

12760 High Bluff Drive, Suite 300, San Diego, CA 92130  
 Phone 619-890-1253, Fax 619-374-7247, e-mail: Justin@LOSengineering.com

January 20, 2011

To: Mr. Jimmy Ayala  
 Pardee Homes  
 6025 Edgewood Bend Court  
 San Diego, California 92130

From: Justin Rasas, P.E.

RE: Meadowood I-15 Revised Cumulative Analysis

After the circulation of the Meadowood EIR, the density of three land uses changed. The proposed project for Campus Park was reduced by 325 dwelling units. Accretive submitted a Major Pre Application for a proposed mixed-use project to be located in the western area of Valley Center. And, Merriam Mountains was denied by the County Board of Supervisors. The purpose of this memo is to determine if there was a change to the Meadowood EIR cumulative findings along the study sections of Interstate 15.

The Campus Park removal of 325 dwelling units resulted in reduced volumes along I-15 as shown in **Table 1** (project assignment calculations included in **Attachment A**).

**Table 1: Campus Park I-15 Peak Hour Volumes per EIR and Reduced Project**

Freeway Segment =>	I-15				I-15				I-15			
	Rainbow Valley Blvd to Mission Rd				Mission Rd to SR-76 (Pala Rd)				SR-76 to Escondido Hwy (Old 395)			
	A M		P M		A M		P M		A M		P M	
Volume Source Noted Below	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
Campus Park (EIR)	99	68	97	136	14	9	13	19	73	86	128	102
Campus Park (Reduced Project)	74	62	85	110	10	8	11	15	67	65	105	92
Reduced Campus Park (Removed Vol)	-25	-6	-12	-26	-4	-1	-2	-4	-6	-21	-23	-10

The Accretive project is calculated to add traffic to I-15 based on a SANDAG select zone assignment as shown in **Attachment B**. The amount of traffic added to I-15 is shown in **Table 2**.

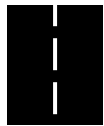
**Table 2: Accretive I-15 Peak Hour Volume Addition**

Freeway Segment =>	I-15				I-15				I-15			
	Rainbow Valley Blvd to Mission Rd				Mission Rd to SR-76 (Pala Rd)				SR-76 to Escondido Hwy (Old 395)			
	A M		P M		A M		P M		A M		P M	
Volume Source Noted Below	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
Accretive Major Pre Application Project	51	23	38	69	51	23	38	69	51	23	38	69

The County Board of Supervisors denial of Merriam Mountains resulted in a reduction of I-15 volumes as shown in **Table 3**. The source of reduction is from the Merriam Mountains EIR traffic study with an excerpt included in **Attachment C**.

**Table 3: Merriam Mountains I-15 Peak Hour Volume Reduction**

Freeway Segment =>	I-15				I-15				I-15			
	Rainbow Valley Blvd to Mission Rd				Mission Rd to SR-76 (Pala Rd)				SR-76 to Escondido Hwy (Old 395)			
	A M		P M		A M		P M		A M		P M	
Volume Source Noted Below	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
Merriam Mountains EIR	-23	-72	-58	-28	-23	-72	-58	-28	-23	-72	-58	-28



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The change in I-15 cumulative peak hour volumes due to adding the Accretive Major Pre Application, removing Merriam Mountains, and reducing Campus Park is shown in **Table 4**.

**Table 4: Meadowood Revised I-15 Cumulative Volumes**

Freeway Segment =>	I-15				I-15				I-15			
	Rainbow Valley Blvd to Mission Rd				Mission Rd to SR-76 (Pala Rd)				SR-76 to Escondido Hwy (Old 395)			
	A M		P M		A M		P M		A M		P M	
Volume Source Noted Below	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
Meadowood Cumulative (EIR)	337	340	472	542	201	253	351	321	736	974	1340	906
Accretive Major Pre Application Project	51	23	38	69	51	23	38	69	51	23	38	69
Merriam Mountains EIR removed	-23	-72	-58	-28	-23	-72	-58	-28	-23	-72	-58	-28
Reduced Campus Park removed	-25	-6	-12	-26	-4	-1	-2	-4	-6	-21	-23	-10
Revised Meadowood Cumulative	340	285	440	557	225	203	329	358	758	904	1297	937

The Meadowood EIR Traffic Impact Study listed the cumulative volumes and potential impacts in Table 26 from page 93, which is shown below as **Table 5**.

**Table 5: Meadowood EIR Traffic Study Table 26 (Traffic Study pg 93)**

Freeway Segment	I-15				I-15				I-15			
	Rainbow Valley Blvd to Mission Rd				Mission Rd to SR-76 (Pala Rd)				SR-76 to Escondido Hwy (Old 395)			
Existing (Year 2006)	136,000				127,000				120,000			
ADT	A M		P M		A M		P M		A M		P M	
Peak Hour Direction	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
Number of Lanes	4	4	4	4	4	4	4	4	4	4	4	4
Capacity (1)	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400
K Factor (2)	0.0619	0.0619	0.0738	0.0738	0.0619	0.0619	0.0738	0.0738	0.0590	0.0590	0.0723	0.0723
D Factor (3)	0.1653	0.8347	0.6398	0.3602	0.1653	0.8347	0.6398	0.3602	0.1989	0.8011	0.6955	0.3045
Truck Factor (4)	0.9186	0.9186	0.9186	0.9186	0.9186	0.9186	0.9186	0.9186	0.8977	0.8977	0.8977	0.8977
Peak Hour Volume	1,515	7,650	6,991	3,936	1,415	7,143	6,528	3,675	1,569	6,318	6,722	2,943
Volume to Capacity	0.161	0.814	0.744	0.419	0.150	0.760	0.694	0.391	0.167	0.672	0.715	0.313
LOS	A	D	C	A	A	C	C	A	A	C	C	A
Project Pk Hr Vol	68	23	34	81	10	3	4	11	20	54	63	27
Existing + Project												
Peak Hour Volume	1,583	7,673	7,025	4,017	1,425	7,146	6,532	3,686	1,589	6,372	6,785	2,970
Volume to Capacity	0.168	0.816	0.747	0.427	0.152	0.760	0.695	0.392	0.169	0.678	0.722	0.316
LOS	A	D	C	B	A	C	C	A	A	C	C	A
Increase in V/C	0.007	0.002	0.004	0.009	0.001	0.000	0.000	0.001	0.002	0.006	0.007	0.003
County Impact?	No	No	No	No	No	No	No	No	No	No	No	No
CMP Impact?	No	No	No	No	No	No	No	No	No	No	No	No
Cumulative Pk Hr Vol	337	340	472	542	201	253	351	321	736	974	1340	906
Existing+Cumulative												
Peak Hour Volume	1,852	7,990	7,463	4,478	1,616	7,396	6,879	3,996	2,305	7,292	8,062	3,849
Volume to Capacity	0.197	0.850	0.794	0.476	0.172	0.787	0.732	0.425	0.245	0.776	0.858	0.409
LOS	A	D	C	B	A	C	C	B	A	C	D	A
Existing+Cumulative+Project												
Peak Hour Volume	1,920	8,013	7,497	4,559	1,626	7,399	6,883	4,007	2,325	7,346	8,125	3,876
Volume to Capacity	0.204	0.852	0.798	0.485	0.173	0.787	0.732	0.426	0.247	0.782	0.864	0.412
LOS	A	D	C	B	A	C	C	B	A	C	D	A
Increase in V/C	0.007	0.002	0.004	0.009	0.001	0.000	0.000	0.001	0.002	0.006	0.007	0.003
Cumulative Impact?	No	No	No	No	No	No	No	No	No	No	No	No

Notes: (1) Capacity of 2,350 passenger cars per hour per lane (pcphpl) from Caltrans' Guide for the Preparation of Traffic Impact Studies, Dec 2002. (2) Latest K factor from Caltrans (based on 2005 data), which is the percentage of Annual Average Daily Traffic (AADT) in both directions. (3) Latest D factor from Caltrans (based on 2005 data), which when multiplied by K and ADT will provide peak hour volume. (4) Latest truck factor from Caltrans (based on 2000 data). CMP: Congestion Management Program impact.



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With the revised land use changes, the Meadowood EIR Traffic Study Table 26 has been updated with the revised cumulative project volumes as shown in **Table 6**.

**Table 6: Meadowood Revised I-15 Cumulative LOS Table**

Freeway Segment	I-15				I-15				I-15			
	Rainbow Valley Blvd to Mission Rd				Mission Rd to SR-76 (Pala Rd)				SR-76 to Escondido Hwy (Old 395)			
<u>Existing (Year 2006)</u>												
ADT	136,000				127,000				120,000			
Peak Hour	A M		P M		A M		P M		A M		P M	
Direction	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
Number of Lanes	4	4	4	4	4	4	4	4	4	4	4	4
Capacity (1)	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400
K Factor (2)	0.0619	0.0619	0.0738	0.0738	0.0619	0.0619	0.0738	0.0738	0.0590	0.0590	0.0723	0.0723
D Factor (3)	0.1653	0.8347	0.6398	0.3602	0.1653	0.8347	0.6398	0.3602	0.1989	0.8011	0.6955	0.3045
Truck Factor (4)	0.9186	0.9186	0.9186	0.9186	0.9186	0.9186	0.9186	0.9186	0.8977	0.8977	0.8977	0.8977
Peak Hour Volume	1,515	7,650	6,991	3,936	1,415	7,143	6,528	3,675	1,569	6,318	6,722	2,943
Volume to Capacity	0.161	0.814	0.744	0.419	0.150	0.760	0.694	0.391	0.167	0.672	0.715	0.313
LOS	A	D	C	A	A	C	C	A	A	C	C	A
<u>Project Pk Hr Vol</u>	68	23	34	81	10	3	4	11	20	54	63	27
<u>Existing + Project</u>												
Peak Hour Volume	1,583	7,673	7,025	4,017	1,425	7,146	6,532	3,686	1,589	6,372	6,785	2,970
Volume to Capacity	0.168	0.816	0.747	0.427	0.152	0.760	0.695	0.392	0.169	0.678	0.722	0.316
LOS	A	D	C	B	A	C	C	A	A	C	C	A
Increase in V/C	0.007	0.002	0.004	0.009	0.001	0.000	0.000	0.001	0.002	0.006	0.007	0.003
County Impact?	No	No	No	No	No	No	No	No	No	No	No	No
CMP Impact?	No	No	No	No	No	No	No	No	No	No	No	No
<u>Cumulative Pk Hr Vol</u>	340	285	440	557	225	203	329	358	758	904	1297	937
<u>Existing+Cumulative</u>												
Peak Hour Volume	1,855	7,935	7,431	4,493	1,640	7,346	6,857	4,033	2,327	7,222	8,019	3,880
Volume to Capacity	0.197	0.844	0.790	0.478	0.174	0.782	0.729	0.429	0.248	0.768	0.853	0.413
LOS	A	D	C	B	A	C	C	B	A	C	D	A
<u>Existing+Cumulative+Project</u>												
Peak Hour Volume	1,923	7,958	7,465	4,574	1,650	7,349	6,861	4,044	2,347	7,276	8,082	3,907
Volume to Capacity	0.205	0.847	0.794	0.487	0.175	0.782	0.730	0.430	0.250	0.774	0.860	0.416
LOS	A	D	C	B	A	C	C	B	A	C	D	A
Increase in V/C	0.007	0.002	0.004	0.009	0.001	0.000	0.000	0.001	0.002	0.006	0.007	0.003
Cumulative Impact?	No	No	No	No	No	No	No	No	No	No	No	No

Notes: (1) Capacity of 2,350 passenger cars per hour per lane (pcphpl) from Caltrans' Guide for the Preparation of Traffic Impact Studies, Dec 2002. (2) Latest K factor from Caltrans (based on 2005 data), which is the percentage of Annual Average Daily Traffic (AADT) in both directions. (3) Latest D factor from Caltrans (based on 2005 data), which when multiplied by K and ADT will provide peak hour volume. (4) Latest truck factor from Caltrans (based on 2000 data). CMP: Congestion Management Program impact.

As shown in Table 6, no new cumulative impacts were calculated based on the aforementioned land use density changes.

**ATTACHMENT A**

**Campus Park Reduced Project Peak Hour Volume Assignment on I-15**

## CAMPUS PARK REDUCED PROJECT ASSIGNMENT ON I-15.

The EIR TIA I-15 peak hour volumes are recreated in the left column with a new assignment for the reduced residential units in the right column. The arrows represent the direction of AM & (PM) peak hour volumes on I-15 north of Mission, between Mission & SR-76, and south of SR-76. The shaded cell on the right show where the residential volumes were reduced to match the new TG unit count as shown on the next page.

		<u>From EIR Traffic Study</u>			
I-15 North of Mission Ave	↓	68	AM	99	↑
		(137)	PM	(97)	
		Int #20 Mission		Int #21 Mission	
Mission Ave at I-15 SB Ramp		I-15 SB Ramp		I-15 NB Ramp	
From Fig 14b		SB RT (13%)		EB LT (13%)	
Residential		25 (87)		74 (37)	
From Fig 16b		SB RT (7%)		EB LT (7%)	
Commercial		<u>34</u> ( <u>31</u> )		<u>11</u> ( <u>47</u> )	
Total on & off at Mission Ave		59 (118)		85 (84)	
		SB OFF		NB ON	
Mission Ave		←————→			

		<u>Reduced Project (-325 Dus)</u>			
I-15 North of Mission Ave	↓	62	AM	74	↑
		(110)	PM	(85)	
		Int #20 Mission		Int #21 Mission	
Mission Ave at I-15 SB Ramp		I-15 SB Ramp		I-15 NB Ramp	
From Fig 14b		SB RT (13%)		EB LT (13%)	
<b>NEW Residential</b>		<b>20 (64)</b>		<b>53 (27)</b>	
From Fig 16b		SB RT (7%)		EB LT (7%)	
Commercial		<u>34</u> ( <u>31</u> )		<u>11</u> ( <u>47</u> )	
Total on & off at Mission Ave		54 (95)		64 (74)	
		SB OFF		NB ON	
Mission Ave		←————→			

I-15 North of SR-76	↓	9	AM	14	↑
		(19)	PM	(13)	
		Int #6 SR-76		Int #6 SR-76	
SR-76 at I-15 SB Ramp		I-15 SB Ramp		I-15 NB Ramp	
From Fig 14b		SB LT (2%)		WB RT (2%)	
Residential		4 (14)		12 (6)	
From Fig 16b		SB LT (1%)		WB RT (1%)	
Commercial		<u>5</u> ( <u>5</u> )		<u>2</u> ( <u>7</u> )	
Total on & off at SR-76		9 (19)		14 (13)	
		SB OFF		NB ON	
SR-76		←————→			

I-15 North of SR-76	↓	8	AM	10	↑
		(15)	PM	(11)	
		Int #6 SR-76		Int #6 SR-76	
SR-76 at I-15 SB Ramp		I-15 SB Ramp		I-15 NB Ramp	
From Fig 14b		SB LT (2%)		WB RT (2%)	
<b>NEW Residential</b>		<b>3 (10)</b>		<b>8 (4)</b>	
From Fig 16b		SB LT (1%)		WB RT (1%)	
Commercial		<u>5</u> ( <u>5</u> )		<u>2</u> ( <u>7</u> )	
Total on & off at SR-76		8 (15)		10 (11)	
		SB OFF		NB ON	
SR-76		←————→			

SR-76 at I-15 SB Ramp		Int #6 SR-76		Int #6 SR-76	
		I-15 SB Ramp		I-15 NB Ramp	
From Fig 14b		WB LT (12%)		NB RT (12%)	
Residential		70 (35)		24 (82)	
From Fig 16b		WB LT (10%)		WB RT (10%)	
Commercial		<u>16</u> ( <u>67</u> )		<u>49</u> ( <u>46</u> )	
Total on & off at SR-76		86 (102)		73 (128)	
		SB ON		NB OFF	

SR-76 at I-15 SB Ramp		Int #6 SR-76		Int #6 SR-76	
		I-15 SB Ramp		I-15 NB Ramp	
From Fig 14b		WB LT (12%)		NB RT (12%)	
<b>NEW Residential</b>		<b>49 (25)</b>		<b>18 (59)</b>	
From Fig 16b		WB LT (10%)		WB RT (10%)	
Commercial		<u>16</u> ( <u>67</u> )		<u>49</u> ( <u>46</u> )	
Total on & off at SR-76		65 (92)		67 (105)	
		SB ON		NB OFF	

I-15 South of SR-76	↓	86	AM	73	↑
		(102)	PM	(128)	

I-15 South of SR-76	↓	65	AM	67	↑
		(92)	PM	(105)	

**REDUCED CAMPUS PARK TRIP GENERATION**

Proposed Land Use	Rate	Size & Units		ADT	%	Split		AM		%	Split		PM	
								IN	OUT				IN	OUT
Residential - Single Family	10 /DU	521	DU	5,210	8%	0.3	0.7	125	292	10%	0.7	0.3	365	156
Residential - Multi Family	8 /DU	230	DU	1,840	8%	0.2	0.8	29	118	10%	0.7	0.3	129	55
Town Center (Neighborhood Shopping)	120 /KSF	61,200	SF	7,344	4%	0.6	0.4	176	118	10%	0.5	0.5	368	367
Office (more than 100KSF)	17 /KSF	157,000	SF	2,669	13%	0.9	0.1	312	35	14%	0.2	0.8	75	298
Neighborhood Park	5 /Acre	3.6	Acres	18	4%	0.5	0.5	0	0	8%	0.5	0.5	1	1
Neighborhood Park (Sports Complex)	50 /Acre	5.2	Acres	260	4%	0.5	0.5	5	5	8%	0.5	0.5	10	10
<b>Revised Project</b>				<b>17,341</b>				<b>647</b>	<b>568</b>				<b>948</b>	<b>887</b>
Approved Traffic Impact Study (TIS)				19,941				689	734				1,130	965
<b>Delta (negative represent reduction of trip over approved TIS)</b>				<b>-2,600</b>				<b>-42</b>	<b>-166</b>				<b>-182</b>	<b>-78</b>

Source: SANDAG *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002. DU - Dwelling Unit; SF - Square Feet; KSF - 1,000 sf; ADT-Average Daily Traffic; Split-percent inbound and outbound.

				AM	AM	PM	PM
CAMPUS PARK NEW				IN	OUT	IN	OUT
Residential	Percent	<b>7050</b>		<b>154</b>	<b>410</b>	<b>494</b>	<b>211</b>
	0.02	141		3	8	(10)	(4)
	0.12	846		18	49	(59)	(25)
	0.13	917		20	53	(64)	(27)

## **ATTACHMENT B**

### **Accretive Peak Hour Traffic Volume Assignment to I-15**

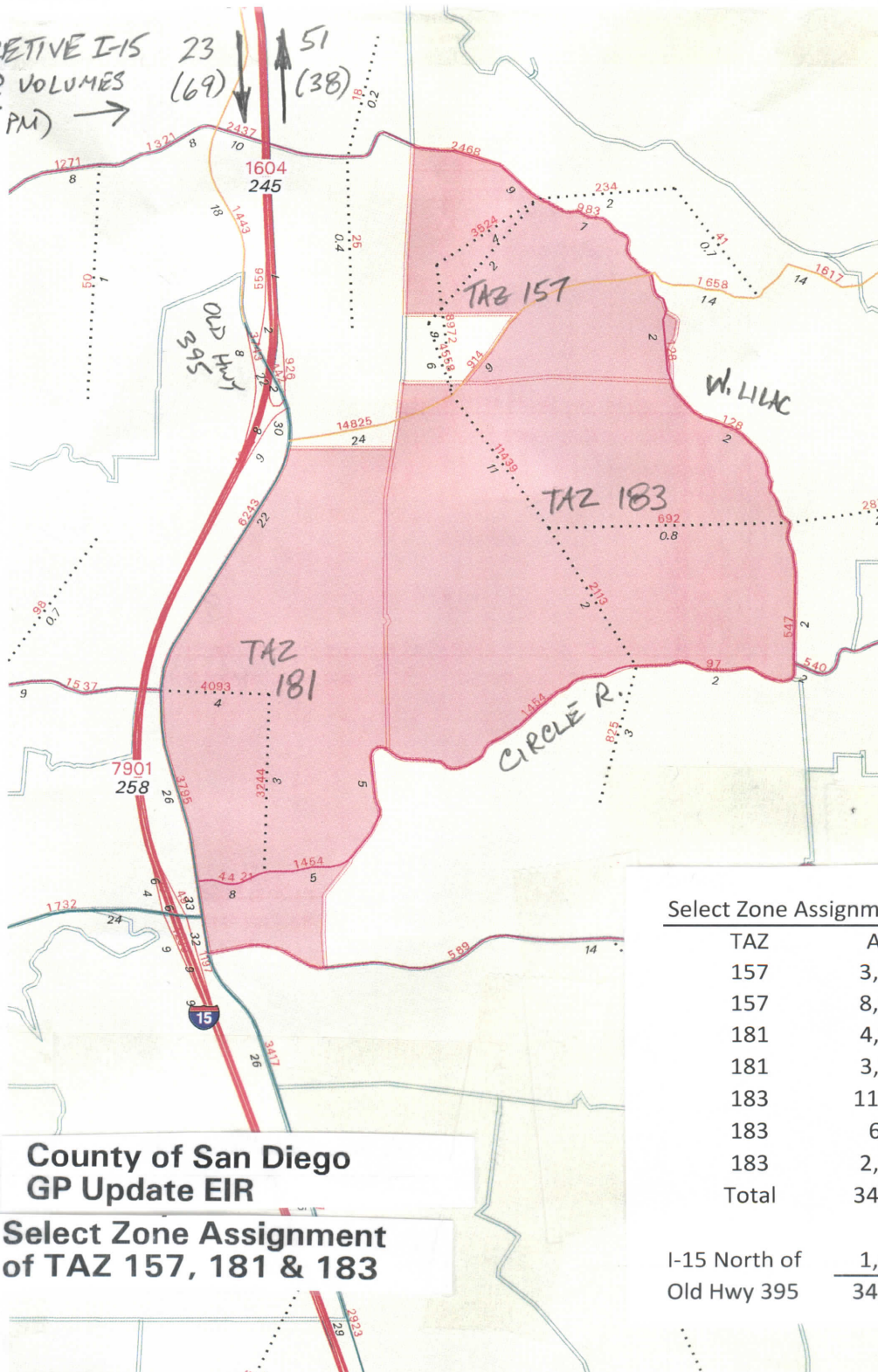
# Accretive Major Pre Application Proposed Land Uses

Proposed Land Use	Rate	Size & Units	ADT	%	Split	AM				PM			
						IN	OUT	%	Split	IN	OUT	%	Split
Residential - Single Family	10 /DU	745 DU	7,450	8%	0.3 0.7	179	417	10%	0.7 0.3	522	224		
Residential - Multi Family	8 /DU	1,000 DU	8,000	8%	0.2 0.8	128	512	10%	0.7 0.3	560	240		
Neighborhood Shopping Center	1200 /acre	5 Acres	6,000	4%	0.6 0.4	144	96	10%	0.5 0.5	300	300		
<b>EXTERNAL TOTAL (no schools or park[1])</b>			<b>21,450</b>			<b>451</b>	<b>1,025</b>			<b>1,382</b>	<b>764</b>		

Source: SANDAG Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002. SF - Square Feet; ADT-Average Daily Traffic; Split-percent inbound and outbound. [1] Schools not included in TG because school boundaries are unknown at this time. School boundaries most likely will not require I-15 travel. Park TG not included due to local attraction characteristics where minimal I-15 peak hour traffic would serve.

I-15 Distribution to/from the North 5% 1073 23 51 (69) (38)

ACCRETIVE I-15  
PK HR VOLUMES  
AM (PM) →



County of San Diego  
GP Update EIR

Select Zone Assignment  
of TAZ 157, 181 & 183

### Select Zone Assignment Distribution

TAZ	ADT
157	3,524
157	8,972
181	4,093
181	3,244
183	11,439
183	692
183	2,113
Total	34,077

I-15 North of Old Hwy 395  $\frac{1,604}{34,077} = 5\%$



## **ATTACHMENT C**

### **Merriam Mountains Peak Hour Traffic Volume Reduction on I-15**

# **MERRIAM MOUNTAINS SPECIFIC PLAN**

## **APPENDIX M – PART I**

### **TRAFFIC IMPACT ANALYSIS**

GPA 04-06; SP 04-006; R04-013; VTM5381; S04-035, S04-036, S04-037,  
S04-038; Log No. 04-08-028; SCH No. 2004091166

*for the*

## **RECIRCULATED ENVIRONMENTAL IMPACT REPORT**

**March 2009**

Note: Comments will be accepted on the entire appendix.

TRAFFIC IMPACT ANALYSIS  
**MERRIAM MOUNTAINS**  
San Diego County, California  
February 26, 2009

**MERRIAM MOUNTAINS SPECIFIC PLAN**  
GPA 04-06; SP 04-006; R04-013; VTM5381; S04-035, S04-036, S04-037, S04-038; Log No. 04-08-028;  
SCH No. 2004091166

LLG Ref. 3-03-1265

*Prepared by:*  
Narasimha Prasad  
Transportation Engineer III

*Under the Supervision of:*  
John Boarman, P.E.  
Principal

**Linscott, Law &  
Greenspan, Engineers**  
4542 Ruffner Street  
Suite 100  
San Diego, CA 92111  
**858.300.8800** T  
858.300.8810 F  
[www.llgengineers.com](http://www.llgengineers.com)

**TABLE 10-3  
YEAR 2030 FREEWAY OPERATIONS**

Segment	Capacity <sup>a</sup>	Peak Hour	Direction	Year 2030 With Existing General Plan Land Uses			Year 2030 With Proposed Project Land Uses			V/C B <sup>c</sup>
				Vol <sup>e</sup>	V/C <sup>c</sup>	LOS <sup>d</sup>	VOL	V/C	LOS	
<b>I-15</b>										
Centre City Pkwy. to Deer Springs Rd.	8,000	AM	NB	5,874	0.734	C	5,851	0.731	C	(0.003)
			SB	18,499	2.312	F(3)	18,428	2.303	F(3)	(0.009)
		PM	NB	14,781	1.848	F(3)	14,724	1.840	F(3)	(0.007)
			SB	7,214	0.902	D	7,187	0.898	D	(0.003)
Deer Springs Rd. to Gopher Canyon Rd.	8,000	AM	NB	5,601	0.700	C	5,624	0.703	C	0.003
			SB	17,639	2.205	F(3)	17,711	2.214	F(3)	0.009
		PM	NB	14,093	1.762	F(3)	14,151	1.769	F(3)	0.007
			SB	6,879	0.860	D	6,907	0.863	D	0.003
<b>SR 78</b>										
Mar Vista Dr. to Sycamore Ave.	7,200	AM	EB	6,428	1.071	F(0)	6,428	1.071	F(0)	-
			WB	5,252	0.875	D	5,252	0.875	D	-
		PM	EB	6,849	1.142	F(0)	6,849	1.142	F(0)	-
			WB	5,914	0.986	E	5,914	0.986	E	-

MEDIUM MTS VOLUMES

23  
71  
57  
27

23  
72  
58  
28

**Footnotes:**

- a. Capacity based on 2,000 per mainline, 1200 per HOV lane
- b. Vol = Peak hour volume.
- c. V/C = Volume / Capacity.
- d. LOS = Level of Service.
- e. Δ = Project-attributable increase in V/C.

