
NBT	2	3500	700	.30*	1010	.46*
NBR	0	0	340		610	
SBL	1	1750	570	.33*	670	.38*
SBT	2	3500	560	.16	1130	.32
SBR	1	1750	330	.19	160	.09
EBL	2	3500	240	.07	310	.09
EBT	2	3500	350	.13*	760	.25*
EBR	0	0	110		120	
WBL	1	1750	390	.22*	410	.23*
WBT	2	3500	660	.19	700	.20
WBR	1	1750	480	.27	550	.31
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION 1.08 1.42

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	40	.02	60	.03
NBT	2	3500	710	.30*	1000	.46*
NBR	0	0	340		600	
SBL	1	1750	570	.33*	650	.37*
SBT	2	3500	560	.16	1110	.32
SBR	1	1750	330	.19	180	.10
EBL	2	3500	240	.07	310	.09
EBT	2	3500	350	.13*	790	.27*
EBR	0	0	110		140	
WBL	1	1750	390	.22*	400	.23*
WBT	2	3500	660	.19	700	.20
WBR	1	1750	490	.28	550	.31
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION 1.08 1.43

2035 Cumulative With Project Alt 3 With Mitigat

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	40	.02	60	.03
NBT	2	3500	710	.20*	1000	.29*
NBR	1	1750	340	.19	600	.34
SBL	1	1750	570	.33*	650	.37*
SBT	2	3500	560	.16	1110	.32
SBR	1	1750	330	.19	180	.10
EBL	2	3500	240	.07	310	.09
EBT	2	3500	350	.13*	790	.27*
EBR	0	0	110		140	
WBL	1	1750	390	.22*	400	.23*
WBT	2	3500	660	.19	700	.20
WBR	1	1750	490	.28	550	.31
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .98 1.26

Project Alternative 3 Analysis

54. Orchard Village & Wiley Cyn

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	40	.02	60	.03
NBT	2	3500	700	.20*	1010	.29*
NBR	1	1750	340	.19	610	.35
SBL	1	1750	570	.33*	670	.38*
SBT	2	3500	560	.16	1130	.32
SBR	1	1750	330	.19	160	.09
EBL	2	3500	240	.07	310	.09
EBT	2	3500	350	.13*	760	.25*
EBR	0	0	110		120	
WBL	1	1750	390	.22*	410	.23*
WBT	2	3500	660	.19	700	.20
WBR	1	1750	480	.27	550	.31
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .98 1.25

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	40	.02	60	.03
NBT	2	3500	710	.20*	1000	.29*
NBR	1	1750	340	.19	600	.34
SBL	1	1750	570	.33*	650	.37*
SBT	2	3500	560	.16	1110	.32
SBR	1	1750	330	.19	180	.10
EBL	2	3500	240	.07	310	.09
EBT	2	3500	350	.13*	790	.27*
EBR	0	0	110		140	
WBL	1	1750	390	.22*	400	.23*
WBT	2	3500	660	.19	700	.20
WBR	1	1750	490	.28	550	.31
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .98 1.26

2035 Cumulative With Project Alt 3 With Alt Mit

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	40	.02	60	.03
NBT	2	3500	710	.20*	1000	.29*
NBR	1	1750	340	.19	600	.34
SBL	2	3500	570	.16*	650	.19*
SBT	2	3500	560	.25	1110	.37
SBR	0	0	330		180	
EBL	2	3500	240	.07	310	.09
EBT	2	3500	350	.13*	790	.27*
EBR	0	0	110		140	
WBL	1	1750	390	.22*	400	.23*
WBT	2	3500	660	.19	700	.20
WBR	1	1750	490	.28	550	.31
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .81 1.08

Project Alternative 3 Analysis

55. Orchard Village & McBean

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		940		850	
NBT	0.5	3500	60	.29*	60	.26*
NBR	2	3500	870	.25	1110	.32
SBL	1.5		10	.01	60	
SBT	1.5	5250	20	.01*	70	.02*
SBR	1	1750	10	.01	30	.02
EBL	1	1750	50	.03	40	.02
EBT	2.5	7000	480	.14*	900	{.25}*
EBR	1.5		860		1160	
WBL	2	3500	850	.24*	1170	.33*
WBT	3	5250	640	.12	920	.18
WBR	1	1750	30	.02	20	.01
Clearance Interval				.10*		.10*

Note: Assumes N/S Split Phasing
Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION **.78** **.96**

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		970		850	
NBT	0.5	3500	60	.29*	60	.26*
NBR	2	3500	860	.25	1090	.31
SBL	1.5		10	.01	60	
SBT	1.5	5250	20	.01*	70	.02*
SBR	1	1750	10	.01	30	.02
EBL	1	1750	50	.03	40	.02
EBT	2.5	7000	450	.13*	900	{.24}*
EBR	1.5		860	.25	1140	
WBL	2	3500	840	.24*	1190	.34*
WBT	3	5250	630	.12	930	.18
WBR	1	1750	30	.02	20	.01
Clearance Interval				.10*		.10*

Note: Assumes N/S Split Phasing
Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION **.77** **.96**

Project Alternative 3 Analysis

55. Orchard Village & McBean

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		940		850	
NBT	0.5	3500	60	.29*	60	.26*
NBR	2	3500	870	.25	1110	.32
SBL	0	0	10		60	
SBT	1	1750	20	.02*	70	.07*
SBR	d	1750	10	.01	30	.02
EBL	1	1750	50	.03	40	.02
EBT	3	5250	480	.14*	900	.26*
EBR	0	0	860	.49	1160	.66
WBL	2	3500	850	.24*	1170	.33*
WBT	3	5250	640	.13	920	.18
WBR	0	0	30		20	
Right Turn Adjustment			EBR	.13*	EBR	.20*
Clearance Interval				.10*		.10*

Note: Assumes N/S Split Phasing
Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .92 1.22

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		970		850	
NBT	0.5	3500	60	.29*	60	.26*
NBR	2	3500	860	.25	1090	.31
SBL	0	0	10		60	
SBT	1	1750	20	.02*	70	.07*
SBR	d	1750	10	.01	30	.02
EBL	1	1750	50	.03	40	.02
EBT	3	5250	450	.13*	900	.26*
EBR	0	0	860	.49	1140	.65
WBL	2	3500	840	.24*	1190	.34*
WBT	3	5250	630	.13	930	.18
WBR	0	0	30		20	
Right Turn Adjustment			EBR	.14*	EBR	.19*
Clearance Interval				.10*		.10*

Note: Assumes N/S Split Phasing
Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .92 1.22

Project Alternative 3 Analysis

57. Valencia & Magic Mtn

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	80	.05*	130	.07
NBT	3	5250	810	.21	1790	.47*
NBR	0	0	270		700	
SBL	1	1750	20	.01	50	.03*
SBT	3	5250	1660	.32*	1250	.24
SBR	2	3500	760	.22	580	.17
EBL	2	3500	510	.15	690	.20
EBT	2	3500	870	.27*	1320	.39*
EBR	0	0	70		40	
WBL	1	1750	670	.38*	460	.26*
WBT	2	3500	1040	.30	920	.26
WBR	1	1750	70	.04	40	.02
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION 1.12 1.25

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	80	.05*	130	.07
NBT	3	5250	810	.20	1780	.47*
NBR	0	0	260		680	
SBL	1	1750	20	.01	50	.03*
SBT	3	5250	1660	.32*	1240	.24
SBR	2	3500	770	.22	580	.17
EBL	2	3500	510	.15	640	.18
EBT	2	3500	890	.27*	1330	.39*
EBR	0	0	70		40	
WBL	1	1750	670	.38*	470	.27*
WBT	2	3500	1040	.30	910	.26
WBR	1	1750	70	.04	40	.02
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION 1.12 1.26

2035 Cumulative With Project Alt 3 With Mitigat

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	80	.05*	130	.07
NBT	3	5250	810	.20	1780	.47*
NBR	0	0	260		680	
SBL	1	1750	20	.01	50	.03*
SBT	3	5250	1660	.32*	1240	.24
SBR	2	3500	770	.22	580	.17
EBL	2	3500	510	.15	640	.18
EBT	2	3500	890	.27*	1330	.39*
EBR	0	0	70		40	
WBL	2	3500	670	.19*	470	.13*
WBT	2	3500	1040	.30	910	.26
WBR	1	1750	70	.04	40	.02
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .93 1.12

Project Alternative 3 Analysis

57. Valencia & Magic Mtn

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	80	.05*	130	.07
NBT	3	5250	810	.21	1790	.47*
NBR	0	0	270		700	
SBL	1	1750	20	.01	50	.03*
SBT	3	5250	1660	.32*	1250	.24
SBR	2	3500	760	.22	580	.17
EBL	2	3500	510	.15*	690	.20
EBT	2	3500	870	.27	1320	.39*
EBR	0	0	70		40	
WBL	2	3500	670	.19	460	.13*
WBT	2	3500	1040	.32*	920	.27
WBR	0	0	70		40	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .94 1.12

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	80	.05*	130	.07
NBT	3	5250	810	.20	1780	.47*
NBR	0	0	260		680	
SBL	1	1750	20	.01	50	.03*
SBT	3	5250	1660	.32*	1240	.24
SBR	2	3500	770	.22	580	.17
EBL	2	3500	510	.15*	640	.18
EBT	2	3500	890	.27	1330	.39*
EBR	0	0	70		40	
WBL	2	3500	670	.19	470	.13*
WBT	2	3500	1040	.32*	910	.27
WBR	0	0	70		40	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .94 1.12

2035 Cumulative With Project Alt 3 With Alt Mit

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	80	.05*	130	.07
NBT	3	5250	810	.20	1780	.47*
NBR	0	0	260		680	
SBL	1	1750	20	.01	50	.03*
SBT	3	5250	1660	.32*	1240	.24
SBR	2	3500	770	.22	580	.17
EBL	2	3500	510	.15*	640	.18*
EBT	3	5250	890	.18	1330	.26
EBR	0	0	70		40	
WBL	2	3500	670	.19	470	.13
WBT	2	3500	1040	.30*	910	.26*
WBR	1	1750	70	.04	40	.02
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .92 1.04

Project Alternative 3 Analysis

65. Bouquet & Soledad

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	20	.01*	100	.06
NBT	3	5250	710	.14	1810	.34*
NBR	1	1750	220	.13	510	.29
SBL	3	5250	380	.07	410	.08*
SBT	2.5	7000	1920	{.44}*	1420	{.28}
SBR	1.5		1270		850	
EBL	3	5250	330	.06*	1300	.25*
EBT	3	5250	870	.19	1150	.25
EBR	0	0	120		150	
WBL	3	5250	160	.03	380	.07
WBT	2.5	7000	910	.17*	960	{.21}*
WBR	1.5		300		640	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .78 .98

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	20	.01*	100	.06
NBT	3	5250	710	.14	1820	.35*
NBR	1	1750	220	.13	510	.29
SBL	3	5250	390	.07	410	.08*
SBT	2.5	7000	1920	{.45}*	1420	{.27}
SBR	1.5		1280		830	
EBL	3	5250	330	.06*	1300	.25*
EBT	3	5250	870	.19	1150	.25
EBR	0	0	120		150	
WBL	3	5250	160	.03	380	.07
WBT	2.5	7000	920	.18*	970	{.22}*
WBR	1.5		290		650	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .80 1.00

2035 Cumulative With Project Alt 3 With Mitigat

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	20	.01*	100	.06
NBT	4	7000	710	.10	1820	.26*
NBR	1	1750	220	.13	510	.29
SBL	3	5250	390	.07	410	.08*
SBT	2.5	7000	1920	{.45}*	1420	{.27}
SBR	1.5		1280		830	
EBL	3	5250	330	.06*	1300	.25*
EBT	3	5250	870	.19	1150	.25
EBR	0	0	120		150	
WBL	3	5250	160	.03	380	.07
WBT	2.5	7000	920	.18*	970	{.21}*
WBR	1.5		290		650	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .80 .90

Project Alternative 3 Analysis

66. Bouquet & Newhall Ranch

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	570	.16*	790	.23*
NBT	4	7000	570	.08	2500	.36
NBR	1	1750	310	.18	600	.34
SBL	1	1750	110	.06	70	.04
SBT	4	7000	2200	.31*	1480	.21*
SBR	1	1750	790	.45	420	.24
EBL	3	5250	240	.05	690	.13
EBT	3	5250	900	.17*	2060	.39*
EBR	2	3500	850	.24	1030	.29
WBL	2	3500	580	.17*	140	.04*
WBT	4	7000	1480	.21	1000	.14
WBR	1	1750	70	.04	90	.05
Right Turn Adjustment			SBR	.03*		
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR EBR

TOTAL CAPACITY UTILIZATION .94 .97

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	570	.16*	810	.23*
NBT	4	7000	570	.08	2530	.36
NBR	1	1750	310	.18	570	.33
SBL	1	1750	110	.06	70	.04
SBT	4	7000	2200	.31*	1470	.21*
SBR	1	1750	800	.46	430	.25
EBL	3	5250	240	.05	670	.13
EBT	3	5250	900	.17*	2080	.40*
EBR	2	3500	850	.24	1030	.29
WBL	2	3500	580	.17*	140	.04*
WBT	4	7000	1490	.21	1000	.14
WBR	1	1750	70	.04	90	.05
Right Turn Adjustment			SBR	.04*		
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR EBR

TOTAL CAPACITY UTILIZATION .95 .98

2035 Cumulative With Project Alt 3 With Mitigat

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	570	.16*	810	.23*
NBT	4	7000	570	.08	2530	.36
NBR	1	1750	310	.18	570	.33
SBL	1	1750	110	.06	70	.04
SBT	3.5	8750	2200	{.32}*	1470	{.21}*
SBR	1.5		800		430	{.05}
EBL	3	5250	240	.05	670	.13
EBT	3.5	8750	900	.17*	2080	{.32}*
EBR	1.5		850	.24	1030	
WBL	2	3500	580	.17*	140	.04*
WBT	4	7000	1490	.21	1000	.14
WBR	1	1750	70	.04	90	.05
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .92 .90

Project Alternative 3 Analysis

66. Bouquet & Newhall Ranch

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	570	.16*	790	.23*
NBT	4	7000	570	.08	2500	.36
NBR	1	1750	310	.18	600	.34
SBL	1	1750	110	.06	70	.04
SBT	4	7000	2200	.31*	1480	.21*
SBR	1	1750	790	.45	420	.24
EBL	3	5250	240	.05	690	.13
EBT	3	5250	900	.17*	2060	.39*
EBR	2	3500	850	.24	1030	.29
WBL	2	3500	580	.17*	140	.04*
WBT	4	7000	1480	.21	1000	.14
WBR	1	1750	70	.04	90	.05
Right Turn Adjustment			SBR	.03*		
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR EBR

TOTAL CAPACITY UTILIZATION .94 .97

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	570	.16*	810	.23*
NBT	4	7000	570	.08	2530	.36
NBR	1	1750	310	.18	570	.33
SBL	1	1750	110	.06	70	.04
SBT	4	7000	2200	.31*	1470	.21*
SBR	1	1750	800	.46	430	.25
EBL	3	5250	240	.05	670	.13
EBT	3	5250	900	.17*	2080	.40*
EBR	2	3500	850	.24	1030	.29
WBL	2	3500	580	.17*	140	.04*
WBT	4	7000	1490	.21	1000	.14
WBR	1	1750	70	.04	90	.05
Right Turn Adjustment			SBR	.04*		
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR EBR

TOTAL CAPACITY UTILIZATION .95 .98

2035 Cumulative With Project Alt 3 With Alt Mit

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	570	.16*	810	.23*
NBT	4	7000	570	.08	2530	.36
NBR	1	1750	310	.18	570	.33
SBL	1	1750	110	.06	70	.04
SBT	3.5	8750	2200	{.32}*	1470	{.21}*
SBR	1.5		800		430	{.05}
EBL	3	5250	240	.05	670	.13
EBT	3.5	8750	900	.17*	2080	{.32}*
EBR	1.5		850	.24	1030	
WBL	2	3500	580	.17*	140	.04*
WBT	4	7000	1490	.21	1000	.14
WBR	1	1750	70	.04	90	.05
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .92 .90

Project Alternative 3 Analysis

81. Commerce Ctr & Henry Mayo

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	0	.00	0	.00
NBT	3	4800	0	.00*	0	.00*
NBR	0	0	0		0	
SBL	2	2880	50	.02*	390	.14*
SBT	2	3200	0	.00	0	.00
SBR	1	1600	30	.02	60	.04
EBL	1	1600	710	.44*	320	.20*
EBT	2	3200	140	.04	290	.09
EBR	1	1600	0	.00	0	.00
WBL	1.5		0		0	
WBT	0.5	3200	20	.01*	10	.01*
WBR	1	1600	350	.22	430	.27
Right Turn Adjustment			WBR	.19*	WBR	.15*
Clearance Interval				.10*		.10*
Note: Assumes E/W Split Phasing						
TOTAL CAPACITY UTILIZATION				**.76**		**.60**

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	0	.00	0	.00
NBT	3	4800	0	.00*	0	.00*
NBR	0	0	0		0	
SBL	2	2880	70	.02*	390	.14*
SBT	2	3200	0	.00	0	.00
SBR	1	1600	30	.02	60	.04
EBL	1	1600	680	.43*	320	.20*
EBT	2	3200	150	.05	280	.09
EBR	1	1600	0	.00	0	.00
WBL	1.5		0		0	
WBT	0.5	3200	20	.01*	20	.01*
WBR	1	1600	410	.26	460	.29
Right Turn Adjustment			WBR	.23*	WBR	.17*
Clearance Interval				.10*		.10*
Note: Assumes E/W Split Phasing						
TOTAL CAPACITY UTILIZATION				**.79**		**.62**

Project Alternative 3 Analysis

82. Commerce Ctr & SR-126 EB

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	4800	1040	.22*	630	.13
NBR	f		20		120	
SBL	0	0	0		0	
SBT	2	3200	80	.03	450	.14*
SBR	f		380		1680	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.32**		**.24**

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	4800	1070	.22*	660	.14
NBR	f		20		120	
SBL	0	0	0		0	
SBT	2	3200	100	.03	440	.14*
SBR	f		390		1720	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.32**		**.24**

Project Alternative 3 Analysis

83. Commerce Ctr & SR-126 WB

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	2880	90	.03	300	.10*
NBT	3	4800	950	.20*	340	.07
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	3	4800	440	.09	2080	.43*
SBR	1	1600	160	.10	690	.43
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	2880	20	.01*	40	.01*
WBT	0	0	0		0	
WBR	2	3200	1660	.52	580	.18
Right Turn Adjustment			WBR	.51*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.82**		**.64**

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	2880	90	.03	310	.11*
NBT	3	4800	980	.20*	360	.08
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	3	4800	460	.10	2120	.44*
SBR	1	1600	150	.09	670	.42
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	2880	20	.01*	40	.01*
WBT	0	0	0		0	
WBR	2	3200	1660	.52	600	.19
Right Turn Adjustment			WBR	.51*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.82**		**.66**

Project Alternative 3 Analysis

105. Westridge & Valencia

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	0	.00	0	.00
NBT	1	1600	0	.00*	0	.00*
NBR	1	1600	0	.00	0	.00
SBL	2	2880	40	.01*	80	.03*
SBT	1	1600	0	.00	0	.00
SBR	1	1600	40	.03	30	.02
EBL	1	1600	30	.02	30	.02*
EBT	3	4800	2080	.43*	1690	.35
EBR	0	0	0		0	
WBL	1	1600	0	.00	0	.00
WBT	3	4800	1480	.31	2030	.42*
WBR	1	1600	40	.03	100	.06
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.54**		**.57**

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	0	.00	0	.00
NBT	1	1600	0	.00*	0	.00*
NBR	1	1600	0	.00	0	.00
SBL	2	2880	90	.03*	280	.10*
SBT	1	1600	0	.00	0	.00
SBR	1	1600	70	.04	50	.03
EBL	1	1600	60	.04	40	.03*
EBT	3	4800	2070	.43*	1610	.34
EBR	0	0	0		0	
WBL	1	1600	0	.00	0	.00
WBT	3	4800	1440	.30	2070	.43*
WBR	1	1600	230	.14	180	.11
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.56**		**.66**

Project Alternative 3 Analysis

108. McBean & Pico Cyn

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	270	.09*	300	.10*
SBT	0	0	0		0	
SBR	1	1600	100	.06	260	.16
EBL	1	1600	270	.17*	160	.10*
EBT	2	3200	300	.09	980	.31
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	310	.19*	790	.49*
WBR	1	1600	160	.10	320	.20
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.55**		**.79**

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	2880	270	.09*	290	.10*
SBT	0	0	0		0	
SBR	1	1600	100	.06	260	.16
EBL	1	1600	260	.16*	150	.09*
EBT	2	3200	300	.09	1060	.33
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	310	.19*	800	.50*
WBR	1	1600	170	.11	320	.20
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.54**		**.79**

Project Alternative 3 Analysis

109. McBean & Poe

2035 Cumulative Without Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	160	.10*	320	.20*
NBT	2	3200	270	.08	170	.05
NBR	0	0	0		0	
SBL	1	1600	0	.00	0	.00
SBT	2	3200	110	.03*	260	.08*
SBR	d	1600	160	.10	430	.27
EBL	1	1600	420	.26*	210	.13*
EBT	1	1600	0	.00	0	.00
EBR	1	1600	260	.16	290	.18
WBL	1	1600	0	.00	0	.00
WBT	1	1600	0	.00*	0	.00*
WBR	0	0	0		0	
Right Turn Adjustment					SBR	.09*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.49		.60

2035 Cumulative With Project Alt 3

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	160	.10*	320	.20*
NBT	2	3200	260	.08	160	.05
NBR	0	0	0		0	
SBL	1	1600	0	.00	0	.00
SBT	2	3200	110	.03*	260	.08*
SBR	d	1600	160	.10	430	.27
EBL	1	1600	410	.26*	210	.13*
EBT	1	1600	0	.00	0	.00
EBR	1	1600	260	.16	280	.18
WBL	1	1600	0	.00	0	.00
WBT	1	1600	0	.00*	0	.00*
WBR	0	0	0		0	
Right Turn Adjustment					SBR	.09*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.49		.60

Alternative Mitigation Improvements Analysis

17. I-5 NB On/Off & Lyons Ave

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		240	{.07}*	567	{.16}*
NBT	0.5	3500	0	.07	2	.16
NBR	f		302		546	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1750	158	.09*	244	.14*
EBT	2	3500	682	.19	1192	.34
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	5250	730	.21*	1023	.26*
WBR	0	0	471	.27	366	
Right Turn Adjustment			WBR	.06*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.53**		**.66**

2021 Cumulative Without Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		302	{.09}*	713	{.20}*
NBT	0.5	3500	4	.09	1	.20
NBR	f		292		477	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1750	109	.06*	167	.10*
EBT	2	3500	995	.28	1260	.36
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	5250	917	.26*	1114	.32*
WBR	0	0	449		612	.35
Right Turn Adjustment					WBR	.03*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.51**		**.75**

2021 Cumulative With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		302	{.09}*	715	{.20}*
NBT	0.5	3500	4	.09	1	.20
NBR	f		292		477	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1750	113	.06*	168	.10*
EBT	2	3500	1031	.29	1293	.37
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	5250	933	.27*	1115	.32*
WBR	0	0	478	.27	648	.37
Right Turn Adjustment					WBR	.05*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.52**		**.77**

2035 Cumulative Without Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		230	{.07}*	738	{.21}*
NBT	0.5	3500	10	.07	0	.21
NBR	f		280		400	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1750	70	.04	89	.05
EBT	2	3500	1354	.39*	1524	.44*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	5250	1161	.31	1308	.37
WBR	0	0	473		933	.53
Right Turn Adjustment					WBR	.14*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.56**		**.89**

Alternative Mitigation Improvements Analysis

17. I-5 NB On/Off & Lyons Ave

2035 Cumulative With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		230	{.07}*	740	{.21}*
NBT	0.5	3500	10	.07	0	.21
NBR	f		280		400	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1750	70	.04	90	.05
EBT	2	3500	1390	.40*	1560	.45*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	5250	1180	.32	1310	.37
WBR	0	0	500		970	.55
Right Turn Adjustment					WBR	.15*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.57**		**.91**

2035 Cumulative With Project With Alt Mitigatio

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		230	{.07}*	740	{.21}*
NBT	0.5	3500	10	.07	0	.21
NBR	f		280		400	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1750	70	.04	90	.05
EBT	2	3500	1390	.40*	1560	.45*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2.5	7000	1180	.24	1310	.33
WBR	1.5		500		970	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.57**		**.76**

Alternative Mitigation Improvements Analysis

48. McBean & Newhall Ranch

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	394	.11*	353	.10
NBT	3	5250	431	.08	1499	.29*
NBR	1	1750	212	.12	690	.39
SBL	2	3500	275	.08	206	.06*
SBT	4	7000	1542	.22*	706	.10
SBR	f		187		48	
EBL	2	3500	103	.03*	198	.06
EBT	4	7000	566	.08	1402	.20*
EBR	1	1750	193	.11	323	.18
WBL	2	3500	639	.18	440	.13*
WBT	3	5250	1397	.27*	727	.14
WBR	1	1750	111	.06	270	.15
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.73**		**.78**

2021 Cumulative Without Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	225	.06*	334	.10
NBT	3	5250	657	.13	1660	.32*
NBR	1	1750	238	.14	1070	.61
SBL	2	3500	414	.12	181	.05*
SBT	4	7000	1579	.23*	1047	.15
SBR	f		270		44	
EBL	2	3500	97	.03*	401	.11
EBT	4	7000	753	.11	1511	.22*
EBR	1	1750	302	.17	520	.30
WBL	2	3500	466	.13	425	.12*
WBT	3	5250	1893	.36*	1154	.22
WBR	1	1750	93	.05	349	.20
Right Turn Adjustment					NBR	.20*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.78**		**1.01**

2021 Cumulative With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	225	.06*	334	.10
NBT	3	5250	672	.13	1664	.32*
NBR	1	1750	286	.16	1137	.65
SBL	2	3500	414	.12	181	.05*
SBT	4	7000	1633	.23*	1075	.15
SBR	f		284		46	
EBL	2	3500	97	.03*	432	.12*
EBT	4	7000	763	.11	1541	.22
EBR	1	1750	302	.17	520	.30
WBL	2	3500	481	.14	428	.12
WBT	3	5250	1929	.37*	1216	.23*
WBR	1	1750	93	.05	349	.20
Right Turn Adjustment					NBR	.23*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.79**		**1.05**

2021 Cumulative With Project With Alt Mitigatio

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	225	.06*	334	.10
NBT	3	5250	672	.13	1664	.32*
NBR	2	3500	286	.08	1137	.32
SBL	2	3500	414	.12	181	.05*
SBT	4	7000	1633	.23*	1075	.15
SBR	f		284		46	
EBL	2	3500	97	.03*	432	.12*
EBT	4	7000	763	.11	1541	.22
EBR	1	1750	302	.17	520	.30
WBL	2	3500	481	.14	428	.12
WBT	3	5250	1929	.37*	1216	.23*
WBR	1	1750	93	.05	349	.20
Clearance Interval				.10*		.10*
Note: Assumes Right-Turn Overlap for NBR						
TOTAL CAPACITY UTILIZATION				**.79**		**.82**

Alternative Mitigation Improvements Analysis

48. McBean & Newhall Ranch

2035 Cumulative Without Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	250	.07	290	.08
NBT	3	5250	895	.17*	1986	.38*
NBR	1	1750	124	.07	1156	.66
SBL	2	3500	530	.15*	180	.05*
SBT	4	7000	1720	.25	1304	.19
SBR	f		187		58	
EBL	2	3500	90	.03*	237	.07*
EBT	4	7000	831	.12	1967	.28
EBR	1	1750	320	.18	620	.35
WBL	2	3500	908	.26	260	.07
WBT	3	5250	1819	.35*	1576	.30*
WBR	1	1750	60	.03	520	.30
Right Turn Adjustment			EBR	.01*	NBR	.21*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .81 1.11

2035 Cumulative With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	250	.07	290	.08
NBT	3	5250	910	.17*	2010	.38*
NBR	1	1750	150	.09	1210	.69
SBL	2	3500	530	.15*	180	.05*
SBT	4	7000	1750	.25	1330	.19
SBR	f		190		60	
EBL	2	3500	90	.03	250	.07*
EBT	4	7000	840	.12*	2000	.29
EBR	1	1750	320	.18	620	.35
WBL	2	3500	990	.28*	260	.07
WBT	3	5250	1840	.35	1630	.31*
WBR	1	1750	60	.03	520	.30
Right Turn Adjustment			EBR	.01*	NBR	.24*
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .83 1.15

2035 Cumulative With Project With Alt Mitigatio

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	250	.07	290	.08
NBT	3	5250	910	.17*	2010	.38*
NBR	2	3500	150	.04	1210	.35
SBL	2	3500	530	.15*	180	.05*
SBT	4	7000	1750	.25	1330	.19
SBR	f		190		60	
EBL	2	3500	90	.03	250	.07
EBT	4	7000	840	.12*	2000	.29*
EBR	1	1750	320	.18	620	.35
WBL	2	3500	990	.28*	260	.07*
WBT	4	7000	1840	.26	1630	.23
WBR	1	1750	60	.03	520	.30
Right Turn Adjustment			EBR	.01*		
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .83 .89

Alternative Mitigation Improvements Analysis

54. Orchard Village & Wiley Cyn

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	218	.12*	132	.08
NBT	2	3500	754	.25	807	.27*
NBR	0	0	113		153	
SBL	1	1750	117	.07	124	.07*
SBT	2	3500	777	.22*	731	.21
SBR	1	1750	283	.16	215	.12
EBL	2	3500	172	.05	282	.08
EBT	2	3500	125	.07*	254	.12*
EBR	0	0	272	.16	179	
WBL	1	1750	152	.09*	98	.06*
WBT	2	3500	268	.08	240	.07
WBR	1	1750	96	.05	101	.06
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.60**		**.62**

2021 Cumulative Without Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	157	.09	122	.07
NBT	2	3500	797	.28*	935	.35*
NBR	0	0	173		275	
SBL	1	1750	114	.07*	121	.07*
SBT	2	3500	733	.21	1032	.29
SBR	1	1750	312	.18	239	.14
EBL	2	3500	206	.06	294	.08
EBT	2	3500	193	.11*	336	.14*
EBR	0	0	201	.11	171	
WBL	1	1750	164	.09*	156	.09*
WBT	2	3500	313	.09	346	.10
WBR	1	1750	74	.04	96	.05
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.65**		**.75**

2021 Cumulative With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	157	.09	122	.07
NBT	2	3500	816	.28*	947	.35*
NBR	0	0	173		275	
SBL	1	1750	114	.07*	123	.07*
SBT	2	3500	745	.21	1068	.31
SBR	1	1750	312	.18	239	.14
EBL	2	3500	206	.06	294	.08
EBT	2	3500	193	.11*	336	.14*
EBR	0	0	201	.11	171	
WBL	1	1750	164	.09*	156	.09*
WBT	2	3500	313	.09	346	.10
WBR	1	1750	78	.04	97	.06
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.65**		**.75**

2035 Cumulative Without Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	40	.02	70	.04
NBT	2	3500	690	.20*	990	.28*
NBR	1	1750	340	.19	600	.34
SBL	1	1750	565	.32*	669	.38*
SBT	2	3500	538	.15	1059	.30
SBR	1	1750	340	.19	190	.11
EBL	2	3500	240	.07	310	.09
EBT	2	3500	360	.13*	757	.26*
EBR	0	0	110		148	
WBL	1	1750	390	.22*	400	.23*
WBT	2	3500	670	.19	690	.20
WBR	1	1750	495	.28	556	.32
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.97**		**1.25**

Alternative Mitigation Improvements Analysis

54. Orchard Village & Wiley Cyn

2035 Cumulative With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	40	.02	70	.04
NBT	2	3500	710	.20*	1000	.29*
NBR	1	1750	340	.19	600	.34
SBL	1	1750	570	.33*	680	.39*
SBT	2	3500	550	.16	1090	.31
SBR	1	1750	340	.19	190	.11
EBL	2	3500	240	.07	310	.09
EBT	2	3500	360	.13*	760	.26*
EBR	0	0	110		150	
WBL	1	1750	390	.22*	400	.23*
WBT	2	3500	670	.19	690	.20
WBR	1	1750	500	.29	560	.32
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.98**		**1.27**

2035 Cumulative With Project With Alt Mitigatio

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	40	.02	70	.04
NBT	2	3500	710	.20*	1000	.29*
NBR	1	1750	340	.19	600	.34
SBL	2	3500	570	.16*	680	.19*
SBT	2	3500	550	.25	1090	.37
SBR	0	0	340		190	
EBL	2	3500	240	.07	310	.09
EBT	2	3500	360	.13*	760	.26*
EBR	0	0	110		150	
WBL	1	1750	390	.22*	400	.23*
WBT	2	3500	670	.19	690	.20
WBR	1	1750	500	.29	560	.32
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.81**		**1.07**

Alternative Mitigation Improvements Analysis

55. Orchard Village & McBean

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		327		215	
NBT	0.5	3500	39	.10*	17	.07*
NBR	2	3500	592	.17	757	.22
SBL	0	0	25		64	
SBT	1	1750	32	.03*	40	.06*
SBR	d	1750	19	.01	31	.02
EBL	1	1750	38	.02	28	.02
EBT	3	5250	436	.12*	860	.22*
EBR	0	0	253	.14	319	
WBL	2	3500	778	.22*	799	.23*
WBT	3	5250	507	.11	566	.11
WBR	0	0	48		19	
Clearance Interval				.10*		.10*

Note: Assumes N/S Split Phasing
Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .57 .68

2021 Cumulative Without Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		443		341	
NBT	0.5	3500	48	.14*	36	.11*
NBR	2	3500	736	.21	899	.26
SBL	1.5		18		62	
SBT	1.5	5250	27	.01*	53	.02*
SBR	1	1750	15	.01	31	.02
EBL	1	1750	43	.02	33	.02
EBT	3	5250	521	.15*	926	.26*
EBR	0	0	378	.22	592	.34
WBL	2	3500	801	.23*	1015	.29*
WBT	3	5250	623	.13	753	.15
WBR	0	0	44		19	
Clearance Interval				.10*		.10*

Note: Assumes N/S Split Phasing
Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .63 .78

2021 Cumulative With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		472		357	
NBT	0.5	3500	48	.15*	36	.11*
NBR	2	3500	736	.21	899	.26
SBL	1.5		18		62	
SBT	1.5	5250	27	.01*	53	.02*
SBR	1	1750	15	.01	31	.02
EBL	1	1750	43	.02	33	.02
EBT	3	5250	521	.15*	927	.26*
EBR	0	0	392	.22	632	.36
WBL	2	3500	801	.23*	1015	.29*
WBT	3	5250	623	.13	754	.15
WBR	0	0	44		19	
Right Turn Adjustment					EBR	.02*
Clearance Interval				.10*		.10*

Note: Assumes N/S Split Phasing
Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .64 .80

2035 Cumulative Without Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		958		843	
NBT	0.5	3500	60	.29*	60	.26*
NBR	2	3500	850	.24	1100	.31
SBL	1.5		10	.01	60	
SBT	1.5	5250	20	.01*	70	.02*
SBR	1	1750	10	.01	30	.02
EBL	1	1750	50	.03	40	.02
EBT	2.5	7000	470	.13*	909	{.24}*
EBR	1.5		831		1106	
WBL	2	3500	840	.24*	1190	.34*
WBT	3	5250	620	.12	899	.17
WBR	1	1750	30	.02	20	.01
Clearance Interval				.10*		.10*

Note: Assumes N/S Split Phasing
Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .77 .96

Alternative Mitigation Improvements Analysis

55. Orchard Village & McBean

2035 Cumulative With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		990		860	
NBT	0.5	3500	60	.30*	60	.26*
NBR	2	3500	850	.24	1100	.31
SBL	1.5		10	.01	60	
SBT	1.5	5250	20	.01*	70	.02*
SBR	1	1750	10	.01	30	.02
EBL	1	1750	50	.03	40	.02
EBT	2.5	7000	470	.13*	910	{.25}*
EBR	1.5		850		1150	
WBL	2	3500	840	.24*	1190	.34*
WBT	3	5250	620	.12	900	.17
WBR	1	1750	30	.02	20	.01
Clearance Interval				.10*		.10*

Note: Assumes N/S Split Phasing
Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION	**.78**	**.97**

Alternative Mitigation Improvements Analysis

57. Valencia & Magic Mtn

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	32	.02*	56	.03
NBT	3	5250	682	.14	1406	.30*
NBR	0	0	71		154	
SBL	1	1750	25	.01	56	.03*
SBT	3	5250	1632	.31*	1115	.21
SBR	2	3500	429	.12	371	.11
EBL	2	3500	145	.04	500	.14*
EBT	2	3500	153	.05*	420	.13
EBR	0	0	29		29	
WBL	1	1750	176	.10*	148	.08
WBT	2	3500	351	.10	303	.09*
WBR	1	1750	26	.01	61	.03
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.58**		**.66**

2021 Cumulative Without Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	49	.03*	80	.05
NBT	3	5250	878	.19	1700	.39*
NBR	0	0	97		336	
SBL	1	1750	23	.01	45	.03*
SBT	3	5250	1786	.34*	1326	.25
SBR	2	3500	565	.16	532	.15
EBL	2	3500	323	.09	445	.13
EBT	2	3500	303	.10*	590	.18*
EBR	0	0	48		34	
WBL	1	1750	378	.22*	219	.13*
WBT	2	3500	390	.11	445	.13
WBR	1	1750	32	.02	47	.03
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.79**		**.83**

2021 Cumulative With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	49	.03*	80	.05
NBT	3	5250	881	.19	1706	.39*
NBR	0	0	97		338	
SBL	1	1750	23	.01	45	.03*
SBT	3	5250	1795	.34*	1331	.25
SBR	2	3500	636	.18	555	.16
EBL	2	3500	353	.10	471	.13
EBT	2	3500	328	.11*	614	.19*
EBR	0	0	55		34	
WBL	1	1750	383	.22*	219	.13*
WBT	2	3500	431	.12	470	.13
WBR	1	1750	32	.02	47	.03
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.80**		**.84**

2035 Cumulative Without Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	80	.05*	130	.07
NBT	3	5250	816	.20	1803	.48*
NBR	0	0	260		696	
SBL	1	1750	20	.01	50	.03*
SBT	3	5250	1628	.31*	1216	.23
SBR	2	3500	744	.21	578	.17
EBL	2	3500	482	.14	582	.17
EBT	2	3500	855	.26*	1260	.37*
EBR	0	0	63		40	
WBL	2	3500	657	.19*	448	.13*
WBT	2	3500	994	.30	917	.27
WBR	0	0	70		40	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				**.91**		**1.11**

Alternative Mitigation Improvements Analysis

57. Valencia & Magic Mtn

2035 Cumulative With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	80	.05*	130	.07
NBT	3	5250	820	.21	1810	.48*
NBR	0	0	260		700	
SBL	1	1750	20	.01	50	.03*
SBT	3	5250	1640	.31*	1220	.23
SBR	2	3500	790	.23	600	.17
EBL	2	3500	510	.15*	620	.18
EBT	2	3500	900	.28	1300	.38*
EBR	0	0	70		40	
WBL	2	3500	660	.19	450	.13*
WBT	2	3500	1050	.32*	960	.29
WBR	0	0	70		40	
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .93 1.12

2035 Cumulative With Project With Alt Mitigatio

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1750	80	.05*	130	.07
NBT	3	5250	820	.21	1810	.48*
NBR	0	0	260		700	
SBL	1	1750	20	.01	50	.03*
SBT	3	5250	1640	.31*	1220	.23
SBR	2	3500	790	.23	600	.17
EBL	2	3500	510	.15*	620	.18*
EBT	3	5250	900	.18	1300	.26
EBR	0	0	70		40	
WBL	2	3500	660	.19	450	.13
WBT	2	3500	1050	.30*	960	.27*
WBR	1	1750	70	.04	40	.02
Clearance Interval				.10*		.10*

TOTAL CAPACITY UTILIZATION .91 1.06

Alternative Mitigation Improvements Analysis

66. Bouquet & Newhall Ranch

Existing (2009/2010) Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	291	.08*	445	.13
NBT	4	7000	561	.08	2044	.29*
NBR	1	1750	33	.02	44	.03
SBL	1	1750	324	.19	210	.12*
SBT	4	7000	2079	.30*	1328	.19
SBR	1	1750	584	.33	356	.20
EBL	3	5250	260	.05*	1020	.19*
EBT	3	5250	369	.07	786	.15
EBR	2	3500	261	.07	454	.13
WBL	2	3500	120	.03	209	.06
WBT	4	7000	890	.13*	634	.09*
WBR	1	1750	89	.05	359	.21
Right Turn Adjustment					WBR	.03*
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR EBR

TOTAL CAPACITY UTILIZATION .66 .82

2021 Cumulative Without Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	407	.12*	585	.17
NBT	4	7000	569	.08	2396	.34*
NBR	1	1750	159	.09	377	.22
SBL	1	1750	230	.13	153	.09*
SBT	4	7000	2351	.34*	1443	.21
SBR	1	1750	521	.30	443	.25
EBL	3	5250	308	.06	895	.17
EBT	3	5250	761	.14*	1437	.27*
EBR	2	3500	496	.14	651	.19
WBL	2	3500	393	.11*	257	.07*
WBT	4	7000	1358	.19	846	.12
WBR	1	1750	85	.05	271	.15
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR EBR

TOTAL CAPACITY UTILIZATION .81 .87

2021 Cumulative With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	413	.12*	592	.17
NBT	4	7000	569	.08	2401	.34*
NBR	1	1750	159	.09	377	.22
SBL	1	1750	230	.13	153	.09*
SBT	4	7000	2394	.34*	1443	.21
SBR	1	1750	530	.30	460	.26
EBL	3	5250	318	.06	918	.17
EBT	3	5250	801	.15*	1491	.28*
EBR	2	3500	500	.14	660	.19
WBL	2	3500	403	.12*	258	.07*
WBT	4	7000	1385	.20	881	.13
WBR	1	1750	85	.05	271	.15
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR EBR

TOTAL CAPACITY UTILIZATION .83 .88

2021 Cumulative With Project With Alt Mitigatio

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	413	.12*	592	.17
NBT	4	7000	569	.08	2401	.34*
NBR	1	1750	159	.09	377	.22
SBL	1	1750	230	.13	153	.09*
SBT	4	7000	2394	.34*	1443	.21
SBR	1	1750	530	.30	460	.26
EBL	3	5250	318	.06*	918	.17*
EBT	3.5	8750	801	{.13}	1491	{.21}
EBR	1.5		500		660	{.21}
WBL	2	3500	403	.12	258	.07
WBT	4	7000	1385	.20*	881	.13*
WBR	1	1750	85	.05	271	.15
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR

TOTAL CAPACITY UTILIZATION .82 .83

Alternative Mitigation Improvements Analysis

66. Bouquet & Newhall Ranch

2035 Cumulative Without Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	559	.16*	781	.22*
NBT	4	7000	570	.08	2529	.36
NBR	1	1750	310	.18	590	.34
SBL	1	1750	100	.06	70	.04
SBT	4	7000	2195	.31*	1470	.21*
SBR	1	1750	763	.44	417	.24
EBL	3	5250	230	.04	662	.13
EBT	3	5250	873	.17*	2005	.38*
EBR	2	3500	836	.24	1029	.29
WBL	2	3500	587	.17*	140	.04*
WBT	4	7000	1446	.21	986	.14
WBR	1	1750	70	.04	100	.06
Right Turn Adjustment			SBR	.02*		
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR EBR

TOTAL CAPACITY UTILIZATION .93 .95

2035 Cumulative With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	560	.16*	790	.23*
NBT	4	7000	570	.08	2530	.36
NBR	1	1750	310	.18	590	.34
SBL	1	1750	100	.06	70	.04
SBT	4	7000	2200	.31*	1470	.21*
SBR	1	1750	810	.46	430	.25
EBL	3	5250	240	.05	680	.13
EBT	3	5250	890	.17*	2050	.39*
EBR	2	3500	840	.24	1040	.30
WBL	2	3500	590	.17*	140	.04*
WBT	4	7000	1470	.21	1010	.14
WBR	1	1750	70	.04	100	.06
Right Turn Adjustment			SBR	.04*		
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR EBR

TOTAL CAPACITY UTILIZATION .95 .97

2035 Cumulative With Project With Alt Mitigatio

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3500	560	.16*	790	.23*
NBT	4	7000	570	.08	2530	.36
NBR	1	1750	310	.18	590	.34
SBL	1	1750	100	.06	70	.04
SBT	4	7000	2200	.31*	1470	.21*
SBR	1	1750	810	.46	430	.25
EBL	2	3500	240	.07	680	.19*
EBT	4	7000	890	.13*	2050	.29
EBR	2	3500	840	.24	1040	.30
WBL	2	3500	590	.17*	140	.04
WBT	4	7000	1470	.21	1010	.14*
WBR	1	1750	70	.04	100	.06
Right Turn Adjustment			SBR	.06*		
Clearance Interval				.10*		.10*

Note: Assumes Right-Turn Overlap for SBR EBR

TOTAL CAPACITY UTILIZATION .93 .87

1: Newhall Ranch Rd & McBean
2021 Cumulative with Project - PM Peak Hour w/Single NBR (Yield)

Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	432	1541	520	428	1216	349	334	1664	1137	181	1075	46
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			Free
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	39.0	39.0	8.0	39.0	39.0	8.0	43.0	43.0	8.0	43.0	
Total Split (s)	17.0	39.0	39.0	17.0	39.0	39.0	26.0	84.0	84.0	10.0	68.0	0.0
Total Split (%)	11.3%	26.0%	26.0%	11.3%	26.0%	26.0%	17.3%	56.0%	56.0%	6.7%	45.3%	0.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	
Act Effct Green (s)	13.0	35.0	35.0	13.0	35.0	35.0	19.7	80.0	80.0	6.0	66.3	150.0
Actuated g/C Ratio	0.09	0.23	0.23	0.09	0.23	0.23	0.13	0.53	0.53	0.04	0.44	1.00
v/c Ratio	1.53	1.08	1.09	1.51	0.86	0.94	0.78	0.65	1.33	1.39	0.40	0.03
Control Delay	296.4	102.9	98.6	291.0	61.8	77.6	75.5	26.3	180.1	264.4	29.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	296.4	102.9	98.6	291.0	61.8	77.6	75.5	26.3	180.1	264.4	29.2	0.0
LOS	F	F	F	F	E	E	E	C	F	F	C	A
Approach Delay		135.6			113.8			87.3			60.9	
Approach LOS		F			F			F			E	

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.53
Intersection Signal Delay: 102.9 — Intersection LOS: F
Intersection Capacity Utilization 116.3% — ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 1: Newhall Ranch Rd & McBean

ø1	ø2	ø3	ø4
10 s	84 s	17 s	39 s

ø5	ø6	ø7	ø8
26 s	68 s	17 s	39 s

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	455	1622	547	451	1280	367	352	1752	1197	191	1132	48
v/c Ratio	1.53	1.08	1.09	1.51	0.86	0.94	0.78	0.65	1.33	1.39	0.40	0.03
Control Delay	296.4	102.9	98.6	291.0	61.8	77.6	75.5	26.3	180.1	264.4	29.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	296.4	102.9	98.6	291.0	61.8	77.6	75.5	26.3	180.1	264.4	29.2	0.0
Queue Length 50th (ft)	~320	~515	~426	~315	352	292	173	435	~1393	~127	218	0
Queue Length 95th (ft)	#434	#592	#662	#429	397	#497	227	485	#1662	#212	254	0
Internal Link Dist (ft)		966			1071			1013			825	
Turn Bay Length (ft)	290		290	290		300	300		300	270		270
Base Capacity (vph)	298	1495	501	298	1495	389	496	2712	902	137	2832	1528
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.53	1.08	1.09	1.51	0.86	0.94	0.71	0.65	1.33	1.39	0.40	0.03

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

1: Newhall Ranch Rd & McBean
2021 Cumulative with Project - PM Peak Hour w/Single NBR (Signal, no RTOR)

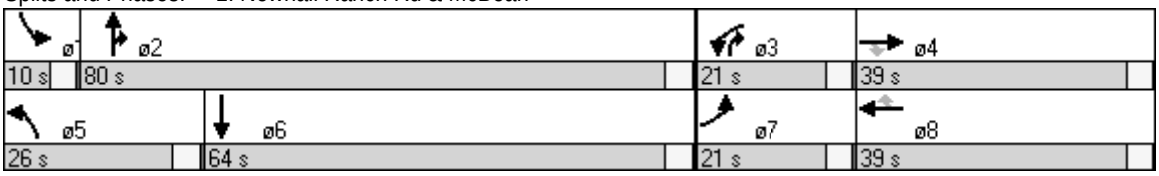
Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	432	1541	520	428	1216	349	334	1664	1137	181	1075	46
Turn Type	Prot		Perm	Prot		Perm	Prot		pt+ov	Prot		Free
Protected Phases	7	4		3	8		5	2	2 3	1	6	
Permitted Phases			4			8						Free
Detector Phase	7	4	4	3	8	8	5	2	2 3	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	8.0	39.0	39.0	8.0	39.0	39.0	8.0	43.0		8.0	43.0	
Total Split (s)	21.0	39.0	39.0	21.0	39.0	39.0	26.0	80.0	101.0	10.0	64.0	0.0
Total Split (%)	14.0%	26.0%	26.0%	14.0%	26.0%	26.0%	17.3%	53.3%	67.3%	6.7%	42.7%	0.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	Max		None	Max	
Act Effct Green (s)	17.0	35.0	35.0	17.0	35.0	35.0	19.7	76.0	97.0	6.0	62.3	150.0
Actuated g/C Ratio	0.11	0.23	0.23	0.11	0.23	0.23	0.13	0.51	0.65	0.04	0.42	1.00
v/c Ratio	1.17	1.08	1.10	1.16	0.86	0.95	0.78	0.68	1.17	1.39	0.43	0.03
Control Delay	156.2	102.9	101.1	152.9	61.8	78.5	75.5	29.5	113.5	264.4	32.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	156.2	102.9	101.1	152.9	61.8	78.5	75.5	29.5	113.5	264.4	32.0	0.0
LOS	F	F	F	F	E	E	E	C	F	F	C	A
Approach Delay		111.8			84.3			64.9			63.3	
Approach LOS		F			F			E			E	

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.39
Intersection Signal Delay: 82.1 — Intersection LOS: F
Intersection Capacity Utilization 116.3% — ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 1: Newhall Ranch Rd & McBean



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	455	1622	547	451	1280	367	352	1752	1197	191	1132	48
v/c Ratio	1.17	1.08	1.10	1.16	0.86	0.95	0.78	0.68	1.17	1.39	0.43	0.03
Control Delay	156.2	102.9	101.1	152.9	61.8	78.5	75.5	29.5	113.5	264.4	32.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	156.2	102.9	101.1	152.9	61.8	78.5	75.5	29.5	113.5	264.4	32.0	0.0
Queue Length 50th (ft)	~272	~515	~431	~268	352	294	173	462	~1390	~127	228	0
Queue Length 95th (ft)	#386	#592	#667	#381	397	#500	227	516	#1656	#212	266	0
Internal Link Dist (ft)		966			1071			1013			825	
Turn Bay Length (ft)	290		290	290		300	300		300	270		270
Base Capacity (vph)	389	1495	498	389	1495	388	496	2576	1024	137	2661	1528
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.17	1.08	1.10	1.16	0.86	0.95	0.71	0.68	1.17	1.39	0.43	0.03

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

1: Newhall Ranch Rd & McBean
2021 Cumulative with Project - PM Peak Hour w/Dual NBR (Yield)

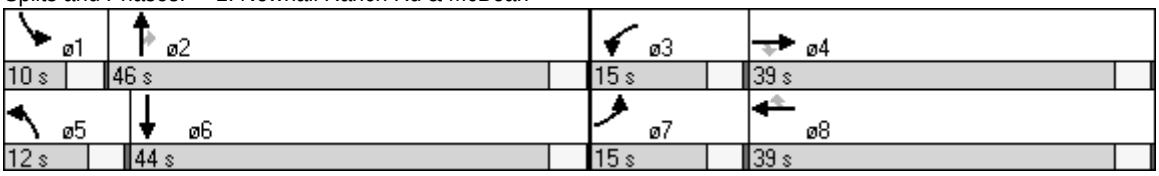
Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	432	1541	520	428	1216	349	334	1664	1137	181	1075	46
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			Free
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	39.0	39.0	8.0	39.0	39.0	8.0	43.0	43.0	8.0	43.0	
Total Split (s)	15.0	39.0	39.0	15.0	39.0	39.0	12.0	46.0	46.0	10.0	44.0	0.0
Total Split (%)	13.6%	35.5%	35.5%	13.6%	35.5%	35.5%	10.9%	41.8%	41.8%	9.1%	40.0%	0.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	
Act Effct Green (s)	11.0	35.0	35.0	11.0	35.0	35.0	8.0	42.0	42.0	6.0	40.0	110.0
Actuated g/C Ratio	0.10	0.32	0.32	0.10	0.32	0.32	0.07	0.38	0.38	0.05	0.36	1.00
v/c Ratio	1.33	0.80	1.00	1.31	0.63	0.68	1.41	0.90	0.97	1.02	0.49	0.03
Control Delay	205.2	37.8	68.7	200.6	33.6	29.1	243.9	39.8	41.1	123.4	27.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	205.2	37.8	68.7	200.6	33.6	29.1	243.9	39.8	41.1	123.4	27.9	0.0
LOS	F	D	E	F	C	C	F	D	D	F	C	A
Approach Delay		73.2			68.7			62.0			40.2	
Approach LOS		E			E			E			D	

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Natural Cycle: 110
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.41
Intersection Signal Delay: 63.5 — Intersection LOS: E
Intersection Capacity Utilization 94.9% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: Newhall Ranch Rd & McBean



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	455	1622	547	451	1280	367	352	1752	1197	191	1132	48
v/c Ratio	1.33	0.80	1.00	1.31	0.63	0.68	1.41	0.90	0.97	1.02	0.49	0.03
Control Delay	205.2	37.8	68.7	200.6	33.6	29.1	243.9	39.8	41.1	123.4	27.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	205.2	37.8	68.7	200.6	33.6	29.1	243.9	39.8	41.1	123.4	27.9	0.0
Queue Length 50th (ft)	~214	302	~318	~212	222	155	~172	421	341	~73	177	0
Queue Length 95th (ft)	#317	349	#554	#314	262	265	#266	490	#521	#148	211	0
Internal Link Dist (ft)		966			1071			1013			825	
Turn Bay Length (ft)	290		290	290		300	300		300	270		270
Base Capacity (vph)	343	2039	547	343	2039	542	250	1942	1239	187	2330	1528
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.33	0.80	1.00	1.31	0.63	0.68	1.41	0.90	0.97	1.02	0.49	0.03

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

1: Newhall Ranch Rd & McBean
2021 Cumulative with Project - PM Peak Hour w/Dual NBR (Signal, no RTOR)

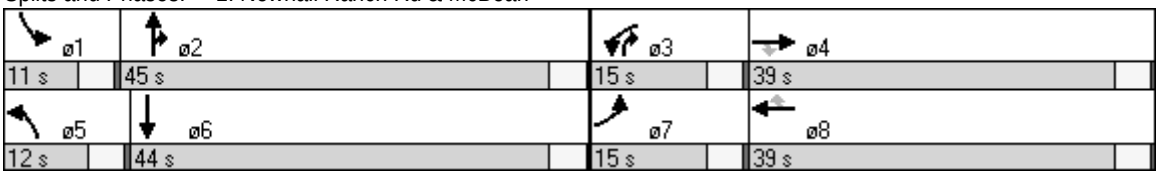
Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	432	1541	520	428	1216	349	334	1664	1137	181	1075	46
Turn Type	Prot		Perm	Prot		Perm	Prot		pt+ov	Prot		Free
Protected Phases	7	4		3	8		5	2	2 3	1	6	
Permitted Phases			4			8						Free
Detector Phase	7	4	4	3	8	8	5	2	2 3	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	8.0	39.0	39.0	8.0	39.0	39.0	8.0	43.0		8.0	43.0	
Total Split (s)	15.0	39.0	39.0	15.0	39.0	39.0	12.0	45.0	60.0	11.0	44.0	0.0
Total Split (%)	13.6%	35.5%	35.5%	13.6%	35.5%	35.5%	10.9%	40.9%	54.5%	10.0%	40.0%	0.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	Max		None	Max	
Act Effct Green (s)	11.0	35.0	35.0	11.0	35.0	35.0	8.0	41.0	56.0	7.0	40.0	110.0
Actuated g/C Ratio	0.10	0.32	0.32	0.10	0.32	0.32	0.07	0.37	0.51	0.06	0.36	1.00
v/c Ratio	1.33	0.80	0.98	1.31	0.63	0.66	1.41	0.92	0.84	0.88	0.49	0.03
Control Delay	205.2	37.8	62.2	200.6	33.6	26.9	243.9	42.6	30.2	87.4	27.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	205.2	37.8	62.2	200.6	33.6	26.9	243.9	42.6	30.2	87.4	27.9	0.0
LOS	F	D	E	F	C	C	F	D	C	F	C	A
Approach Delay		71.9			68.3			59.6			35.2	
Approach LOS		E			E			E			D	

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Natural Cycle: 110
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.41
Intersection Signal Delay: 61.4 — Intersection LOS: E
Intersection Capacity Utilization 94.9% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: Newhall Ranch Rd & McBean



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	455	1622	547	451	1280	367	352	1752	1197	191	1132	48
v/c Ratio	1.33	0.80	0.98	1.31	0.63	0.66	1.41	0.92	0.84	0.88	0.49	0.03
Control Delay	205.2	37.8	62.2	200.6	33.6	26.9	243.9	42.6	30.2	87.4	27.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	205.2	37.8	62.2	200.6	33.6	26.9	243.9	42.6	30.2	87.4	27.9	0.0
Queue Length 50th (ft)	~214	302	303	~212	222	143	~172	428	397	70	177	0
Queue Length 95th (ft)	#317	349	#536	#314	262	251	#266	#530	511	#136	211	0
Internal Link Dist (ft)		966			1071			1013			825	
Turn Bay Length (ft)	290		290	290		300	300		300	270		270
Base Capacity (vph)	343	2039	558	343	2039	553	250	1895	1419	218	2330	1528
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.33	0.80	0.98	1.31	0.63	0.66	1.41	0.92	0.84	0.88	0.49	0.03

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	SWL	SWT	SWR
Lane Configurations											
Volume (vph)	123	1068	239	122	947	275	294	336	156	346	97
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Prot		Perm
Protected Phases	1	6		5	2		7	4	3	8	
Permitted Phases	6		6	2		2					8
Detector Phase	1	6	6	5	2	2	7	4	3	8	8
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	8.0	20.0	20.0
Total Split (s)	14.0	54.0	54.0	15.0	55.0	55.0	21.0	28.0	23.0	30.0	30.0
Total Split (%)	11.7%	45.0%	45.0%	12.5%	45.8%	45.8%	17.5%	23.3%	19.2%	25.0%	25.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None
Act Effct Green (s)	59.7	51.0	51.0	60.4	51.3	51.3	14.6	20.4	15.0	20.8	20.8
Actuated g/C Ratio	0.54	0.46	0.46	0.54	0.46	0.46	0.13	0.18	0.13	0.19	0.19
v/c Ratio	0.45	0.70	0.31	0.51	0.61	0.33	0.69	0.80	0.69	0.55	0.28
Control Delay	17.7	28.4	9.8	19.8	26.0	3.5	55.7	48.2	62.1	44.6	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.7	28.4	9.8	19.8	26.0	3.5	55.7	48.2	62.1	44.6	13.6
LOS	B	C	A	B	C	A	E	D	E	D	B
Approach Delay		24.4			20.8			51.0		44.1	
Approach LOS		C			C			D		D	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 111.5
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 31.2 Intersection LOS: C
Intersection Capacity Utilization 73.0% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Orchard Village & Wiley Cyn

ø1	ø2	ø3	ø4
14 s	55 s	23 s	28 s
ø5	ø6	ø7	ø8
15 s	54 s	21 s	30 s

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	SWL	SWT	SWR
Lane Group Flow (vph)	129	1124	252	128	997	289	309	534	164	364	102
v/c Ratio	0.45	0.70	0.31	0.51	0.61	0.33	0.69	0.80	0.69	0.55	0.28
Control Delay	17.7	28.4	9.8	19.8	26.0	3.5	55.7	48.2	62.1	44.6	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.7	28.4	9.8	19.8	26.0	3.5	55.7	48.2	62.1	44.6	13.6
Queue Length 50th (ft)	43	346	42	42	292	0	112	173	116	127	10
Queue Length 95th (ft)	80	471	108	80	393	51	165	244	193	179	58
Internal Link Dist (ft)		1099			1310			1298		1131	
Turn Bay Length (ft)	200		150	200		325	200		170		80
Base Capacity (vph)	303	1617	807	277	1629	884	514	755	292	791	420
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.70	0.31	0.46	0.61	0.33	0.60	0.71	0.56	0.46	0.24

Intersection Summary

1: Orchard Village & Wiley Cyn
2035 Cumulative without Project - PM Peak Hour w/Hospital Mitigation (120 sec)

Timings

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	SWL	SWT	SWR
Lane Configurations											
Volume (vph)	669	1059	190	70	990	600	310	757	400	690	556
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Prot		Perm
Protected Phases	1	6		5	2		7	4	3	8	
Permitted Phases	6		6	2		2					8
Detector Phase	1	6	6	5	2	2	7	4	3	8	8
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	8.0	20.0	20.0
Total Split (s)	33.0	57.0	57.0	10.0	34.0	34.0	16.0	29.0	24.0	37.0	37.0
Total Split (%)	27.5%	47.5%	47.5%	8.3%	28.3%	28.3%	13.3%	24.2%	20.0%	30.8%	30.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None
Act Effct Green (s)	63.0	55.0	55.0	36.0	30.0	30.0	12.0	25.0	20.0	33.0	33.0
Actuated g/C Ratio	0.52	0.46	0.46	0.30	0.25	0.25	0.10	0.21	0.17	0.28	0.28
v/c Ratio	1.44	0.69	0.25	0.39	1.18	1.04	0.95	1.30	1.43	0.75	0.93
Control Delay	239.9	29.0	8.7	24.4	131.8	73.2	91.5	183.8	247.9	45.3	46.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	239.9	29.0	8.7	24.4	131.8	73.2	91.5	183.8	247.9	45.3	46.1
LOS	F	C	A	C	F	E	F	F	F	D	D
Approach Delay		100.5			106.1			160.3		94.8	
Approach LOS		F			F			F		F	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.44
Intersection Signal Delay: 111.8 — Intersection LOS: F
Intersection Capacity Utilization 125.6% — ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 1: Orchard Village & Wiley Cyn

ø1	ø2	ø3	ø4
33 s	34 s	24 s	29 s

ø5	ø6	ø7	ø8
10 s	57 s	16 s	37 s

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	SWL	SWT	SWR
Lane Group Flow (vph)	704	1115	200	74	1042	632	326	953	421	726	585
v/c Ratio	1.44	0.69	0.25	0.39	1.18	1.04	0.95	1.30	1.43	0.75	0.93
Control Delay	239.9	29.0	8.7	24.4	131.8	73.2	91.5	183.8	247.9	45.3	46.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	239.9	29.0	8.7	24.4	131.8	73.2	91.5	183.8	247.9	45.3	46.1
Queue Length 50th (ft)	~697	363	32	27	~508	~356	131	~495	~441	270	267
Queue Length 95th (ft)	#934	444	80	53	#642	#587	#223	#628	#641	342	#501
Internal Link Dist (ft)		1099			1310			1298		1131	
Turn Bay Length (ft)	200		150	200		325	200		170		80
Base Capacity (vph)	488	1622	795	190	885	606	343	732	295	973	628
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.44	0.69	0.25	0.39	1.18	1.04	0.95	1.30	1.43	0.75	0.93

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

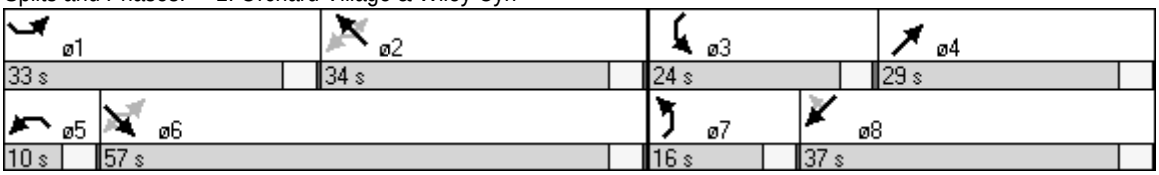
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	SWL	SWT	SWR
Lane Configurations											
Volume (vph)	680	1090	190	70	1000	600	310	760	400	690	560
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Prot		Perm
Protected Phases	1	6		5	2		7	4	3	8	
Permitted Phases	6		6	2		2					8
Detector Phase	1	6	6	5	2	2	7	4	3	8	8
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	8.0	20.0	20.0
Total Split (s)	33.0	57.0	57.0	10.0	34.0	34.0	16.0	29.0	24.0	37.0	37.0
Total Split (%)	27.5%	47.5%	47.5%	8.3%	28.3%	28.3%	13.3%	24.2%	20.0%	30.8%	30.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None
Act Effct Green (s)	63.0	55.0	55.0	36.0	30.0	30.0	12.0	25.0	20.0	33.0	33.0
Actuated g/C Ratio	0.52	0.46	0.46	0.30	0.25	0.25	0.10	0.21	0.17	0.28	0.28
v/c Ratio	1.47	0.71	0.25	0.41	1.19	1.04	0.95	1.31	1.43	0.75	0.93
Control Delay	250.3	29.6	8.9	25.2	136.5	73.8	91.5	186.6	247.9	45.3	46.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	250.3	29.6	8.9	25.2	136.5	73.8	91.5	186.6	247.9	45.3	46.6
LOS	F	C	A	C	F	E	F	F	F	D	D
Approach Delay		104.2			109.3			162.4		94.9	
Approach LOS		F			F			F		F	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 110
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.47
Intersection Signal Delay: 114.1 Intersection LOS: F
Intersection Capacity Utilization 126.6% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 1: Orchard Village & Wiley Cyn



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	SWL	SWT	SWR
Lane Group Flow (vph)	716	1147	200	74	1053	632	326	958	421	726	589
v/c Ratio	1.47	0.71	0.25	0.41	1.19	1.04	0.95	1.31	1.43	0.75	0.93
Control Delay	250.3	29.6	8.9	25.2	136.5	73.8	91.5	186.6	247.9	45.3	46.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	250.3	29.6	8.9	25.2	136.5	73.8	91.5	186.6	247.9	45.3	46.6
Queue Length 50th (ft)	~716	378	33	27	~517	~358	131	~499	~441	270	270
Queue Length 95th (ft)	#954	462	82	53	#652	#589	#223	#633	#641	342	#505
Internal Link Dist (ft)		1099			1310			1298		1131	
Turn Bay Length (ft)	200		150	200		325	200		170		80
Base Capacity (vph)	488	1622	793	182	885	605	343	732	295	973	630
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.47	0.71	0.25	0.41	1.19	1.04	0.95	1.31	1.43	0.75	0.93

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

1: Orchard Village & Wiley Cyn
2035 Cumulative with Project - PM Peak Hour w/Hospital+Mission Mitigation (120 sec)

Timings

Lane Group	SEL	SET	NWL	NWT	NWR	NEL	NET	SWL	SWT	SWR
Lane Configurations										
Volume (vph)	680	1090	70	1000	600	310	760	400	690	560
Turn Type	Prot		Prot		Perm	Prot		Prot		Perm
Protected Phases	1	6	5	2		7	4	3	8	
Permitted Phases					2					8
Detector Phase	1	6	5	2	2	7	4	3	8	8
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	8.0	20.0	20.0	8.0	20.0	8.0	20.0	20.0
Total Split (s)	24.0	53.0	9.0	38.0	38.0	18.0	31.0	27.0	40.0	40.0
Total Split (%)	20.0%	44.2%	7.5%	31.7%	31.7%	15.0%	25.8%	22.5%	33.3%	33.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None
Act Effct Green (s)	20.0	49.0	5.0	34.0	34.0	13.7	27.0	23.0	36.3	36.3
Actuated g/C Ratio	0.17	0.41	0.04	0.28	0.28	0.11	0.22	0.19	0.30	0.30
v/c Ratio	1.25	0.95	1.00	1.05	0.91	0.83	1.21	1.24	0.68	0.88
Control Delay	168.8	48.0	162.5	84.3	38.4	70.2	146.8	172.3	40.7	36.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	168.8	48.0	162.5	84.3	38.4	70.2	146.8	172.3	40.7	36.2
LOS	F	D	F	F	D	E	F	F	D	D
Approach Delay		89.9		71.1			127.4		71.1	
Approach LOS		F		E			F		E	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.25
Intersection Signal Delay: 87.3 — Intersection LOS: F
Intersection Capacity Utilization 108.3% — ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 1: Orchard Village & Wiley Cyn

ø1	ø2	ø3	ø4
24 s	38 s	27 s	31 s

ø5	ø6	ø7	ø8
9 s	53 s	18 s	40 s

Lane Group	SEL	SET	NWL	NWT	NWR	NEL	NET	SWL	SWT	SWR
Lane Group Flow (vph)	716	1347	74	1053	632	326	958	421	726	589
v/c Ratio	1.25	0.95	1.00	1.05	0.91	0.83	1.21	1.24	0.68	0.88
Control Delay	168.8	48.0	162.5	84.3	38.4	70.2	146.8	172.3	40.7	36.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	168.8	48.0	162.5	84.3	38.4	70.2	146.8	172.3	40.7	36.2
Queue Length 50th (ft)	~357	515	~59	~467	248	128	~473	~405	260	250
Queue Length 95th (ft)	#477	#672	#161	#602	#488	#198	#607	#605	330	#472
Internal Link Dist (ft)		1099		1310			1298		1131	
Turn Bay Length (ft)	200		200		325	200		170		80
Base Capacity (vph)	572	1425	74	1003	691	400	790	339	1070	673
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.25	0.95	1.00	1.05	0.91	0.81	1.21	1.24	0.68	0.88

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

1: External Performance by approach

Approach	NB	All
Total Delay (hr)	0.5	0.5
Delay / Veh (s)	2.2	2.2
Total Stops	1	1
Travel Dist (mi)	171.3	171.3
Travel Time (hr)	4.4	4.4
Avg Speed (mph)	39	39
Fuel Used (gal)	66.0	66.0
HC Emissions (g)	10	10
CO Emissions (g)	4058	4058
NOx Emissions (g)	39	39
Vehicles Entered	762	762
Vehicles Exited	775	775
Hourly Exit Rate	1550	1550
Input Volume	1526	1526
% of Volume	102	102
Denied Entry Before	0	0
Denied Entry After	0	0
Density (ft/veh)		

2: Bend Performance by approach

Approach	NB	SB	All
Total Delay (hr)	12.9	5.5	18.5
Delay / Veh (s)	41.4	11.1	22.8
Total Stops	629	551	1180
Travel Dist (mi)	526.3	151.3	677.6
Travel Time (hr)	24.9	9.5	34.4
Avg Speed (mph)	21	16	20
Fuel Used (gal)	163.3	95.8	259.2
HC Emissions (g)	21	11	31
CO Emissions (g)	6468	4174	10642
NOx Emissions (g)	77	44	121
Vehicles Entered	1137	1801	2938
Vehicles Exited	1114	1789	2903
Hourly Exit Rate	2228	3578	5806
Input Volume	2264	3724	5988
% of Volume	98	96	97
Denied Entry Before	1	0	1
Denied Entry After	0	0	0
Density (ft/veh)	199	95	170

1: External Performance by approach

Approach	NB	All
Total Delay (hr)	0.6	0.6
Delay / Veh (s)	2.4	2.4
Total Stops	0	0
Travel Dist (mi)	185.4	185.4
Travel Time (hr)	4.8	4.8
Avg Speed (mph)	39	39
Fuel Used (gal)	72.2	72.2
HC Emissions (g)	11	11
CO Emissions (g)	4411	4411
NOx Emissions (g)	42	42
Vehicles Entered	825	825
Vehicles Exited	837	837
Hourly Exit Rate	1674	1674
Input Volume	1590	1590
% of Volume	105	105
Denied Entry Before	0	0
Denied Entry After	0	0
Density (ft/veh)		

2: Bend Performance by approach

Approach	NB	SB	All
Total Delay (hr)	8.0	5.5	13.6
Delay / Veh (s)	24.2	11.3	16.5
Total Stops	425	544	969
Travel Dist (mi)	559.5	148.8	708.3
Travel Time (hr)	20.8	9.4	30.2
Avg Speed (mph)	27	16	24
Fuel Used (gal)	159.5	95.5	255.0
HC Emissions (g)	22	11	32
CO Emissions (g)	6691	4178	10869
NOx Emissions (g)	83	43	126
Vehicles Entered	1211	1770	2981
Vehicles Exited	1177	1760	2937
Hourly Exit Rate	2354	3520	5874
Input Volume	2330	3800	6130
% of Volume	101	93	96
Denied Entry Before	0	0	0
Denied Entry After	0	0	0
Density (ft/veh)	239	96	194

REFERENCES

NORTH VALENCIA ANNEXATION AREA
TRAFFIC STUDY

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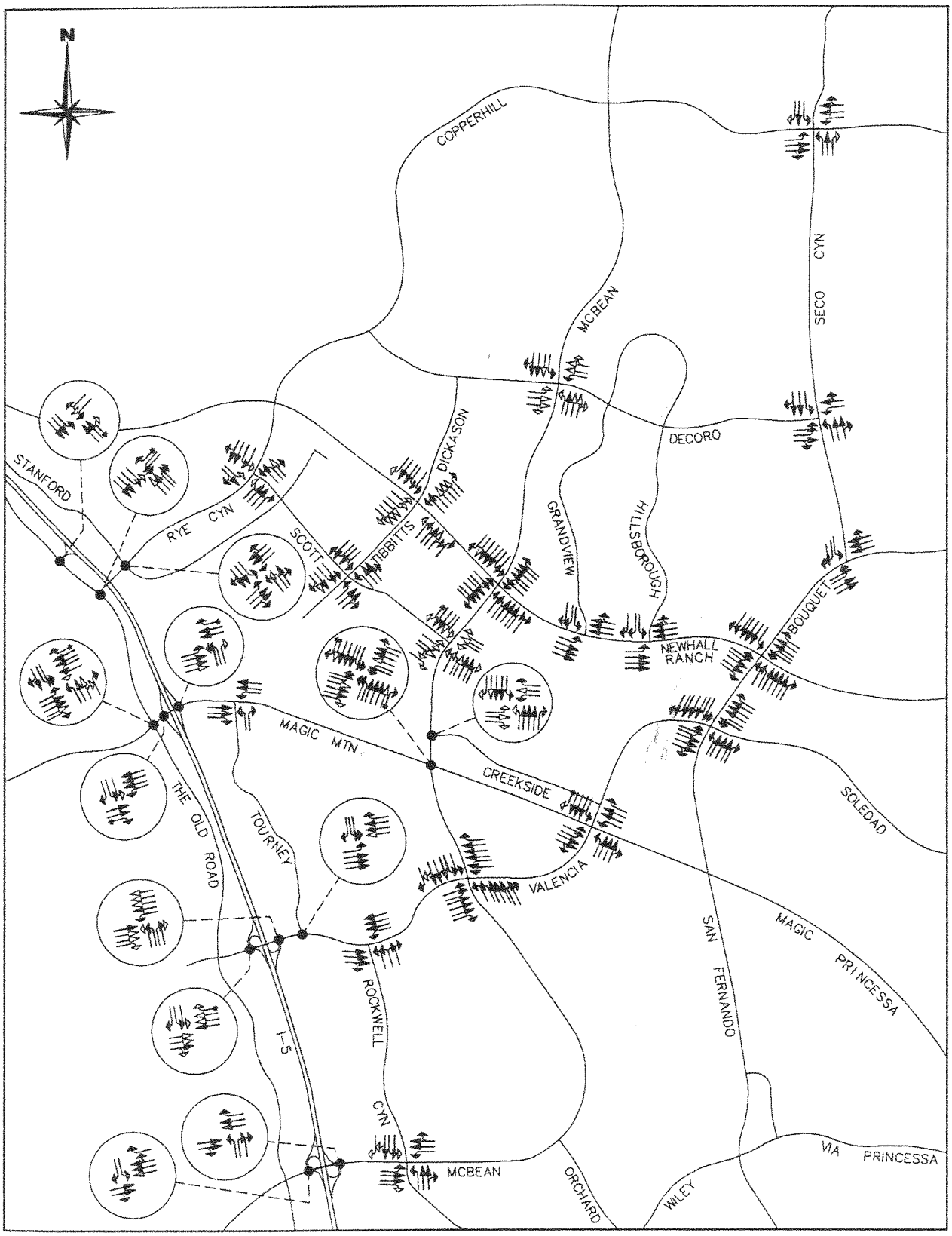
July 31, 1997



LEGEND
- EXISTING LANE
- FUTURE LANE
- FREE RIGHT-TURN LANE

Figure III-10

INTERSECTION LANE CONFIGURATIONS
-INTERIM YEAR SETTING

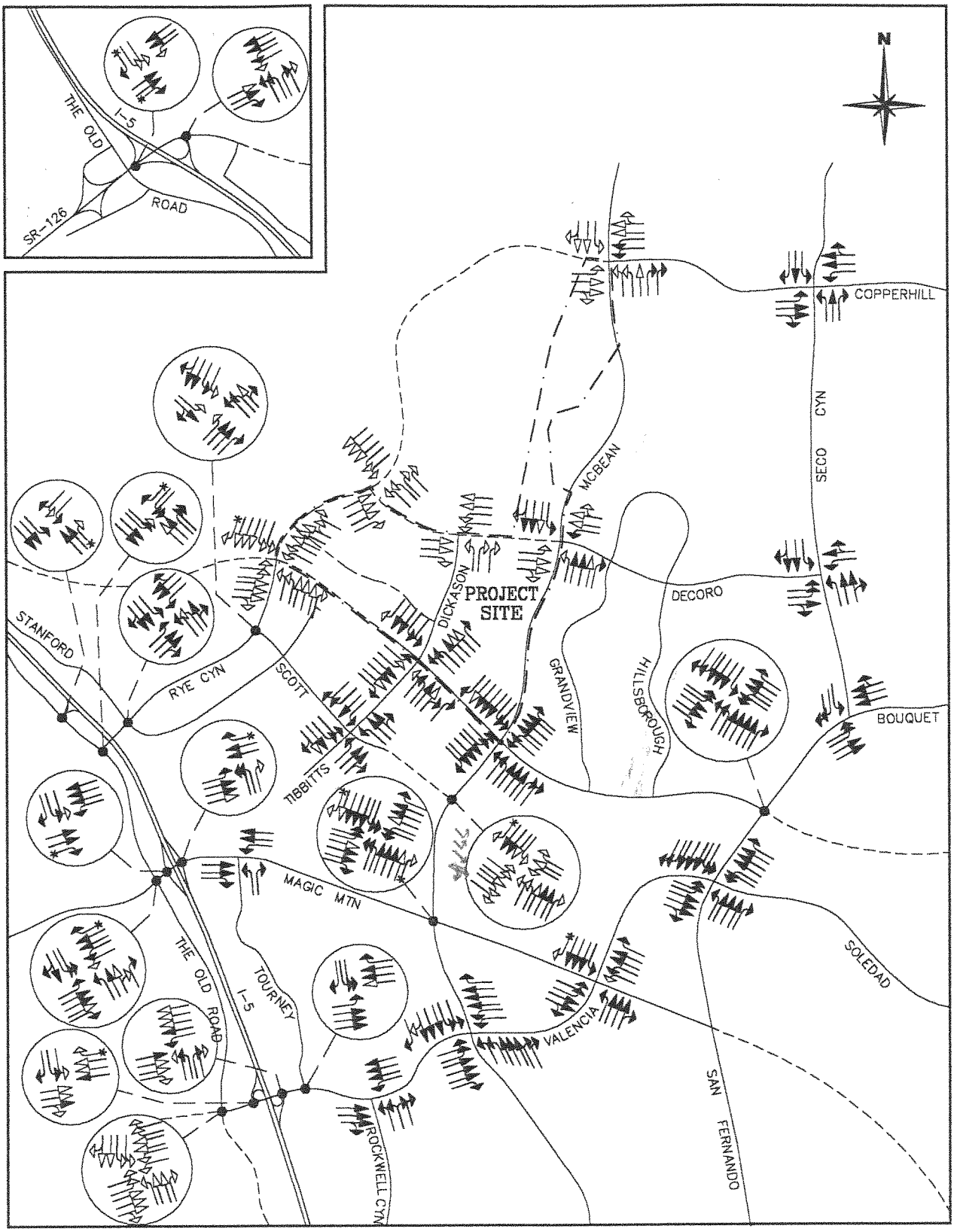
NORTH VALENCIA SPECIFIC PLAN NO. 2
TRAFFIC STUDY

DRAFT

Prepared by:

Austin-Foust Associates, Inc.
2020 North Tustin Avenue
Santa Ana, California 92705-7827
(714) 667-0496

March 2, 1999



LEGEND

- EXISTING LANE
- FUTURE LANE
- FREE RIGHT-TURN LANE
- NEW ROADWAY LINK

Figure III-9

INTERSECTION LANE CONFIGURATIONS
-INTERIM YEAR CONDITIONS

VIA PRINCESSA
BRIDGE AND MAJOR THOROUGHFARE CONSTRUCTION FEE DISTRICT UPDATE REPORT

Prepared for:

CITY OF SANTA CLARITA TRANSPORTATION and ENGINEERING SERVICES

MARCH, 2002

AS APPROVED BY CITY COUNCIL ON MARCH 26, 2002

TABLE 7 INTERSECTION IMPROVEMENTS

ID	Location	Description of Improvements	Estimated Cost
VPI-4	Wiley Canyon Road and Calgrove Boulevard	New 3-way signal	$154,800
VPI-5	Wiley Canyon Road and Lyons Avenue	Intersection augmentation, Right of way acquisition	$1,040,690
VPI-8	Wiley Canyon Road and Orchard Village	Intersection augmentation, Right of way acquisition	$446,000
VPI-11	Via Princessa and Magic Mountain Parkway	New 3-way signal	$154,800
VPI-16	Lyons Avenue and Orchard Village Road/Valley Boulevard	Intersection augmentation, Right of way acquisition	$668,990
VPI-18	Lyons Avenue and Newhall Avenue	Intersection augmentation, Right of way acquisition	$705,600
VPI-20	Lyons Avenue (Dockweiler Drive) and Sierra Highway	Intersection augmentation, Right of way acquisition	$3,842,870
VPI-25	San Fernando Road and 13th Street	Intersection augmentation, Signal Modification, Railroad gates	$129,000
VPI-29	San Fernando Road and Newhall Avenue	Intersection augmentation	$212,850
VPI-32	San Fernando Road and Sierra Highway	Intersection augmentation, Right of way acquisition	$1,745,590
VPI-36	16th Street and Newhall Avenue	New 4-way signal	$180,600
VPI-41	San Fernando and 16th Street	New 4-way signal	$180,600
VPI-42	Via Princessa and Claibourne Lane	New 3-way signal	$154,800
VPI-43	Via Princessa and Rolling Ridge Drive	New 3-way signal	$154,800
VPI-44	Via Princessa and Santa Clarita Parkway	New 4-way signal	$180,600
		TOTAL:	$9,952,590

VALENCIA B&T DISTRICT
REPORT UPDATE

Prepared for:

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS
900 S. Fremont Ave.
Alhambra, CA 91803-1331

CITY OF SANTA CLARITA DEPARTMENT OF PUBLIC WORKS
23920 Valencia Blvd
Suite 300
Santa Clarita, CA 91355-2196

March 2008

INTERSECTIONS		
INTERSECTION #	LOCATION	IMPROVEMENT
55	Valencia and Bouquet	Add 4th northbound through lane
56	McBean and Magic Mountain	Signal modification and augmentation for westbound and eastbound dedicated right-turn lanes; stripe eastbound and westbound 3rd through lanes; Striping for 4th northbound through lane; pork chop modification to accommodate 4th eastbound and westbound through lane
57	Valencia and Magic Mountain	Add northbound right-turn lane, east and westbound through lanes, additional westbound left-turn lane (relocate raised median) and westbound right-turn lane; obtain right-of-way.
59	Valencia and McBean	Add 4th Westbound Through Lane
85	Rye Canyon Road and Avenue Stanford	Signal Modification and de-facto right-turn pocket. Right-of-way acquisition
104	Copper Hill and Camino del Arte	Phase 1 – New 4-way signal (retrofitted for interim 3-way signalization) Phase 2 – Signal modification from 3 way to 4-way
105	Copper Hill and West Creek Dr./West Hills Dr.	New 4-way signal
106	Copper Hill and West Hills Drive	New 4-way signal
115	McBean and Skycrest	New 4-way signal

Traffic Mitigation Agreement Fair Share Payment,
Austin-Foust Associates, Inc.

TRAFFIC MITIGATION AGREEMENT

FAIR SHARE PAYMENT

THIS AGREEMENT, entered into effective this ____ day of _____, 2011 by and between the State of California, acting by and through its Department of Transportation, hereinafter referred to as "Department", and Newhall Land, hereinafter referred to as "Developer", and collectively the "Parties" without regard for number or gender.

RECITALS

A. WHEREAS, Developer has proposed to develop VTTM 61105, Mission Village, located in the County of Los Angeles, hereinafter referred to as "Proposed Development", which will be constructed on a piece of real property, which is more particularly described in Exhibit "A", attached hereto and incorporated herein by this reference; and

B. WHEREAS, the County of Los Angeles approved the Mission Village Environmental Impact Report for the Proposed Development on , hereinafter referred to as "EIR," which determined that when the Proposed Development traffic is considered as part of the larger volume of traffic that would be generated by the Newhall Ranch Specific Plan and other Westside development, the traffic generated by that larger project, in combination with other cumulative development within the Santa Clarita Valley and the surrounding areas, would result in potential adverse cumulative impacts to Interstate 5 (I-5), hereinafter referred to as "Cumulative Impacts"; and

C. WHEREAS, the "EIR" has mitigation condition MV 4.5-29, that requires Developer to enter into a traffic mitigation agreement with Department to either construct improvements or contribute its fair-share of costs to Department to mitigate the Cumulative Impacts; and

D. WHEREAS, under those circumstances in which Developer will undertake mitigation improvements to Caltrans facilities (i.e., SR-126) relative to development of the Newhall Ranch Specific Plan, Department and Developer will enter into a Highway Improvement Agreement, as applicable; and

E. WHEREAS, Department will construct an improvement project for the I-5 freeway from State Route 14 (SR-14) to Parker Road, which improvements will add capacity to the freeway by adding high occupancy vehicle (HOV) lanes and truck lanes, hereinafter referred to as "Improvements"; and

F. WHEREAS, a Mission Village (Newhall Ranch) I-5 Share Calculations memo was prepared on March 8, 2011 to determine the Proposed Development's share of the unfunded portion of the Improvements ("I-5 Share Calculations"); and

G. WHEREAS, based on that I-5 Share Calculations, the Parties have calculated the Proposed Development's proportionate share of the unfunded portion of the total

anticipated costs of Improvements, which share is estimated to be $460,336, hereinafter referred to as "Funds," as shown on the attached Exhibit "B"; and

H. WHEREAS, Developer desires to mitigate for the Proposed Development's Cumulative Impacts by paying Funds to Department.

NOW THEREFORE, for good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the Parties hereby agree as follows:

1. Developer agrees to pay to the Department, at time of issuance of building permit, the Funds which represent Developer's pro-rata share of the Improvements required to mitigate Cumulative Impacts to I-5 as determined in the I-5 Share Calculations.

2. Department hereby acknowledges that upon payment in full of Funds by Developer at time of issuance of building permit, Developer will have satisfied its mitigation obligation to Department for Proposed Development's Cumulative Impacts.

3. Said Funds shall remain in the State Highway Account assigned to Improvements until such time as the balance of other funds necessary to construct the required Improvements is secured.

4. Department agrees that the Funds paid by Developer pursuant to the terms of this Agreement shall be used for the purposes of constructing the required Improvements to I-5 between SR-14 and Parker Road.

5. All obligations of Department under the terms of this Agreement are subject to the appropriation of resources by the Legislature, State Budget Act authority, and the allocation of resources by the California Transportation Commission.

6. This Agreement may be executed in several counterparts and all counterparts so executed shall constitute one agreement that shall be binding on all of the Parties, notwithstanding that all of the Parties are not signatory to the original or the same counterpart.

7. This Agreement shall expire upon completion of the subject Improvements to I-5.

IN WITNESS WHEREOF, THE Parties hereto have executed this Agreement as set forth below.

CALIFORNIA DEPARTMENT OF TRANSPORTATION

By: _____

Designated District Official

THE NEWHALL LAND AND FARMING COMPANY, (A California Limited Partnership), a California limited partnership

By: NWHL GP LLC, a Delaware limited liability company, its General Partner

By: LandSource Holding Company, LLC, a Delaware limited liability company, its Sole Member

By: Newhall Land Development, LLC, a Delaware limited liability company, its Sole Member

By: Newhall Holding Company, LLC, a Delaware limited liability company, its Manager

By: _____
Name: Steven D. Zimmer
Title: Executive Vice President

Approved as to Form and Procedure

_____
Attorney, State of California
Department of Transportation

EXHIBIT "A"

Mission Village Legal:

Parcel 11, 12, 13, 22 and a portion of Parcel 14 of Parcel Map 24500-01, in the unincorporated territory of the County of Los Angeles, as shown on map filed in Book 293 pages 34 to 67 inclusive, of parcel maps, records of Los Angeles County.

EXHIBIT "A"

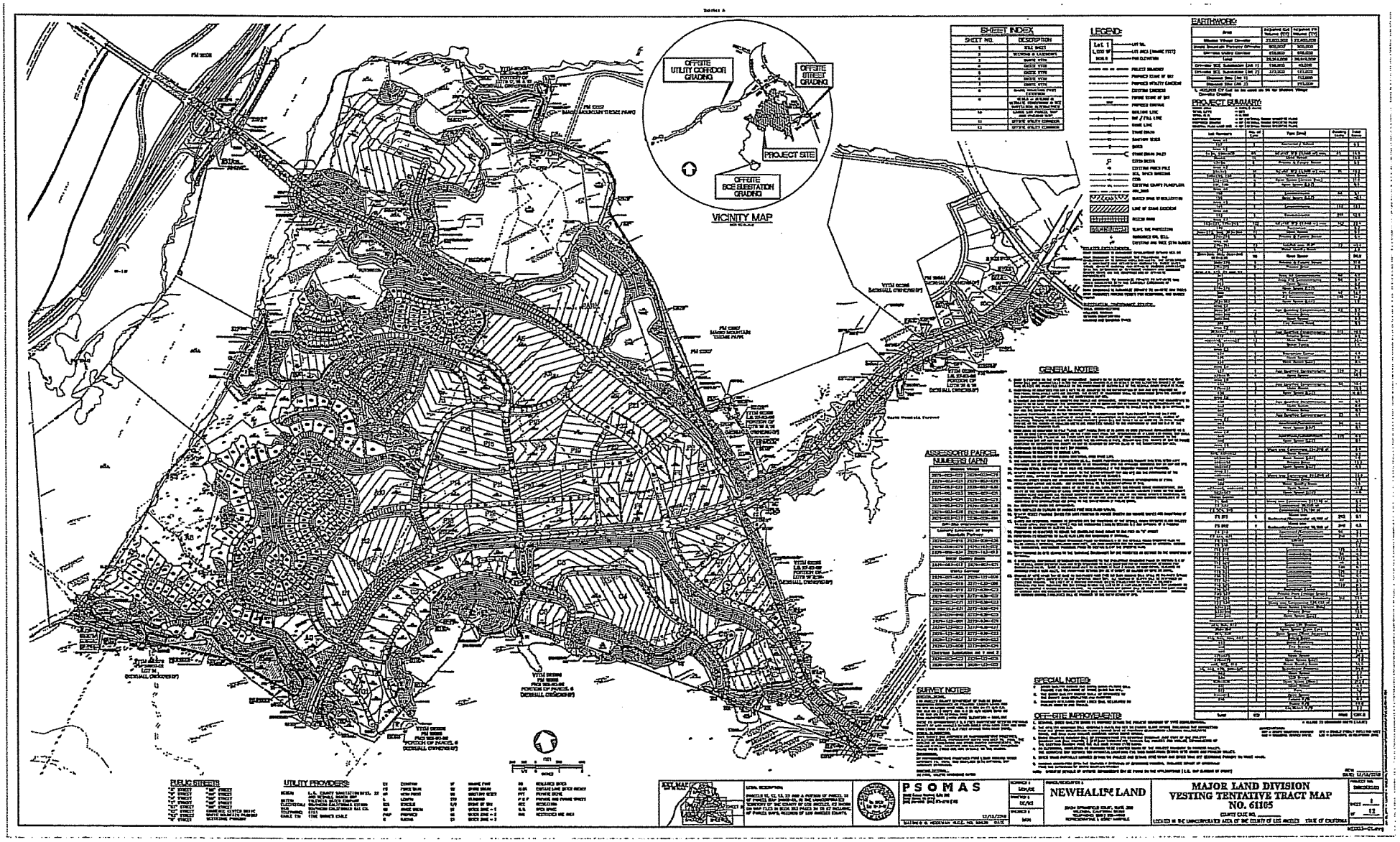

VICINITY MAP
OFFSITE UTILITY CORRIDOR GRADING
OFFSITE STREET GRADING
PROJECT SITE
OFFSITE SCE SUBSTATION GRADING
SHEET INDEX
LEGEND
EARTHWORK
PROJECT SUMMARY
GENERAL NOTES
SPECIAL NOTES
OFF-SITE IMPROVEMENTS
SURVEY NOTES
ASSESSOR'S PARCEL NUMBERS (APN)
PUBLIC STREETS
UTILITY PROVIDERS
PSOMAS
NEWHALL LAND
MAJOR LAND DIVISION
VESTING TENTATIVE TRACT MAP
NO. 61105

EXHIBIT "B"

PM Peak Hour

Location	Total Project Volumes (1)	Net Change due to Project (2)	Project Trips Subject to Mitigation Cost (3)	Existing Volumes (2010)	Total Future Volumes (2035)	Net Increase (Net Future Trips)
1. I-5 btwn Parker & Hasley Cyn	167	49	108	5,500	17,000	11,500
2. I-5 btwn Hasley Cyn & SR-126	158	55	107	7,100	18,600	11,500
3. I-5 btwn SR-126 & Rye Canyon	62	-15	24	8,600	17,200	8,600
4. I-5 btwn Rye Canyon & Magic Mtn	53	1	27	9,800	18,400	8,600
5. I-5 btwn Magic Mtn & Valencia	247	38	143	10,800	18,000	7,200
6. I-5 btwn Valencia & McBean	318	-2	158	12,400	19,300	6,900
7. I-5 btwn McBean & Pico/Lyons	294	31	163	13,000	18,400	5,400
8. I-5 btwn Pico/Lyons & Calgrove	266	60	163	13,300	18,900	5,600
9. I-5 btwn Calgrove & SR-14	257	51	154	13,300	19,200	5,900
Total			***1,047***			***71,200***

Cost of Mitigation Measure (Unfunded Portion):	***$65,400,000.00***
Cost per Future Trip:	***$918.54***
Cost to Mission Village (Gross):	***$961,711.38***
NLF Expenditures for PA/ED and PS&E:	***$4,400,000.00***
Proportion Credited to Mission Village:	***$501,375.25***
Cost to Mission Village (Net):	***$460,336.13***

(1) Total project volumes obtained from a select-zone model run.
(2) Net change due to project obtained by subtracting a "no-project" model run from a "with-project" model run.
(3) Project Trips subject to mitigation cost = "Net Change due to Project" plus 1/2 of the remainder of total project volumes.

2010 Volume Source: Mission Village TIA (October 2010)
2035 Volume Source: Revised Mission Village VTTM Model Run (Feb. 2011)

APPENDIX F4.6

Noise Documentation

Mission Village
Evaluation of Noise Impacts
Hydrohammer

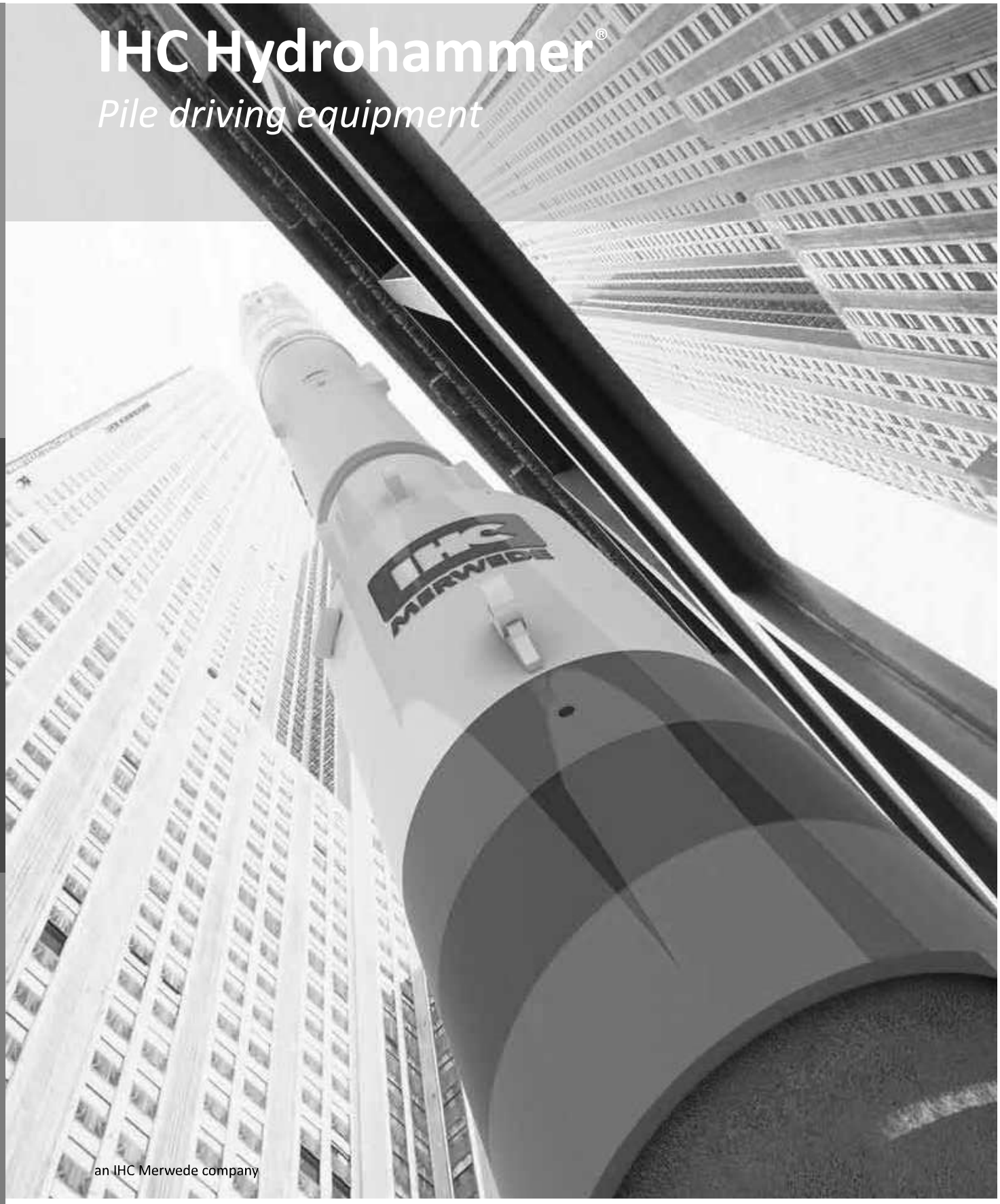
	Attenuation per Doubling of Distance	6	dBA	
	Noise Source	Hydrohammer		
	Number of Units	1		
	Use Factor	1		
(a)	Noise Level at Reference Distance	80	dBA	
(b)	Reference Distance	25	feet	
	Stationary Source Exterior Noise Threshold			
(c)	Single-Family Residential	60	dBA	
(c)	Multi-Family Residential	65	dBA	
(c)	Commercial/Transient	70	dBA	
	Distance to Exterior Noise Threshold			
	Single-Family Residential	250	feet	
	Multi-Family Residential	141	feet	(150 feet rounded)
	Commercial/Transient	79	feet	(80 feet rounded)

Calculation Formula:
Distance to Exterior Noise Threshold = 10^((a - c) / 20) - LOG (c))

IHC MERWEDE

IHC Hydrohammer®

Pile driving equipment

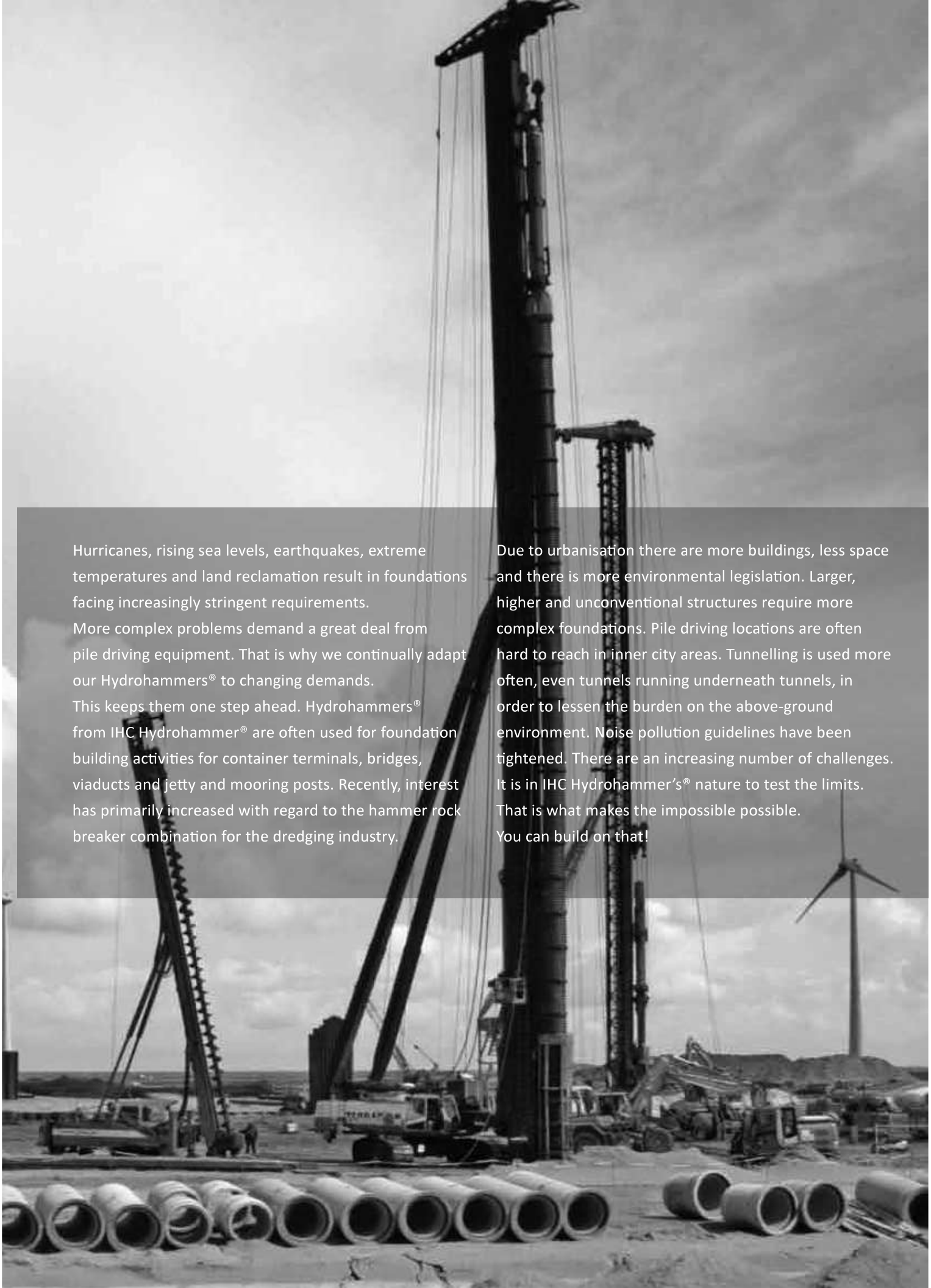


an IHC Merwede company

The technology innovator.

Pile driving equipment

IHC Hydrohammer®
Boundary breaking. Any time. Any how. Anywhere.

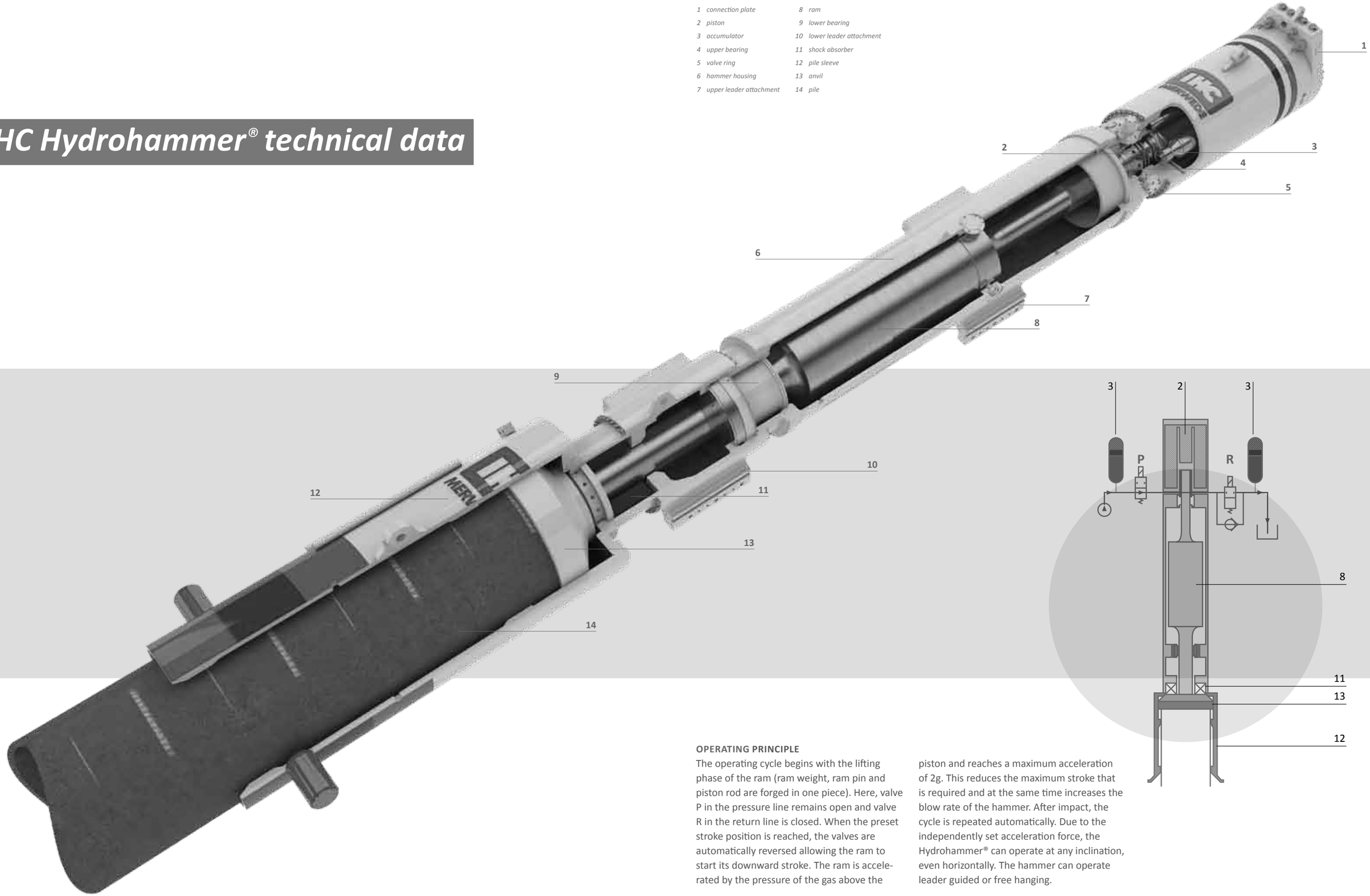


Hurricanes, rising sea levels, earthquakes, extreme temperatures and land reclamation result in foundations facing increasingly stringent requirements.
More complex problems demand a great deal from pile driving equipment. That is why we continually adapt our Hydrohammers® to changing demands.
This keeps them one step ahead. Hydrohammers® from IHC Hydrohammer® are often used for foundation building activities for container terminals, bridges, viaducts and jetty and mooring posts. Recently, interest has primarily increased with regard to the hammer rock breaker combination for the dredging industry.

Due to urbanisation there are more buildings, less space and there is more environmental legislation. Larger, higher and unconventional structures require more complex foundations. Pile driving locations are often hard to reach in inner city areas. Tunnelling is used more often, even tunnels running underneath tunnels, in order to lessen the burden on the above-ground environment. Noise pollution guidelines have been tightened. There are an increasing number of challenges. It is in IHC Hydrohammer's® nature to test the limits. That is what makes the impossible possible.
You can build on that!

IHC Hydrohammer® technical data

1 connection plate
2 piston
3 accumulator
4 upper bearing
5 valve ring
6 hammer housing
7 upper leader attachment
8 ram
9 lower bearing
10 lower leader attachment
11 shock absorber
12 pile sleeve
13 anvil
14 pile



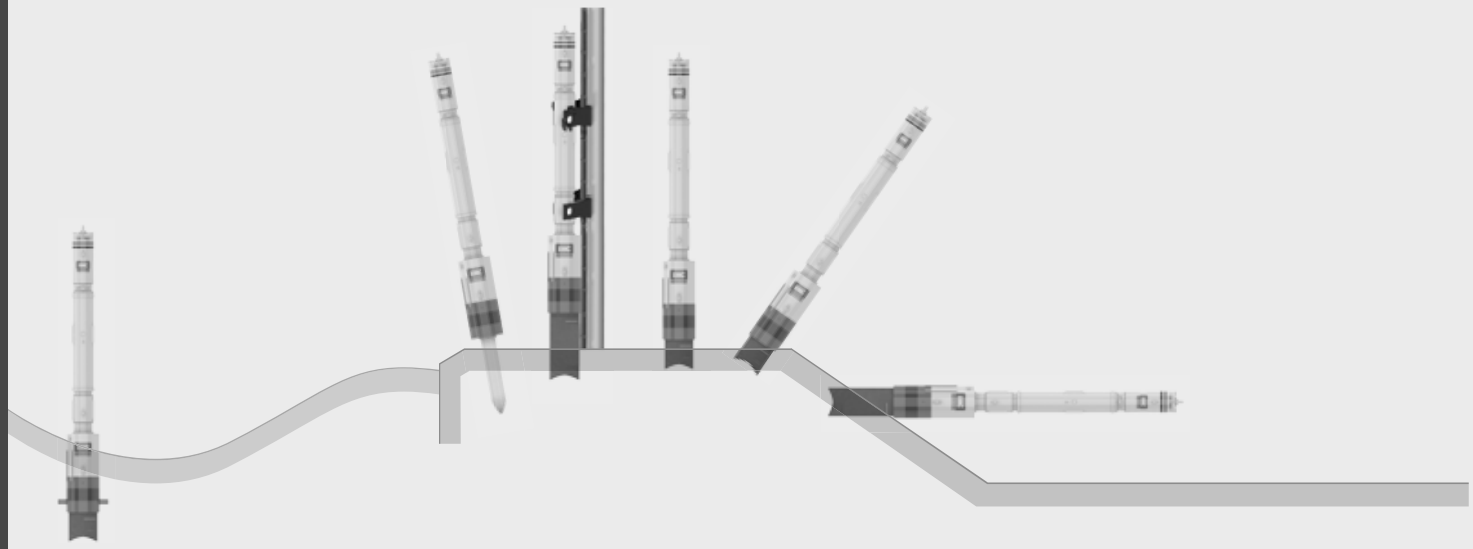
OPERATING PRINCIPLE

The operating cycle begins with the lifting phase of the ram (ram weight, ram pin and piston rod are forged in one piece). Here, valve P in the pressure line remains open and valve R in the return line is closed. When the preset stroke position is reached, the valves are automatically reversed allowing the ram to start its downward stroke. The ram is accelerated by the pressure of the gas above the piston and reaches a maximum acceleration of 2g. This reduces the maximum stroke that is required and at the same time increases the blow rate of the hammer. After impact, the cycle is repeated automatically. Due to the independently set acceleration force, the Hydrohammer® can operate at any inclination, even horizontally. The hammer can operate leader guided or free hanging.

Thinking possibilities

IHC Hydrohammer® is the global standard in the field of pile driving hammers. Why? Because we think in solutions. After all, in practice, every problem on the market demands its own, innovative solution. It is in our nature to think in opportunities. Our years of experience, our empirical approach and - in particular - our intensive cooperation with many onshore and offshore clients means we always see room for improvement.

For example, in recent decades we have broadened our horizons. On the one hand, by not compromising and only being satisfied with the best. On the other, by entering into joint ventures and partnerships with users. Elevating each other, creating opportunities and subsequently capitalising on them. Success starts with the right attitude. It makes you think in solutions.



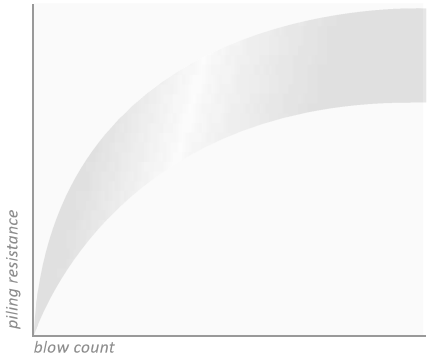
TWO SERIES OF HAMMERS: S AND SC

The Hydrohammers® are available in two series; the S- and SC-series. The ram weight of the S-series is relatively light and the hammer gets a greater part of its energy from acceleration due to the gas pressure on top of the piston. This makes the hammer ideal for driving steel piles, such as casings, H-beams and offshore piles.

The SC-series have a heavier ram weight and lower acceleration because of the lower cap pressure. With the same stroke as the S-series, the SC-series have a lower impact velocity, making these hammers the better choice for driving concrete piles, or when a universal hammer for various types of piles is required.

DRIVEABILITY

A proper choice for a hammer can only be made after careful interpretation and assessment of the properties of the soil. To support its users IHC Hydrohammer® has a staff of experienced civil engineers to assist them with pre- and post-pile driving analyses. These driveability studies are carried out using the most sophisticated computer programs (IHCWAVE and TNOWAVE). These programs are also used to enable IHC Hydrohammer® design engineers to optimize hammer components.



HAMMER CONTROL & MONITORING

All hydraulic functions of the hammers are electronically controlled and monitored. This ensures optimum control of the energy, blow rate and an optimum transfer of the energy into the pile head. Safety features are built into the controls. They include protection against too high or too low a ram stroke, too high level and incorrect hammer/pile positioning. The electronic signals from the hammer sensors and from the power pack controls are fed into a single control box. In the event of a malfunction the control box software assists in solving the problem. The piling data can be printed on site or stored in a data logger. The data logger option facilitates information transfer to a PC, allowing engineers to conduct detailed analysis of the driving operation.

C34 Control Box

P-31 Printer / P-32 Data Logger

Vertical pile driving

IHC Hydrohammer's® unique design makes it suitable for all types of piling and foundation works, both leader guided or freehanging. With regards to this, all kinds of profiles can be driven like sheetpiles, H-beams, MV-piles, tubulair piles and so called combi piles whereby different steel profiles are connected by slots.

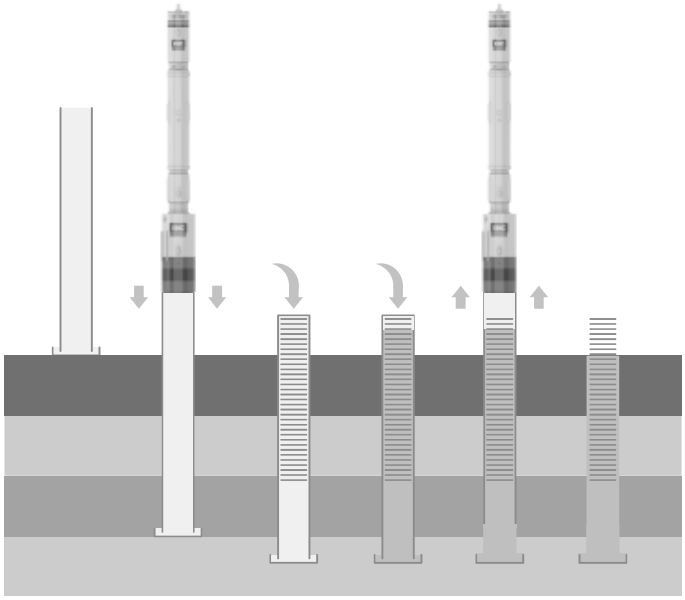
Suitable for all types of piling and foundation works

Cast-In-Situ technique

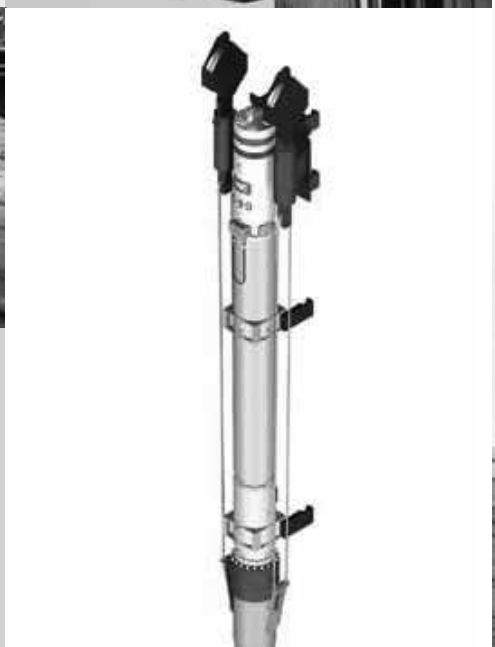
One of the unique features of the Hydrohammer® design, besides its sturdiness and high level of controllability, is its ability to facilitate extraction of earlier driven casings.

Cast-In-Situ process steps
A steel tube with a steel cover plate (on the bottom) will be driven by a Hydrohammer® with extraction cap into the ground until the required penetration depth is reached, or until sufficient resistance to penetration is encountered. Inside the empty tube a reinforcement cage will be placed and concrete will be poured. The Hydrohammer® with extraction cap will be connected to the tube by link plates, controlled by the pile driver assistant. Hydrohammer® and tube will be extracted by line pull of the rig in combination with small blows downwards or upwards of the Hydrohammer® to reduce the soil frictional resistance. The concrete will flow into the soil cavity.
The required amount of concrete is estimated beforehand. In case of extra consumption, which can happen in very loose soils, the tube will be refilled with concrete before being completely extracted to compensate the extra flow out. A concrete pile of high quality is the result.

Cast-In-Situ advantages:
Fast installation method. High frequency operation of the hammer with extremely low energy per blow reduces soil frictional resistance, enabling pile extraction at crane loads significantly lower than used for conventional static pulling. Under extremely difficult circumstances it is even possible to generate an additional upward force by impacting the hammer housing in an upward direction. This can set a jammed pile into motion.
This combination of features means that only one hammer is needed for both driving and extracting, making them ideal for handling cast-in-situ (vibro) piles. Economical, since reinforcement is installed after tube installation, compared to precast piles, where reinforcement must be designed with respect to transport and handling. Concrete can be delivered within a few hours at request by a concrete mixer truck, which prevents storage of precast piles and makes it easier to reach the jobsite. Reinforcement of pile shaft can be increased at top of pile. Due to an increased end bearing and optimal friction along the shaft, a high bearing capacity is usually achieved. Allowable pile loads can be very high. Another advantage is that the adjustable pile length can be determined at the job site.



Driving Cast-In-Situ piles



Raked piles

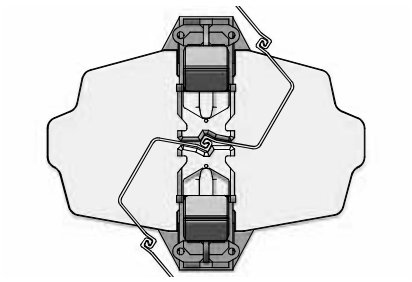
By adjusting the gas pressure above the ram's piston head, the ratio between the energy delivered by gravity and by gas can be adjusted. When driving raked piles the gas pressure is increased to compensate for the loss of gravity energy. Battered piles up to a rake of 1:1 (45 degrees) can be driven at full energy. It is even possible to drive horizontally. In this case it is only the gas pressure which accelerates the ram to full energy.

Battered piles up to a rake of 1:1 (45 degrees) can be driven at full energy. It is even possible to drive horizontally

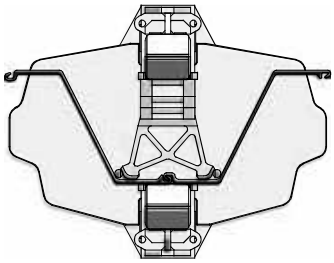
Sheet piles

For driving sheet piles both the S-series and SC-series can be equipped with *sheetlegs*. These legs give the hammer the required stability when driving sheet piles in a free riding mode. This eliminates the necessity of a leader and driving can be done with the aid of a regular crane.

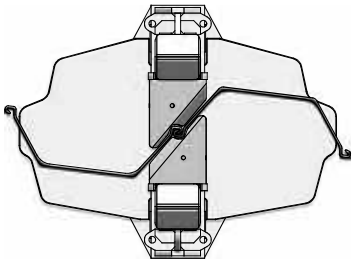
Many types of profiles can be driven, single sheetpiles, double sheetpiles, single H-beams, double H-beams, combi walls, etc. Our new and smallest S-30 Hydrohammer® is specially designed for driving sheetpiles. The small diameter of Ø460 mm gives the possibility to drive single sheetpiles and the weight of the hammer in combination with the sheetlegs is beneath the 7 tons. Another new development is the polygonal anvil. The special shape gives the possibility to drive a wide range of sheetpiles with maximum coverage. This range goes from the small profiles, width 500 (for example: Hoesch L25) to the big profiles, width 700 (for example: Arcelor AZ40-700) or width 750 (for example: Arcelor AU26). Our newest development is the new type of sheet-legs for our S-30 and S-40 Hydrohammer®. The futuristic shape of the upper part has a high stiffness. These sheetlegs can be used with the polygonal anvil for double sheetpiles and with an anvil for single sheetpiles.



Coverage with the polygonal anvil
*at the profile **L25***



Coverage with the polygonal anvil
*at the profile **AZ 40-700***



Coverage with the polygonal anvil
*at the profile **AU 26***

Noise insulation enclosures

A new feature of the Hydrohammer® is the possibility to equip the hammer with a noise reduction package. This consists of an enclosure at the point of impact and bellow sections around the pile. The design was developed in collaboration with the Dutch Research Institute TNO/TPD. Noise levels can be reduced to less than 80 dB(A) at 7 meters, which is a great improvement in noise emission levels for today's building sites.

Noise levels can be reduced to less than 80 dB(A) at 7 meters, which is a great improvement in noise emission levels for today's building sites.

Horizontal driving

When large diameter piles, tubes or tunnel sections have to be installed horizontally over an appreciable distance, powerful tools are required to deliver the amount of driving energy or of a sufficient cutting capacity. IHC Hydrohammer® is specialized in piling jobs where large diameter piles (up to 4.3 m, 15 ft diameter) have to be driven. Due to two unique features in the design of the hydraulic driven, double acting Hydrohammer®, it is possible to operate the hammers under every inclination, even horizontally.

1 The first feature is the double acting principle of the hammer, whereby part of the kinetic energy of the ram is obtained by a pressurized gasbuffer above the main piston. When operating under a batter, increasing the pressure of the gasbuffer can compensate the loss of energy delivered by gravity.

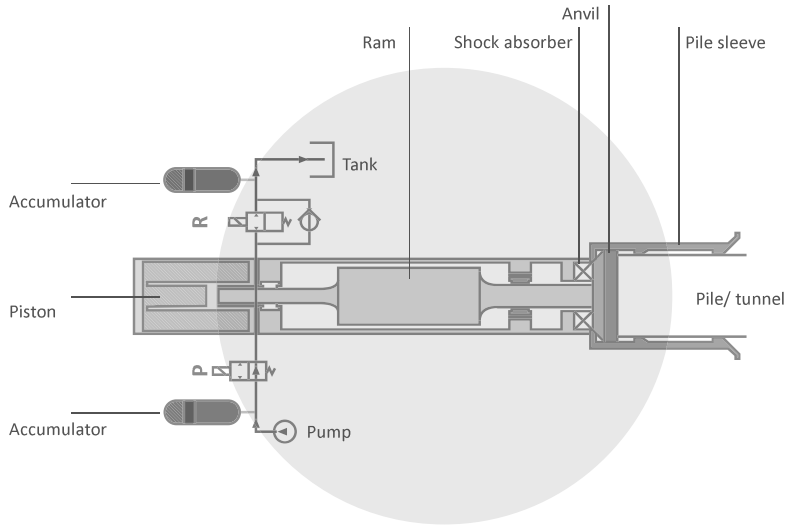
2 The ram of the Hydrohammer® is guided by two oil-lubricated bearings. There is no contact between ram and guide columns or ram and housing. This prevents excessive wear and tear.

HAMMERTYPE		S-70	S-90	S-120	S-150	S-200	S-280
OPERATIONAL DATA							
Max. net energy	kJ	70	90	120	150	200	280
	ft.kips	51	66	88	110	147	206
Blow rate at max. blow energy (1)	bl/min	50	46	48	44	45	45
Min. required line pull	kN	120	140	180	200	280	350
	short tons	13	15	20	22	31	38
WEIGHTS							
Ram	kg	3500	4500	6200	7500	10000	13600
	lbs	7716	9921	13228	16535	22046	29762
Total weight (hammer only)	kg	8300	9700	14300	16200	25800	30500
	lbs	18298	21385	31526	35715	56879	67241
DIMENSIONS							
Length hammer (2)	mm	7400	8055	8166	8900	9095	10390
	ft. in	23’5”	25’10”	26’2”	28’7”	29’3”	35’10”
Outer diameter	mm	610	610	712	712	915	915
	ft	24	24	28	28	36	36
POWER PACK TYPE							
Recommended		P-250	P-250	P-460	P-460	P-800	P-800

All data approximately only and depending on final design and lay-out

PRINCIPLE OF HORIZONTAL DRIVING OPERATION

The figure on the right shows the hammer set-up when driving horizontally. To counteract against the increased pressure in the gasbuffer, a constant tension (pull down force) is required to keep the hammer housing firmly on the pile. A spring arrangement is located between the tension-wires and the hammer to prevent too high shock loads in these wires.



ADVANTAGES OF HORIZONTAL DRIVING SYSTEMS

There are a number of distinct advantages in using IHC Hydrohammer® and the Hydrohammers®, when (large diameter) piles have to be installed horizontally:

1 Easy to change configuration for different pile diameters (only sleeve and anvil have to be replaced underneath the hammer)
2 Faster tube installation progress
3 Standard Hydrohammers® can be used, no modifications required
4 Extensive experience in driving large diameter piles
5 Large rental fleet available
6 Cleaner operation
7 Safer operation: working tool is outside, not inside the tube

NOTES

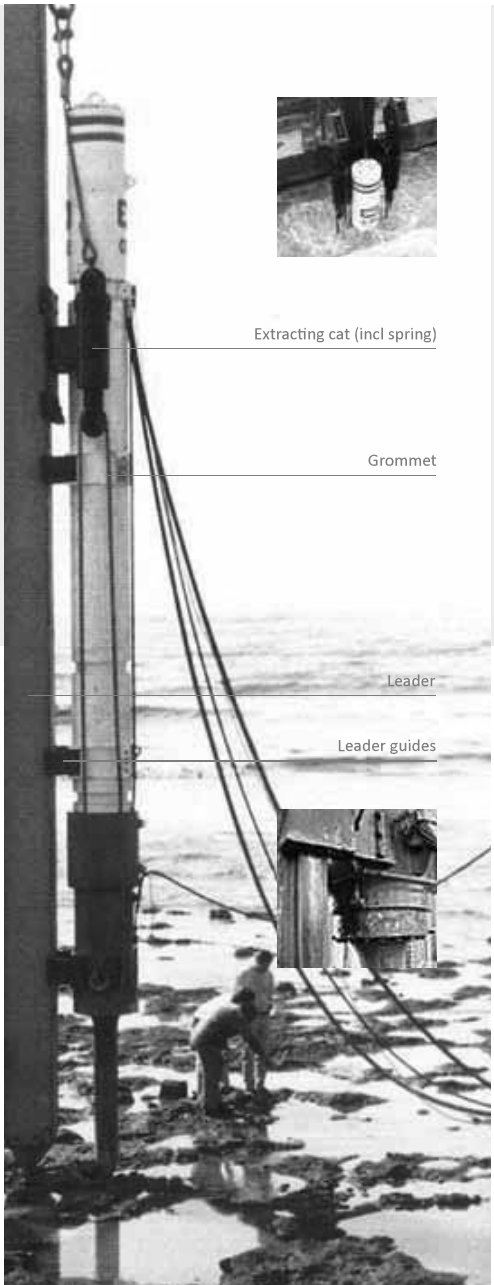
1 When using recommended powerpack
2 Transport length

Rockbreaking

Equipped with a chisel set, the Hydrohammer® becomes a highly effective and powerful rock breaker. As the S-series has the highest impact velocity, this type is the most suitable for producing the high impact force necessary for breaking rock, cemented layers, concrete floors, and slabs. If cutter dredging is no longer possible because the rock is too hard (average compressive strength greater than 40 MPa), or dredging is not justified economically in the case of relatively small volumes, a rock breaker can be an excellent solution. Where removal of hard rock by means of explosives is not permitted for safety or ecological reasons, the use of an IHC Hydrohammer® rock breaker may be the ONLY solution.

CHISEL WITH HOUSING

The Hydrohammer® can be used as a rock breaker both on land and underwater. For that purpose, the standard S-30, S-40, S-70, S-90 or the more powerful S-200 and S-280 Hydrohammers® are equipped with a special sleeve with an internal anvil (seated on spring cushioning) and a chisel that slides in the special sleeve. After being driven into the rock, the hammer and chisel are lifted and moved to the next spot. This way, holes can be punched in a certain pattern, leaving the fractured rock to be removed by other equipment such as an excavator or clamshell. An important advantage of the Hydrohammer® is the ability to deliver up-wards blows. Doing so while lifting the hammer at the same time strongly facilitates the retraction of jammed chisels.



THE SYSTEM

In order to withstand the heavy resistance forces to which the hammer and chisel (rock breaker) are exposed, the Hydrohammer® needs to be properly guided in a leader guide profile. This operating criterion secures the central alignment of the chisel and hammer for optimum energy transfer between ram/anvil and chisel. The position of this leader profile should be fixed during breaking (making one hole) and extracting.

Operating Methods

Different types of handling equipment can be used to lift and position the rock breaker and leader profile such as: piling rig, excavator or backhoe or a cutter dredger. The choice depends on water depth and (mostly) on the equipment available for/on the project. Naturally, the handling equipment needs sufficient lifting capacity to position the hammer and chisel and sufficient traction power to retract a jammed chisel. Extraction takes place with use of an extracting cat (spring buffer) placed on the leader profile in between the pulling line. This will create a continuous pulling force on the rock breaker and prevent damage during extraction.

PILING RIG

One of the most proven methods of breaking rock under water is the use of a piling rig whereby the leader can be lowered down in the water. This way the leader is part of the rig. With a standard IHC FUNDEX Equipment F12SE piling rig the leader can be lowered down about 15 m under water. With a special long leader and some other modifications a water depth of about 45 m can be reached.

CUTTER DREDGER

If cutter dredging is no longer possible because the rock is too hard (average compressive strength greater than 40 MPa), or dredging is not justified economically in the case of relatively small volumes, a rock breaker can be an excellent solution. It is possible to mount a custom build short leader to the cutter ladder of an IHC Merwede cutter dredger to handle the rock breaker.

EXCAVATOR OR BACKHOE

The combination with an excavator provides the most versatile operation: breaking is possible at any angle and the hammer with chisel can be moved rapidly and independently from the pontoon. The only limitation is the water depth. The operation of the rock breaker with an excavator has been successfully carried out on several projects. In these cases a custom build short leader of about 10 m length is fitted on the stick of the excavator. The water depth reached depends on the excavator and varies between 8 and 13 m. Extraction of the chisel is done by two hydraulic cylinders mounted on the leader. The Hydrohammer® can be used for precise breaking operations, such as those close to works of art and ancient foundations, both on land and under water. The Hydrohammer® also offers a good solution for large dredging operations where relatively small amounts of hard rock need to be removed.

Rock Breakability

Which rocks can be broken or fractured with the Hydrohammer® depends on a number of factors:

- Rock hardness
- Rock stratification and homogeneity
- Thickness and surface profile
- Method used, which in itself depends on the water depth and available equipment

ROCK HARDNESS
So far, rocks with a hardness up to 80 MPa (a very high compressive strength) have been successfully broken using an S-70 Hydrohammer® to punch vertical holes in a relatively level surface. If the fractured rock can disperse from the breaking zone, it will undoubtedly be possible to break even harder rocks.
The average compressive strength that a normal cutter dredger can handle is 40 MPa. Bigger hammers such as the S-200 or S-500 are able to break harder rocks.

STRATIFICATION AND HOMOGENEITY
If the rock has horizontal layers, good results can be obtained by positioning the rock breaker at an angle and/or adapt the breaking pattern to achieve penetration in harder spots in the rock.

THICKNESS AND SURFACE PROFILE
A relatively thin layer will be easy to crack. If layers are thicker than e.g. 1 m, it may be necessary to break layer by layer. Needless to say, irregular surfaces are easier to break as the broken material normally crumbles away.

Technical specifications

WEIGHTS AND DIMENSIONS	UNIT***	S-30	S-40	S-70	S-90*	S-200	S-280
WEIGHT							
Rock breaker	ton	4	4	5,2	5,2	18	18
Hoisting equipment & leader quides	ton	3	3	3	3	16	16
Hammer	ton	3,9	4,7	8,3	9,7	25,8	30,5
Leader	ton	2,4	2,4	2,4	2,4	**	**
Total weight(T)	*ton*	*13,3*	*14,1*	*18,9*	*20,3*	**	**
LENGTH							
Rock breaker	mm	3750	3750	3850	3850	5620	5620
Hammer	mm	6100	6850	7400	8055	9095	10390
Total length(T)	*mm*	*9850*	*10600*	*11250*	*11905*	*14715*	*16010*

All data approximately only and depending on final design and lay-out

** when an S-90 hammer is used in combination with a rock breaker set, the setting of the energy level is never allowed to exceed 70 KJ*

*** upon request*

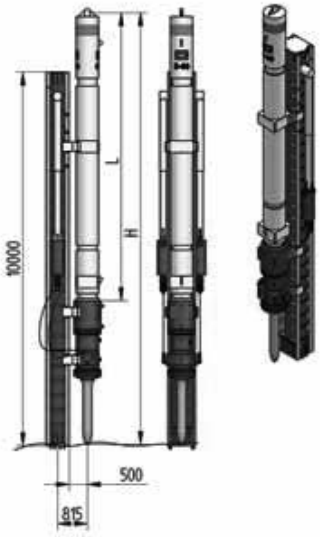
**** incl. rock breaker, Hydrohammer® and leader*

REFUSAL

For efficient operation and to prevent damage to the hammer, it is essential that the chisel penetrates the rock. The refusal per stitch is met when the total cumulative energy, delivered to the chisel, reaches a value of 20.000 kJ (For an S-70 this means 285 blows at full energy). If more strokes are required to break the rock, a more powerful hammer can be selected. There is a wide variety of Hydro-hammers® to choose from. So far, the S-35, S-70, S-90, S-280 and S-500 have been used during rock breaking operations.

STANDARD S-70 ROCK BREAKER CONFIGURATION

Leader	2,4 ton
Hammer S-70	8,3 ton
Rock breaker	5,2 ton
Leader guides	0,5 ton
Hoisting equipment	2,5 ton
Total weight	**18,8 ton**

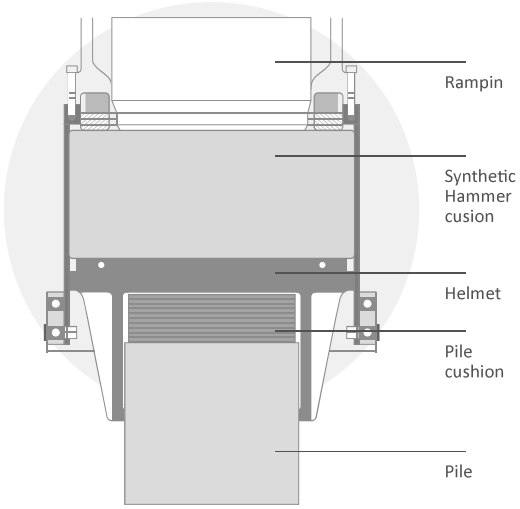


Prefab concrete piles

Prefab concrete piles can be driven with Hydrohammer® SC-series. The following Hydrohammer® SC-types are available for rent and for sale: SC-75, SC-110, SC-150 and SC-200. This type of Hydrohammer® is specially designed to drive concrete piles but is besides that also suitable to drive steel piles at maximum energy. The standard concrete cap configuration to drive concrete piles is shown in the illustration on the right. The Rampoint of the ram weight hits on a Synthetic Hammer Cushion. The Synthetic Hammer Cushion transfers the energy into the Helmet and through the wooden Pile Cushion into the Pile without damaging the concrete.

The SC-type Hydrohammers® can be supplied with an energy rating up to 200 kJ. Similar as the S-type Hydrohammer®, which is designed for steel piles, the SC-type is capable to drive piles below the waterline. When driving piles below the waterline an air hose is connected to the sleeve through which compressed air is supplied into the hammer to keep water from flowing into the Hydrohammer®.

The Prefab concrete piles can be driven with a Hydrohammer® in two ways, free riding and leader guided. When driving piles free riding a longer sleeve is required than while leader guided. The reason for the extended sleeve is the fact that the total weight and moment induced by the hammer needs to be transferred through the sleeve into the pile.


Rampin
Synthetic
Hammer
cusion
Helmet
Pile
cushion
Pile

Less is more...

UNIVERSAL AND UNIQUE

There are no compromises in the design of the hydraulic Hydrohammer® where reliability, efficiency, possibilities and safety are the focus. A design forged from billions of hammer strikes, both onshore and offshore.

The Hydrohammer® combines a solid one-piece ram with a fully enclosed hammer housing. The result is an elegant yet robust and reliable hammer. IHC Hydrohammer®'s unique design makes it suitable for all types of piling and foundation work, ranging from piling impact sensitive concrete piles, to piling large and long offshore caisson piles. The hammer can even be used to break rock (also under water).

MORE RELIABILITY

Solid piece Ram. The ram weight, ram pin and piston rod are forged in one piece, which means there is no risk of the parts separating.
Materials. The forged alloy steel guarantee durability. This also allows unlimited piling on steel using full power.
Shock absorber. The robust and tested construction and the materials used sustainably resist the reaction forces from the pile.
Bearings. The ram is guided above and below by lubricated bearings. This reduces ram wear to a minimum.
Limited parts. The use of a limited number of parts leads to lower risk of failures and fewer spare parts.

MORE POSSIBILITIES

Enclosed hammer housing. The energy supplied by the Hydrohammer® is the same both above and below water.
Tools. The hammers can be equipped with rock chisels, noise bellows and sheet piling and pile guides in all sizes.
Sleeve design. Due to the flat anvil, the sleeves can be adjusted to suit any pile diameter.
Free hanging. The Hydrohammer® can operate leader guided and free hanging (fitted with a pile sleeve).
Clamp system. A special clamp system rigidly connects the pile head and the hammer housing. As a result, only one Hydrohammer® is needed to drive and to extract piles. This makes the Hydrohammer® ideal for the installation of cast-in-situ (vibro) piles.
Acceleration energy. In addition to piling vertically, the Hydrohammer® can also operate at full power horizontally and at any other inclination. Thanks to the acceleration energy, it has a relatively low weight and a high peak force to overcome soil resistance.
Forged pieces. Due to the high-quality forged and alloyed parts, the Hydrohammer® is suitable for driving steel on steel.

MORE EFFICIENCY

Hammer control. All hydraulic functions of the Hydrohammer® are electronically controlled and monitored. This contributes to allowing the optimal blow energy to be set.
Modular structure. All parts that could possibly need attention between major services are easily accessible from the outside.
Oil flow. Due to the accelerated ram weight, it is possible to realise a high blow count at a relatively low oil flow.
Real time monitoring. The piling data are directly printed on site or stored in a data logger. This allows a detailed analysis of the driving operation to be conducted.

INCREASED SAFETY

Safety provisions. Signals from the hammer sensors are centrally processed in the control box. If the length of the ram stroke is too long or too short, the hammer is stopped. If the hammer/pile positioning is incorrect, the hammer cannot be started.
Environmentally friendly. The Hydrohammer® can use biodegradable oil. Noise reduction is optimised by fitting the Hydrohammer® with the available noise reduction packages.

HAMMER S SERIES

		S-30	S-40	S-70	S-90	S-120	S-150	S-200	S-280	S-500	S-600	S-800	S-900	S-1200	S-1400	S-1800	S-2000	S-2300
OPERATIONAL DATA																		
Max. blow energy on the pile	kNm	30	40	70	90	120	150	200	280	500	600	800	900	1200	1400	1800	2000	2300
Min. blow energy on the pile	kNm	3	4	7	9	12	15	20	28	50	60	80	90	120	140	180	200	230
Blowrate at max. blow energy (1)	bl/min	65	65	50	46	48	44	45	45	45	42	38	38	38	40	35	35	30
WEIGHTS																		
Ram	ton	1.6	2.2	3.5	4.5	6.2	7.5	10	13.6	25	30	40	43	60	69	90	100	115
Hammer with ram in air (2,3)	ton	3.9	4.7	8.3	9.7	14.3	16.2	25.8	30.5	57.5	64	83	120	140	148	210	225	242
DIMENSIONS																		
Length hammer (4)	mm	6100	6850	7400	8055	8166	8900	9095	10390	11943	12715	14610	12795	14297	16090	16510	17335	18290
HYDRAULIC DATA																		
Oil flow	l/min	175	175	250	250	460	460	800	800	1600	1800	1800	2400	2400	3600	4400	4400	4800
POWER PACK TYPE																		
Recommended		P-175	P-175	P-250	P-250	P-460	P-460	P-800	P-800	on request								

HAMMER SC SERIES

		SC-75	SC-110	SC-150	SC-200
OPERATIONAL DATA					
Max. blow energy on the pile	kNm	75	110	150	200
Min. blow energy on the pile	kNm	8	11	15	20
Blow rate at max. blow energy (1)	bl/min	50	45	45	45
WEIGHTS					
Ram	ton	5.7	7.9	11	13.6
Hammer with ram in air (2,3)	ton	9.8	14.1	18.7	26.5
DIMENSIONS					
Length hammer (4)	mm	6245	5755	6630	5730
HYDRAULIC DATA					
Oil flow	l/min	250	460	460	800
POWER PACK TYPE					
Recommended		P-250	P-460	P-460	P-800

ACCESSORIES

Pile sleeves
Sleeve inserts
Anvils
Pile cap
Winches
Printers
Monitoring equipment
Noise reduction packages
Control cabins

NOTES

1 When using recommended power pack.
2 Hammer weight without anvil/pile cap and pile sleeve.
3 Sleeve and anvil dimensions and weight depend on application. Information on request.
4 Transport length.
5 All hamers and power packs can be operated using bio-degradable oil.

POWER PACK TYPE

		P-175	P-250	P-460	P-800
OPERATIONAL DATA					
Max. pressure	bar	350	350	350	350
Max. oil flow (5)	l/min	175	250	460	800
Power	kW	110	168	387	565
DIMENSIONS					
Length	mm	2613	3500	4030	4500
Width	mm	1200	1540	1545	1800
Height	mm	1775	2044	2225	2520
WEIGHTS					
Net. weight	ton	2.4	3.5	5.4	7.8
Weight incl. fuel and oil	ton	3.8	4.5	7.4	9.7

All data approximate and depend on final design and layout

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Heusden
Kinderdijk
Krimpen aan den IJssel
Sliedrecht

Shipyard - P.R. of China
Dalian

Shipyard - Serbia
Belgrade

Sites - The Netherlands
Alblasserdam
Apeldoorn
Delfgauw
Dordrecht
Emmeloord
Goes
Hardinxveld-Giessendam
Kinderdijk
Sliedrecht

Sites – P.R. of China
Shanghai

Sites - Europe
Aberdeen - United Kingdom
Blandford Forum - United Kingdom
Komarno - Slovakia
Riding Mill - United Kingdom
Rijeka - Croatia
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Sites - USA
Houston, TX
Wayne, NJ

Sites - South Africa
Cape Town

Representative offices
Beijing - P.R. of China
New Delhi - India
St. Petersburg - Russia

Regional IHC organisations worldwide
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The technology innovator.

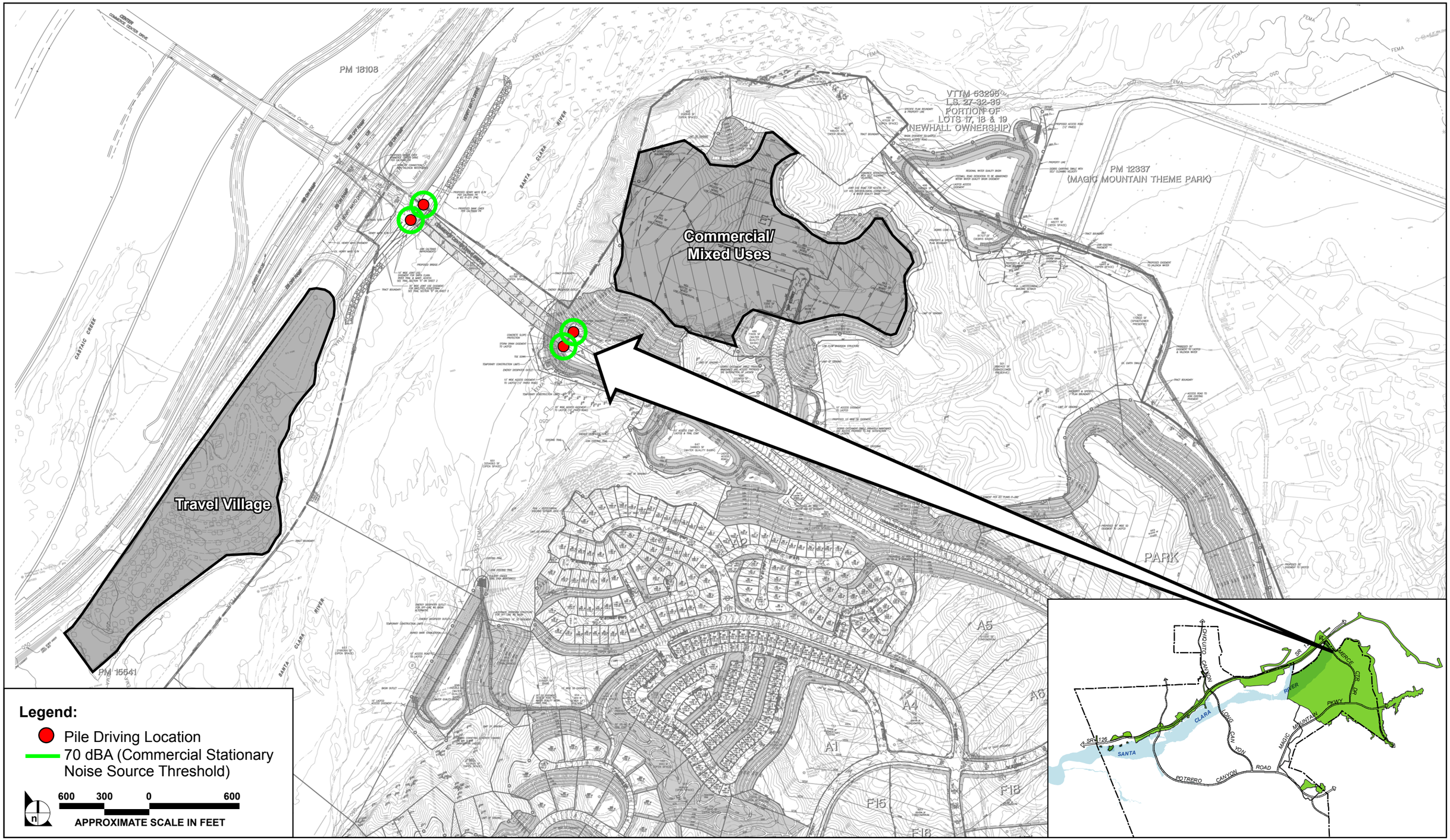
IHC02.01.11.10

SOURCE: Impact Sciences, Inc. – May 2011

FIGURE **1**

Mission Village Commerce Center Drive Mitigated Pile Driving Noise Radius of Impact (Hydrohammers) – Residential

32-92•05/11



SOURCE: Impact Sciences, Inc. – May 2011

FIGURE **2**

Mission Village Commerce Center Drive Mitigated Pile Driving Noise Radius of Impact (Hydrohammers) – Commercial

32-92•05/11