Appendix H

Internal Capture Rate Support Data

LOS Engineering, Inc.
Traffic and Transportation

5114 Sea Mist Ct, San Diego, CA 92121
Phone 619-890-1253, Fax 619-374-7247

December 11, 2007

Mr. Nick Ortiz
County of San Diego DPW
5469 Kearny Villa Road, Suite 305
San Diego, CA 92123-1159

SUBJECT: Series 11 Internal Capture Rate Findings for Campus Park (TM 5338) and Meadowood (TM 5354)

Dear Mr. Ortiz:

The purpose of this letter is to request approval of a 33% internal capture rate from a SANDAG Series 11 year 2030 traffic model for use in the traffic impact study for Campus Park and Meadowood.

The cordon defining the 33% internal capture rate and the Traffic Analysis Zone (TAZs) making up the internal capture rate area are shown in **Attachment A**. The internal capture rate difference from 100% will define the 67% that will leave the internal study roadways. The internal study roadways will have 100% project assignment.

A search of on-line and printed material was conducted to determine if the aforementioned internal capture rate is reasonable. The Institute of Transportation Engineers (ITE) has aggregated multiple papers documenting internal capture rates for isolated communities. An average internal capture rate of 37% was calculated from three papers that covered 10 communities. A summary is shown in **Table 1** with the ITE compilation of papers included in **Attachment B**.

Table 1: Other Documented Internal Capture Rates

Report and Details	Internal Capture Rate
FDOT Districtwide Trip Generation Study, March 1995	
Crocker Center	41%
Mizner Park	40%
Galleria Area	38%
Contry Isles	33%
Village Commons	28%
Boca Del Mar	33%
FDOT Characteristics Study, Dec 1993	
Average of three sites (range 28%-33%)	31%
JHK Brandermill PUD Traffic Generation Study, June 1984	
Brandermill Virginia	51%
Average Internal Capture Rate from ITE Sources	**37%**

The internal capture rate area includes four projects that create a small community with complementing land uses. The latest proposed land uses were obtained for the four projects as shown in **Table 1**.

Table 1: Community Land Uses Making Up the Internal Capture Rate Area

Series 11 TAZ	Project & Land Use	Size	Units	Trip Rate	ADT
4606	Campus Park				
	Single Family	529	DU	10 ADT/DU	5,290
	Multi Family	187	DU	8 ADT/DU	1,496
4607	Campus Park				
	Mixed Commercial	72,000	SF	120 ADT/KSF	8,640
	Professional Office	157,000	SF	20 ADT/KSF	3,140
4609	Campus Park				
	Neighborhood Park	10.6	Acres	5 ADT/Ac	53
	Meadowood				
	Elementary School	12.7	Acres	90 ADT/Ac	1,143
	Neighborhood Park	10	Acres	5 ADT/Ac	50
4610	Meadowood				
	Single Family	355	DU	10 ADT/DU	3,550
	Multi Family	503	DU	8 ADT/DU	4,024
	Campus Park				
	Multi Family	280	DU	8 ADT/DU	2,240
	Campus Park West				
	Multi Family	395	DU	8 ADT/DU	3,160
4608	Palomar (Fallbrook College)				
	Community College (1)	120	Acres	Unknown	3,500
110	Campus Park West (2)				
	Mixed Commercial	230,000	SF	120 ADT/KSF	27,600
	Professional Office	300,000	SF	20 ADT/KSF	6,000
	Campus Park				
	Highway Commercial	140,000	SF	120 ADT/KSF	16,800
				Total ADTs	**86,686**

Notes: (1) College ADT from RBF - traffic consultant that prepared the traffic study for Fallbrook College.
(2) Additional Campus Park West land uses are also proposed south of SR-76. The aforementioned Campus Park West land uses are only proposed north of SR-76.

Your timely review and approval of the aforementioned internal capture rate would be greatly appreciated. Please call me at (619) 890-1253 if you have any questions.

Sincerely,
LOS Engineering, Inc.

Justin Rasas, P.E.(60690), PTOE
Principal and Officer of LOS Engineering, Inc.

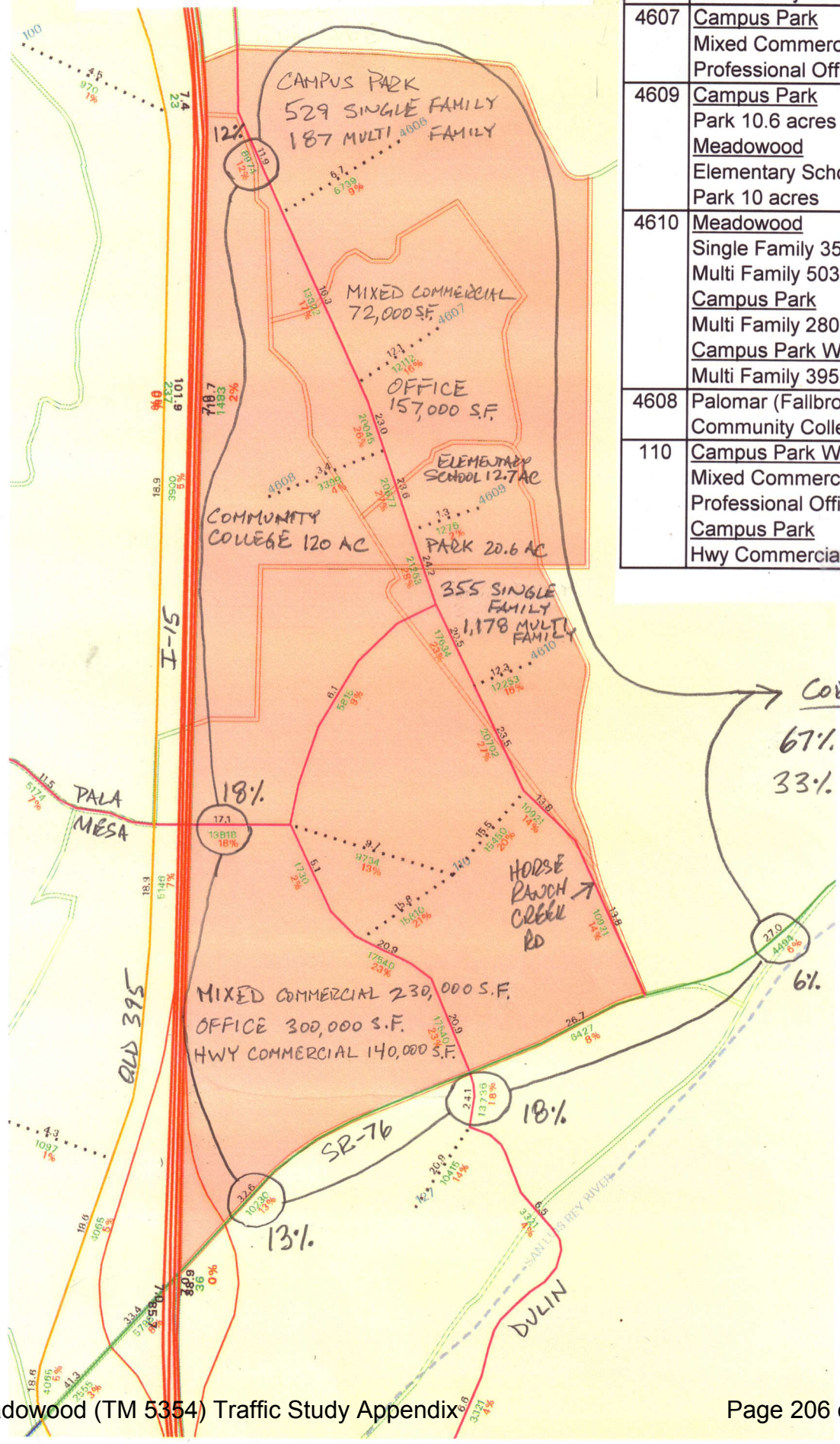
cc: Mr. Maurice Eaton (Caltrans)

ATTACHMENT A

SANDAG SERIES 11 YEAR 2030 TRAFFIC MODEL

SANDAG Series 11 (Year 2030)
Run date = 12/7/07

TOTAL PRODUCTIONS & ATTRACTIONS		
TAZ	**Project & Land Use**	**ADT**
4606	Campus Park	
	Single Family 529 Units	5,290
	Multi Family 187 Units	1,496
4607	Campus Park	
	Mixed Commercial 72 KSF	8,640
	Professional Office 157 KSF	3,140
4609	Campus Park	
	Park 10.6 acres	53
	Meadowood	
	Elementary School	1,143
	Park 10 acres	50
4610	Meadowood	
	Single Family 355 Units	3,550
	Multi Family 503 Units	4,024
	Campus Park	
	Multi Family 280 Units	2,240
	Campus Park West	
	Multi Family 395 Units	3,160
4608	Palomar (Fallbrook College)	
	Community College 120 ac	3,500
110	Campus Park West	
	Mixed Commercial 230 KSF	27,600
	Professional Office 300 KSF	6,000
	Campus Park	
	Hwy Commercial 140 KSF	16,800
	Total ADTs	**86,686**



ATTACHMENT B

ITE SUMMARY OF LITERATURE ON MULTI-USE DEVELOPMENTS

APPENDIX C

Summary of Literature on Multi-Use Developments

This appendix includes material that is strictly for informational purposes. It provides no recommended practices, procedures, or guidelines.

C.1 Background

Presented below are summaries of key quantitative and qualitative findings from known data bases on trip characteristics at multi-use sites. For each study, data are presented (as available) on the mix and sizes of land uses within the site, the level of internalization of trips within the site, overall trip generation characteristics for the site, and the level of pass-by trips for the site. In most cases, the analyses use ITE defined independent variables. In several cases, new variables are introduced.

1. Districtwide Trip Generation Study, Florida Department of Transportation, District IV, March 1995

The Florida Department of Transportation (FDOT) sponsored this study for two reasons: first, to develop a data base that could help identify internal capture rates for multi-use development sites; and second, to develop a data base from which pass-by capture rates could be established.

A summary of the characteristics of the six surveyed multi-use sites is presented in table C.1. The sites range in area from 26 to 253 acres (with four of the sites being 72 acres or less). The office/commercial square footage ranges between 250,000 and 1.3 million square feet (with three of the sites having less than 300,000 square feet).

Internal Trips

The proportion of daily trips generated within the surveyed multi-use sites that were internal to the sites are listed in table C.2. The internal capture rates ranged between 28 and 41 percent, with an average of 36 percent across the six sites.

Table C.1 Characteristics of Multi-Use Sites Surveyed by FDOT

MULTI-USE SITE	SITE SIZE (ACRES)	OFFICE (SQ. FOOTAGE)	COMMERCIAL (SQ. FOOTAGE)	HOTEL (ROOMS)	RESIDENTIAL (UNITS)
Crocker Center	26	209,000	87,000	256	0
Mizner Park	30	88,000	163,000	0	136
Galleria Area	165	137,000	1,150,000	229	722
Country Isles	61	59,000	193,000	0	368
Village Commons	72	293,000	231,000	0	317
Boca Del Mar	253	303,000	198,000	0	1,144

Table C.2 Daily Internal Capture Rates at FDOT Sites

Multi-Use Development Site	Internal Capture Rate (percentage)
Crocker Center	41
Mizner Park	40
Galleria Area	38
Country Isles	33
Village Commons	28
Boca Del Mar	33
Overall Average	**36**

Three of the multi-use sites were further evaluated to determine the internal capture rates for different types of trip makers. As listed in table C.3, the internal capture rates for trips made by site workers are typically higher than rates found for visitors to the site (i.e., users of the multi-use site services). The rates by trip maker are remarkably consistent across all three sites. On average, 37 percent of user trips are internal and 47 percent of worker trips are internal to the multi-use site.

Table C.3 Internal Trip Capture Rates (Percentages) by Type of Trip Maker at FDOT Sites

Trip-Maker	Crocker Center	Mizner Park	Galleria Area	Average
Users	37	38	36	37
Workers	46	49	46	47
Total	**41**	**40**	**38**	**40**

Finally, three of the multi-use sites were further evaluated to determine the internal capture rates of individual land uses. Table C.4 lists the reported internal capture rates by land use/trip purpose. In general, the higher internal capture rates were reported for trips to and from banks and sit-down restaurants.

Table C.4 Internal Trip Capture Rates (Percentages) by Land Use Type at FDOT Sites

LAND USE/TRIP PURPOSE	CROCKER CENTER	MIZNER PARK	GALLERIA AREA
Office (General)	11	11	7
Office (Medical)	-	15	12
Retail	36	30	42
Restaurant (Sit-Down)	54	52	-
Restaurant (Fast)	26	-	56
Hotel	30	-	29
Bank	-	48	62
Cinema	-	23	-
Multi-Family Housing	-	11	50
Retail Mall	-	-	39

Vehicle Trip Generation

The actual vehicle trip generation rates measured at the six study sites are compared to the estimated trip generation rates based on ITE *Trip Generation*, Fifth Edition, data in table C.5. A value of less than 1.0 indicates that the number of actual overall vehicle trips generated is less than that predicted using ITE rates.

As shown in the first column of the table, the actual number of vehicle-trips generated by a multi-use site on a daily basis is substantially less than a number predicted using ITE *Trip Generation* rates for each individual component of the site (i.e., disaggregated). In contrast, the actual trip generation on a daily basis roughly equals an estimate based on the "full-size" trip generation rates for the total square footage (or comparable independent variable) for all land uses by type within the site (i.e., aggregated). Even though a high percentage of internal trips was observed at all six sites (as documented earlier), there appears to be little effect on daily vehicle trip generation rates for the overall multi-use site.

In terms of a trip generation rate for the morning peak hour, an average of the measured rates equals the aggregated ITE *Trip Generation* rate (although the six sites demonstrated a much wider range of variability than was the case for daily trip generation). The evening peak hour trip generation rates are on average 20 percent less than the aggregate site estimate based on ITE rates. This reduction is consistent across the six study sites.

Table C.5 Comparison Between Actual FDOT Vehicle Trip Generation and an Estimate from ITE *Trip Generation*

	Ratio of Actual Vehicle Trip Generation to ITE Estimate			
MULTI-USE SITE	TOTAL DAILY (DISAGGREGATED)	TOTAL DAILY (AGGREGATE)	A.M. PEAK HOUR (AGGREGATE)	P.M. PEAK HOUR (AGGREGATE)
Crocker Center	0.82	0.99	1.27	0.82
Mizner Park	1.13	1.07	0.73	0.77
Galleria Area	0.71	0.99	1.09	0.84
Country Isles	0.72	1.04	1.10	0.85
Village Commons	0.69	1.06	0.92	0.80
Boca Del Mar	0.70	0.98	1.06	0.73
Overall Average	**0.77**	**1.02**	**1.00**	**0.80**

Pass-By Trips

The pass-by trip proportions, as determined through intercept surveys, are listed in table C.6 for the six study sites. It is perhaps most telling that four of the six sites are reported to have pass-by rates between 26 and 29 percent.

Table C.6 Daily Pass-By Rates at FDOT Sites

MULTI-USE DEVELOPMENT SITE	DAILY PASS-BY RATE (PERCENTAGE)
Crocker Center	26
Mizner Park	29
Galleria Area	40
Country Isles	28
Village Commons	14
Boca Del Mar	29
Overall Average	**28**

2. FDOT Trip Characteristics Study of Multi-Use Developments, FDOT District IV, December 1993

This study was the predecessor of the March 1995 FDOT trip generation study. Much of the data that were collected and many of the relationships derived in this first study are included in the 1995 study results described above. However, the 1995 study did not report on two relationships presented in the 1993 report (summarized below).

Internal Trips

Relationships were developed for estimating internal trips as a function of the combination of two land use types in terms of residential units and office/retail square footage. Strong relationships were developed for two internal trip type categories: between residential and retail uses and between retail and retail uses. The office-retail relationship was less definitive.

The study presented a working hypothesis that the number of internal trips from one land use type (A) to another land use (B) within a multi-use site is directly proportional to the size of land use A and also proportional to the size of land use B. This suggests a functional relationship of the form:

Person Trips between A and B = Constant x Land Use A x Land Use B where:

Land Use A = total site land use of type A in residential units or per 1,000 square feet,

Land Use B = total site land use of type B in residential units or per 1,000 square feet, and

Constant = a value that is solely a function of the two land use types.

In the equation shown above, the constant can be derived from information collected on person trips between different land use types and on the sizes of these different land uses. The derived constants are listed in table C.7.

Table C.7 Internal Trip Coefficients for Paired Land Use Types

PAIRED LAND USES	MIDDAY PEAK PERIOD (12 NOON - 2 P.M.)	EVENING PEAK PERIOD (4 P.M. - 6 P.M.)	DAILY
Residential/Retail	0.00082	0.00103	0.00557
Office/Retail	0.00087	0.00024	0.00232
Retail/Retail	0.01219	0.00995	0.07407

For example, application of these coefficients for a particular multi-use site with 1,144 residential dwelling units, 198,000 square feet of retail, and 303,000 square feet of office space would yield the following results:

◆ number of daily internal trip ends between residential and retail uses is 1,262 [0.00557 x 1,144 (residential units) x 198 (1,000 retail square footage) = 1,262]

◆ number of daily internal trip ends between office and retail uses is 139 [0.00232 x 303 (1,000 office square footage) x 198 (1,000 retail square footage) = 139]

◆ number of daily internal trip ends between retail and retail uses is 2,904 [0.07407 x 198 (1,000 retail square footage) x 198 (1,000 retail square footage) = 2,904]

This study also collected information on internal capture rates by time of day. Total internal capture rates for the three surveyed multi-use sites are shown in table C.8. The estimated daily midday and evening peak period internal capture rates are quite similar. The daily internal capture rates range from 28 percent to 33 percent for the three survey sites (with an overall average of 31 percent). The midday and evening peak periods produced similar ranges for the three survey sites, 30 to 35 percent and 28 to 32 percent, respectively.

The mean values for the entire survey period shown in table C.8 have a high degree of statistical validity. Maximum two-tailed errors calculated using the binomial distribution, with 90 percent confidence level methodology, are all less than 5 percent.

Table C.8 Internal Person Trip Ends by Time of Day (Percentage)

TIME PERIOD	AVERAGE RECORDED AT THREE SITES	RANGE RECORDED AT THREE SITES
Daily	31	28 - 33
Midday Peak Period (12 noon - 2 P.M.)	32	30 - 35
Evening Peak Period (4 P.M. - 6 P.M.)	30	28 - 32

3. Trip Generation for Mixed-Use Developments, Technical Committee Report, Colorado-Wyoming Section, Institute of Transportation Engineers, January 1986.

This study was undertaken to determine how trip generation estimates using ITE rates compared to actual driveway counts at multi-use developments in Colorado and Wyoming. Also included were interviews to determine whether persons entering and leaving multi-use sites came there for multiple purposes. The size and mix of land uses at the eight sites with interviews are listed in table C.9.

NO GOOD BECAUSE RESIDENTIAL WAS NOT INCLUDED.

Table C.9 Characteristics of Multi-Use Sites with Interviews

SITE	SIZE (SQUARE FEET)	LAND USES
1	240,917	Retail, General Office, Government Office, Restaurants, Health Club, Bank
2	731,846	Retail, Office, Restaurants, Hotel
3	500,000	Retail, Office, Restaurants, Motel, Theaters
4	115,000	Retail, Restaurants, Hardware Store, Supermarket
5	1,000,000	Regional Mall, Retail, Restaurants, Banks, Office, Theaters
6	110,000	Retail, Theaters, Restaurants, Banks
7	95,104	Retail, Restaurants, Supermarket, Medical Office, Savings & Loan
8	300,000	Retail, Hardware, Restaurants, Supermarkets, Post Office

Internal Trips

A key piece of information collected at the interview sites was the number of trip purposes that an interviewed person accomplished on the particular trip within the site. Overall, a majority (77 percent) of the interviewees indicated that their trip involved only a single stop within the multi-use site. However, this still left a significant proportion (23 percent) who indicated they were making two or more stops within the site. Based on these interview results, the study authors estimated that 25 percent of an otherwise total number of trips were eliminated with the linking of internal trips within the eight surveyed multi-use sites.

Table C.10 presents the "number of trip purposes" data, arrayed according to the primary destination. This data gives the reader a sense for which land uses tend to generate multi-stop trips within multi-use sites. Office buildings and a post office generated the greatest number of multi-stop trips. Theaters, restaurants, and banks tended to generate lower-than-average numbers of multi-stop trips within the site.

Table C.10 Percentages of Persons within Multi-Sites by Number of Purposes (Stops) and by Primary Destination

PRIMARY DESTINATION	NUMBER OF PURPOSES/STOPS STATED BY INTERVIEWEE		
	1 PURPOSE (%)	2 PURPOSES (%)	3+ PURPOSES (%)
Bank/Savings and Loan	83	8	9
Hardware Store	76	22	2
Supermarket	77	17	6
Theater	93	7	0
Office/Work Site	68	31	1
Small Retail Shop	73	14	13
Restaurant	85	12	3
Health Club	71	29	0
Post Office	63	24	13
Total (Average)	**77**	**16**	**7**

Trip Generation

Vehicle trip generation data were collected at nine sites, as described in table C.11. During both the morning and evening peak hours for the generators within the nine multi-use sites, the actual vehicle counts were less than the calculated volumes from ITE *Trip Generation* rates. On a daily basis, six of the nine actual counts were also less.

Several of the surveyed sites are predominantly shopping centers (with some peripheral office or hotel space within the site boundaries) for which trip reduction estimates are not truly valid. Table C.12 presents the comparisons between driveway counts and ITE *Trip Generation* estimates (for each disaggregated element of the site) for the three surveyed sites that best fit the traditional view of a multi-use site. The site numbers in the table correspond to site numbers used previously in table C.11.

The measured reduction in trips generated by the site (as an indirect and perhaps direct result of an internal capture rate) varies considerably. As shown in table C.12, during the morning peak hour, the measured reduction at the three sites with internal trips ranged from 30 to 37 percent, with an average of 33 percent. The average reduction was 29 percent during the evening peak hour (with observed values ranging between 15 and 45 percent). Finally, on a daily basis the average reduction in vehicle trips was 13 percent (with a range between 9 and 20 percent).

Table C.11 Characteristics of Trip Generation Data Collection Sites

SITE	SIZE (SQUARE FEET)	LAND USES
1	154,536	Retail, Office, Government Office, Restaurants, Health Club
2	86,381	Retail, Restaurants, Bank
3	731,846	Retail, Office, Restaurants, Hotel
4	500,000	Retail, Office, Restaurants, Motel, Theaters
5	61,198	Retail, Office
6	115,000	Retail, Restaurants, Hardware Store, Supermarket
7	1,773,500	Office, Restaurants, Bank, Hotel, Medical Office, Training Center
8	177,277	Retail, Office, Medical Office, Restaurants, Health Club, Bank, Theater, Hardware Store, Supermarket, Savings & Loan
9	95,104	Retail, Restaurants, Bank, Supermarket, Medical Office, Savings & Loan

The measured driveway volumes show vehicle trip reductions that could be considered to approximate the 25 percent drop caused by internalization of trips. It was the researchers' conclusion that most of the secondary trip purposes indicated by interviewees occur because of the availability of multiple retail outlets in close proximity to major primary destinations, such as work locations, supermarkets, banks, restaurants, hotels, and theaters in multi-use developments. If the secondary destinations were not in close proximity to the primary destinations, trips to the secondary destinations would not occur or would occur at a much less frequent rate.

Table C.12 Comparison of ITE *Trip Generation* with Driveway Counts

SITE NO.	A.M. PEAK HOUR			P.M. PEAK HOUR			DAILY		
	ITE	COUNT	CHANGE	ITE	COUNT	CHANGE	ITE	COUNT	CHANGE
3	1,217	855	362 (30%)	1,491	821	670 (45%)	12,838	11,706	1,132 (9%)
4	922	640	282 (31%)	1,337	1,138	199 (15%)	15,119	13,718	1,401 (9%)
7	3,878	2,448	1,430 (37%)	4,019	2,891	1,128 (28%)	30,408	24,462	5,946 (20%)

4. Trip Generation at Special Sites, Virginia Transportation Research Council, Charlottesville, Virginia, VHTRC 84-R23, January 1984.

Driveway vehicle counts were taken at a multi-use site located in a densely developed area in the Northern Virginia suburbs of Washington, D.C. The multi-use site contains 606 rental units (555 of which are located in a high-rise, the remainder being multi-level townhouse units) and approximately 64,000 square feet of retail/office area (including a delicatessen, a commercial cleaning company office, two building contractor offices, a restaurant, a bank, a hospital consulting company, a direct-mail advertising firm, a real estate agency, a management consulting group, and a dentist). The site is served by transit.

Vehicle Trip Generation

Table C.13 presents a comparison between the measured trip rates at the site and the estimated trips calculated from the ITE *Trip Generation*, Fifth Edition rates. Counts were taken (and trip generation estimates developed) for the morning peak hour, the evening peak hour, and the weekday daily time periods. The field-counted trips were 27 percent less than the ITE-calculated rates during the evening peak hour and 17 percent less during a 24-hour period. As has been stated in previous assessments of multi-use sites in this chapter, the reasons for this reduction could be twofold: (1) internalization of trips and (2) simple randomness of the actual trip generation rates.

NOT APPLICABLE AS REPORT CONCLUDES ON NEXT PAGE THAT INTERNAL TRIP RATES ARE NOT POSSIBLE TO ESTIMATE FROM A COMPARISON OF COUNTED VS. ITE-CALCULATED TRIP RATES.

Table C.13 Comparison of Actual and Counted Trip Ends

	A.M. PEAK HOUR (7 - 9 A.M.)	P.M. PEAK HOUR (4 - 6 P.M.)	DAILY
ITE Calculated	337	764	8,222
Field Counted	440	559	6,803
Difference from Calculated	**103 Higher (31%)**	**205 Lower (27%)**	**1,419 Lower (17%)**

Internal Trips

Trip-making at the site was only measured at its boundary. No internal counts or interviews were conducted. It is not possible to estimate internal trip rates directly from a comparison between counted and ITE-calculated vehicle trip rates. Nevertheless, all other factors being equal, it appears that the evening peak hour internal capture rate is greater than that during the morning peak hour.

5. A Trip Rate Interaction Model for Mixed Land Use Developments, University of Maryland Department of Civil Engineering (Gang-Len Chang, Chao-Hua Chen, Everett C. Carter), and Maryland State Highway Administration, November 1992

The objective of this study was to develop a systematic procedure for estimating the traffic impact of multi-use developments. The recommended method from the research is based on the results of surveys at three multi-use sites. The general characteristics of the survey sites are presented in table C.14. For the purposes of this chapter, the Cross Keys development is the most representative of a multi-use site, although it is situated in an urban setting. Burke Center more closely resembles a small town or rural village, but its trip-making characteristics are nevertheless presented below. The Reston development stretches over 20 square miles and is not truly a multi-use development in the context of this handbook; its trip-making characteristics are not discussed further.

Internal Trips

The measured internal capture rates for individual land uses at the two applicable survey sites are listed in table C.15. Similar to findings in other studies, the internal capture rates are higher at office buildings for the evening peak than for the morning peak (because site workers are more likely to make secondary trips during the afternoon than in the morning). The high morning internal capture rate for the retail mall is not meaningful because it represents an inconsequential number of trips that would not typically be considered in a traffic impact analysis.

X

NOT APPLICABLE AS REPORT IS UNCLEAR IF COUNTS INCLUDED RESIDENTIAL AREAS.

Table C.14 Characteristics of Survey Sites

	CROSS KEYS	BURKE CENTER	RESTON
Size	72 acres	1,700 acres	14,046 acres
Residences	942	19,643	56,188
Single-Purpose Office	104,841 sf (service-oriented)	17,254 sf (service-oriented)	294,000 (non-service)
Multi-Purpose Building	61,000 sf (bank, retail, office, medical)	—	847,950 sf (office, bank, retail, hotel, theater)
Retail	—	117,269 sf	—

Table C.15 Internal Trip Capture Rates at Individual Land Uses in Multi-Use Sites

	CROSS KEYS			BURKE CENTER		
	A.M. PEAK (7-9)	P.M. PEAK (4-5:30)	ALL DAY	A.M. PEAK (7-9)	P.M. PEAK (4-5:30)	ALL DAY
Single-Purpose Office (Service-Oriented)	4%	13%	8%	7%	17%	17%
Multi-Purpose Building	1%	27%	11%	—	—	—
Retail Mall	—	—	—	29%	17%	15%

The University of Maryland study reports vehicle trip generation at each survey site, but it is unclear whether or not the counts included the residential areas and whether or not some vehicle movements may have been double-counted. Therefore, the results are not presented here. The University of Maryland study did not attempt to quantify pass-by trips.

6) The Brandermill PUD Traffic Generation Study, Technical Report, JHK & Associates, Alexandria, Virginia, June 1984.

Brandermill is a large, planned multi-use development (and, in many respects, is a small town/village) located approximately 10 miles southwest of Richmond, Virginia. At the time of the study, there were approximately 2,300 occupied dwelling units, with 180 townhouse-style condominiums and 2,120 single-family detached units. Commercial development consisted of an 82,600-square foot shopping center, a 63,000-square foot business park, a 14,000-square foot medical center, and a 4,400-square foot restaurant. There were also recreational facilities, including a golf course, tennis courts, swimming facilities, and several lakeside recreation facilities. Finally, there was a day-care center, a church, an elementary school, and a middle school. The study had the overall goal of determining the on-site (internal) and off-site (external) traffic generation at Brandermill.

Internal Trips

The split between internal and external trips was estimated on the basis of various data. As shown in table C.16, 51 percent of the daily trips, 55 percent of the evening peak hour trips, and 45 percent of the morning peak hour trips were internal to (or captured within) the multi-use site. Additionally, 46 percent of the persons employed in Brandermill also reside there.

Table C.16 Split Between Internal and External Trip Ends at Brandermill

	A.M. PEAK HOUR	P.M. PEAK HOUR	DAILY
Total Generated	2,570	2,935	33,540
External Trips	1,420	1,325	16,280
Internal Trips	1,150 (45%)	1,610 (55%)	17,260 (51%)

Travel questionnaires were distributed to residences and used to measure the level of internal trip ends for home-based trips. As shown in table C.17, roughly 35 percent of the daily home-based trips from Brandermill residences are linked with trip ends within Brandermill. Over 39 percent of the daily trip ends *to* Brandermill residences start within Brandermill. For the shopping center trips within Brandermill, roughly two-thirds of the trips originate within Brandermill during the midday and evening peak hours.

Table C.17 Internal Trip Ends Linked with Brandermill Residences and Retail Centers

HOURS	HOME-BASED TRIPS WITH DESTINATIONS WITHIN BRANDERMILL	HOME-BASED TRIPS WITH ORIGINS WITHIN BRANDERMILL
7 A.M. to 9 A.M.	18%	51%
9 A.M. to 4 P.M.	44%	50%
4 P.M. to 6 P.M.	55%	34%
6 P.M. to 7 A.M.	41%	34%
Daily	35%	39%

HOURS	SHOPPING CENTER TRIPS WITH DESTINATIONS WITHIN BRANDERMILL	SHOPPING CENTER TRIPS WITH ORIGINS WITHIN BRANDERMILL
11 A.M. to 1 P.M.	66%	65%
4 P.M. to 6 P.M.	66%	52%

7. Travel Characteristics at Large-Scale Suburban Activity Centers, JHK & Associates, NCHRP Report 323, 1990.

The objective of the project was to develop a comprehensive data base on travel characteristics for various types of large-scale, multi-use suburban activity centers (SAC). The activity centers studied were very large and had a scale very different from typical multi-use development. Therefore, the findings of this study are applicable only in major activity centers.

Data were collected at the six suburban activity centers listed in table C.18. Following is a summary of findings pertinent to internal trips for each of the land uses listed. It is noted that "larger centers" refers to the three centers with at least 15 million square feet of office/retail space, whereas "smaller centers" refers to the remaining three, which have less than 8 million square feet. A summary of some relevant relationships that were reported in NCHRP 323 is presented in table C.19.

Table C.18 Characteristics of NCHRP Report 323 Study Sites

SUBURBAN ACTIVITY CENTER	OFFICE SPACE		RETAIL SPACE		HOTEL ROOMS	RESIDENTIAL DWELLING UNITS
	GFA	EMPLOYEES	GLA	EMPLOYEES		
Bellevue (Washington)	4.7 million	12,880	3 million	6,150	1,000	N/A
South Coast Metro (Orange Co., California)	3.5 million	10,465	4 million	6,865	1,800	2,300
Tysons Corner (Fairfax Co., Virginia)	17.0 million	35,020	7 million	13,355	3,100	15,000
Parkway Center (Dallas, Texas)	13.0 million	39,000	2 million	3,430	1,800	206
Perimeter Center (Atlanta, Georgia)	13.0 million	32,500	3 million	5,150	910	2,000
Southdale (Minneapolis, Minnesota)	4.0 million	13,700	3 million	6,155	2,200	3,000

Table C.19 Internal Trip-Making Characteristics at NCHRP 323 Study Sites

	AVERAGE	RANGE
OFFICE EMPLOYEES		
% who make an intermediate stop		
• on the way to work	10%	7 - 15%
• on the way home from work	11%	6 - 16%
% who make midday trips internal to the activity center		
• SAC with high level of professional employment[1]	—	29 - 33%
• SAC with low level of professional employment	—	20 - 23%
OFFICE VISITORS — % from within activity center		
• A.M. Peak Period		
• all SAC	—	15 - 59%
• small SAC	30%	—
• large SAC	54%	—
• P.M. Peak Period		
• all SAC	—	15 - 68%
• small SAC	33%	—
• large SAC	58%	—
REGIONAL MALLS — % trips which are internal to SAC		
• Midday		
• all SAC	37%	7 - 68%
• small SAC	23%	—
• large SAC	47%	—
• P.M. Peak Period		
• all SAC	24%	7 - 57%
• small SAC	14%	—
• large SAC	31%	—
EMPLOYED RESIDENTS — % who work within SAC		
• all	—	13 - 50%
• small SAC	27%	—
• large SAC	33%	—
HOTEL TRIPS — % internal to SAC		
• A.M. Peak Period		
• all SAC	—	13 - 53%
• small SAC	19%	—
• large SAC	37%	—
• P.M. Peak Period		
• all SAC	—	15 - 46%
• small SAC	27%	—
• large SAC	36%	—

1 Sites with at least 60 percent of the work force in professional, technical, managerial, or administrative positions.

C.2 References

Districtwide Trip Generation Study, Walter H. Keller, Inc., for the Florida Department of Transportation, District IV, March 1995.

FDOT Trip Characteristics Study of Multi-Use Developments, Tindale-Oliver and Associates, for FDOT District IV, December 1993.

Trip Generation for Mixed Use Developments, Technical Committee Report, Colorado-Wyoming Section, ITE, January 1986.

Trip Generation at Special Sites, VHTRC 84-R23, Charlottesville, VA: Virginia Transportation Research Council, January 1984.

A Trip Rate Interaction Model for Mixed Land Use Developments, Chang, G.L., Chen, C.H., and Carter, E.C. College Park, MD: University of Maryland Department of Civil Engineering, and Maryland State Highway Administration, Baltimore, MD, November 1992.

The Brandermill PUD Traffic Generation Study, Technical Report, Alexandria, VA: JHK & Associates, June 1984.

Travel Characteristics at Large-Scale Suburban Activity Centers, Hooper, K., National Cooperative Highway Research Program Report 323, Washington, DC: Transportation Research Board, National Academy of Sciences, 1990.

LOS Engineering, Inc.
Traffic and Transportation

5114 Sea Mist Ct, San Diego, CA 92121
Phone 619-890-1253, Fax 619-374-7247

February 5, 2008

Mr. Nael Areigat
County of San Diego DPW
5201 Ruffin Road, Suite D
San Diego, CA 92123-4310

RE: Campus Park (TM 5338) and Meadowood (TM 5354) – Internal Capture Rate

Dear Mr. Areigat:

Please find additional information supporting the SANDAG based 33% internal capture rate.

Comment #1: The letter should discuss how the proposed Campus Park and Meadowood projects plus the other two proposed eastern Fallbrook development projects (Campus Park West, Palomar College) compare to the sites surveyed/studied in the ITE internal capture rate documentation. The letter should compare/contrast the Fallbrook development projects to the ITE study sites as it relates to location, size, proximity to major freeways/highways, and land use composition. The letter should demonstrate that the ITE internal capture rates are applicable to the Fallbrook development projects.

Response #1: A comparison is shown between the sites documented in ITE and the combined project in **Table 1**:

Table 1: Composition Comparison of ITE Multi-Use Site to Proposed Project

Multi-Use Site	Location	Proximity to Freeway	Site Size (Acres)	Office (sf)	Commercial (sf)	Hotel (rooms)	Residential (Units)	Internal Capture Rate
Crocker Center	Florida	Unknown	26	209,000	87,000	256	0	41%
Mizner park	Florida	Unknown	30	88,000	163,000	0	136	40%
Galleria Area	Florida	Unknown	165	137,000	1,150,000	229	722	38%
Country Isles	Florida	Adjacent	61	59,000	193,000	0	368	33%
Village Commons	Florida	Unknown	72	293,000	231,000	0	317	28%
Boca Del Mar	Florida	Unknown	253	303,000	198,000	0	1,144	33%
Brandermill	Virginia	Adjacent	Unknown	77,000	87,000	0	2,300	51%
Minimum			*26*	*59,000*	*87,000*	*0*	*0*	*28%*
Average								***38%***
Maximum			*253*	*303,000*	*1,150,000*	*256*	*2,300*	*51%*
Meadowood	California	Adjacent	390	0	0	0	900	
Campus Park	California	Adjacent	165	157,000	72,000	0	1,096	
Campus Park West	California	Adjacent	92	300,000	230,000	0	395	
Palomar College	California	Adjacent	85	0	0	0	0	
Combined Fallboork projects (4 above)			*732*	*457,000*	*302,000*	*0*	*2,391*	Est. 33%

Source: ITE Trip Generation Handbook, March 2001 for data from Florida and Virginia.

As shown in Table 1, the combined project (Meadowood, Campus Park, Campus Park West, and Palomar College) matches well with Galleria Area, Boca Del Mar, and

Brandermill projects, because each of these multi-use communities have a relatively higher number of residential units and a larger amount of office/commercial. These three sites have internal capture rates of 38%, 33%, and 51%, respectively. Overall, the Meadowood, Campus Park, Campus Park West, and Palomar College projects fit well within the type and mix of the ITE surveyed locations that have an average internal capture rate of 38%.

Comment #2: The letter should further elaborate on why the proposed 33% internal capture rate would be reasonable for the Fallbrook development projects. The ITE internal capture rate ranges from 28% to 51%.

Response #2: Simple internal capture rates were calculated for two San Diego area communities: Fallbrook and Tierrasanta. These two communities were chosen due to: 1) a limited number of ingress/egress roadways serving the community, 2) a mix of retail, commercial, schools, and parks to support internal trips, and 3) direct access to I-15. No other communities were found to have a similar proximity to a freeway and some level of isolation such as the proposed project. For Fallbrook, counts were collected on 7 roadways creating a cordon as shown in **Attachment A**. For Tierrasanta, cordon counts were collected on 4 roadways. The actual Average Daily Trips (ADT) leaving and entering the community was taken as the sum of the cordon counts. The number of occupied households for each community was obtained from SANDAG. The cordon volumes and SANDAG data are included in **Attachment B**. The SANDAG rate of 10 daily trips per household was used to calculate the theoretical number of household ADT per community. The difference between the cordon and theoretical ADT provides a number of ADT staying within the community. The ratio of ADT staying in the community to the theoretical ADT provided the calculated internal capture rate as shown in **Table 2**:

Table 2: San Diego Area Internal Capture Rates (Fallbrook and Tierrasanta)

Study Area and Cordon Streets	ADT based on Ground Counts (1)	SANDAG 2007 Occupied Households (2)	ADT based on 10 ADT per Household (A)	Number of ADT staying in area (B)	Simplified Internal Capture Rate (B divided by A)
Fallbrook					
Old 395/Mission - West of I-15	24,359				
Old 395 - North of SR-76	7,174				
Sage Rd - North of SR-76	258				
Gird Rd - North of SR-76	3,190				
Via Monserate - North of SR-76 (3)	1,600				
Mission Rd - North of SR-76	20,352				
Olive Hill Rd - South of La Tara Ln	4,049				
Fallbrook Cordon	*60,982*	*14,366*	*143,660*	*82,678*	58%
Tierrasanta					
Santo Road - South of SR-52	15,658				
Clairemont Blvd - East of I-15	18,555				
Tierrasanta Blvd - East of I-15	20,937				
Aero Dr - East of I-15	13,846				
Tierrasanta Cordon	*68,996*	*10,989*	*109,890*	*40,894*	*37%*
			Average Simplified Internal Capture Rate		**47.4%**

Notes: (1) 24 hours collected on Wed 1/23/08. (2) SANDAG data by zip code for Tierrasanta and by census tracks for Fallbrook. (3) Via Monserate count failed, thus count was estimated at about half of Gird Road volume.

As shown in Table 2, this calculated internal capture rate for Fallbrook is 58% and 37% for Tierrasanta with an average of 47.4%. The 47% average is within the ITE range from 28% to 51%. The SANDAG internal capture rate of 33% is conservative when compared to local internal capture rates for communities that are adjacent to I-15.

Comment #3: It appears that the 33% internal capture rate is proposed for buildout of the Fallbrook development projects for the Year 2030 scenario. The letter should provide suggested internal capture rates for the following two scenarios:

Existing plus Project

Existing plus Project plus proposed/pending projects (near-term cumulative)

It is very unlikely that the internal capture rates for the two above scenarios would not be as high as what would be projected for buildout of the Fallbrook development projects for the Year 2030 scenario.

Response #3: The 33% internal capture rate is proposed for use at buildout.

Under existing plus project conditions, an internal capture rate will only be used when there is a mix of residential and commercial uses (i.e. if only residential is constructed initially, then no internal capture rate would be applied). The existing plus project internal capture rate will be based on a ratio of near-term residential to commercial uses vs. build-out residential to commercial uses. That is to say, if a project phase only had half of the commercial and all of the residential, then that phase would only incorporate an internal capture rate of about half of the buildout 33% internal capture rate.

Under existing plus project plus proposed/pending projects (near-term cumulative), the interim internal capture rate will be based on the ratio of near-term cumulative residential to commercial uses vs. build-out residential to commercial uses as described above.

Comment #4: The traffic consultant should coordinate with SANDAG staff to determine if other local multi-use developments have assumed/exhibited internal capture rates within the range proposed for the Fallbrook projects. In addition to County and Caltrans staff, SANDAG staff should provide input on the internal capture rate because the Fallbrook developments are large-scale Congestion Management Program (CMP) projects.

Response #4: SANDAG staff member Mr. Mike Calandra stated “As far as I am aware, there are no other comparable mixed-use developments in the County of San Diego that meet both internal land uses and external proximity to anything else. While there probably are comparable mixed-use developments, your Fallbrook project(s) are unique in that they are isolated: it is almost 20 miles north/south to Temecula and Escondido, and almost 10 miles east/west to Fallbrook\Oceanside and Pala\Pauma. You should not compare your project to a similar one in an urban or suburban

environment because those developments will have good accessibility literally in all directions across the street."

SANDAG staff has provided information on the latest CMP requirements to be used in the traffic study.

Comment #5: The letter should discuss how the SANDAG traffic model determines the exchange of trips to/from the Riverside County cordon zone and the Fallbrook/North County area. The letter should discuss if the project site's close proximity to the Riverside County cordon zone is affecting the internal capture rate result.

Response #5: SANDAG staff member Mr. Mike Calandra stated "Limeng provided you with a graphic earlier that shows the model assigning 9% of all project traffic to/from the Riverside cordon zone. The model distributes and assigns trips based on existing data and observations, including surveys of county-line crossers. The proximity of this project to nothing means that trips will match up and be assigned to zone-pairs that exceed the average trip length, but keep in mind that the average trip length frequencies are a bell curve and thus in theory have no upper limit."

Comment #6: The letter should attempt to quantify trip reductions and the ability of trips to remain internal within large multiuse developments with information regarding non-motorized internal traffic. The letter could discuss the following:

a. Projected Percentage of Walk Trips in Development (GIS buffered ¼-1/2 mile from homes to shops/offices/retail)
b. Projected Percentage of Bike trips in development (GIS buffered ½-2 miles from homes to shops/offices/retail).
c. Sidewalk access from homes to destinations.
d. Completeness of sidewalk network, accessibility of network from homes to commercial offices.
e. Bicycle network, accessibility, destination parking and ability to use lower speed streets, avoid high speed roads.
f. Other internal connections/paths within developments that are not counted/documented in a traditional TAZ.

A figure is included in **Attachment C** that includes ¼, ½, and 1 mile buffers around the shops, office, and retail areas for both Campus Park and Meadowood. Based on the aforementioned buffer areas, the number of households and percentage of total households are summarized in **Table 3**.

Table 3: Households within ¼, ½, and 1 mile of shops/office/retail uses

Development	With 1/4 Mile		With 1/2 Mile		With 1 Mile	
	Units	Percentage	Units	Percentage	Units	Percentage
Campus Park (households)	728	66%	978	89%	1096	100%
Meadowood (households)	316	37%	662	77%	858	100%
Totals	**1044**	**53%**	**1640**	**84%**	**1954**	**100%**

Source: RECON GIS Analysis

As shown in Table 3, a total of about 50% and 80% of the total households are within a walking distance (¼ to ½ mile) of the shops, offices, and retail uses. Furthermore, about 100% of the households are within biking distance of 1 mile. Please note that due to the location and elongated shape of the shops, offices and retails areas, the buffering does not account for the longer distance from a household on the southern end to a commercial point on the northern end. Rather, the buffering provides an average for distances to the commercial areas. Furthermore, a large portion of the multi-family is immediately adjacent to the town center – a concentrated element within the buffering rings. Another element difficult to quantify is the exact route (sidewalks or pathways) a pedestrian may take. Therefore, the calculated percentages are used in approximate terms (i.e. 53% is better expressed as approximately 50%) with emphasis that the mass of the households are within a close distance to the shops, offices, and retail uses.

Response #6a: The percentage of walk trips in the development is a function of distance, topography, work purpose, leisure purpose, convenience, desire for exercise, and other factors. As shown in Table 3, more than half of the households will be within walking distance to the shops, office, and retail uses. Thus, walk trips will include work, school, and leisure trips.

A review of on-line resources uncovered a survey documenting the mode of transportation to work in Fallbrook that showed 3% walked to work while 1% used a bicycle (survey summary included in **Attachment D**). However, this survey is only one part of the potential walk trips. The survey does not document the percentage of school and leisure trips. Therefore, applying specific survey results may not accurately relay the true potential of walk trips because so many households are located ¼ to ½ mile of shops, offices, and retail uses. What is most important here is that this community is configured to allow household members to ability to reach multiple amenities by simply walking.

Response #6b: The percentage of bike trips could potentially be very high with all of the households located with 1 mile of the shops, offices, and retail uses.

Response #6c: Either sidewalks or pathway will be provided from the residential areas to the shops, office, and retail areas.

Response #6d: In addition to sidewalks and pathways, the community will have trails to further provide a network for accessibility from homes to the shops, office, and retail

areas. Meadowood is proposed with approximately 4.2 miles of trails. Exhibits showing the proposed trails for Campus Park and Meadowood are shown in **Attachment E**.

Response #6e: Bicycle accessibility is possible for a majority of the community through multiple routes to the shops, office, and retail areas. Bicycle parking will be provided at commercial areas as required by code.

Response #6f: It is correct that traditional TAZs do not include details such as internal connections or paths within developments. If a traffic model was constructed with smaller TAZs and more centroid connectors representing additional connections/paths, the internal capture rate could be higher as the gravity model would have the potential to assign more trips to near-by zones. Thus, the SANDAG Series 11 traffic model with fewer TAZs and fewer centroid connectors may have underestimated the internal capture rate.

In summary, the SANDAG Series 11 internal capture rate of 33% is very reasonable if not under estimated given that:

1) ITE sources with similar land uses documented internal capture rates from 28% to 51% with an average of 38%,
2) Local internal capture rates have been calculated for Fallbrook at 58% and 37% for Tierrasanta,
3) SANDAG staff have indicated no other similar projects have been modeled that are unique in being isolated with a complementary mix of land uses, and
4) A GIS analysis documented about 50% of the households are within a walking distance of ¼ mile to the commercial uses while approximately 80% of the households are with ½ mile of the commercial uses, and 100% of the households are within 1 mile of the commercial uses – making this a walkable project.

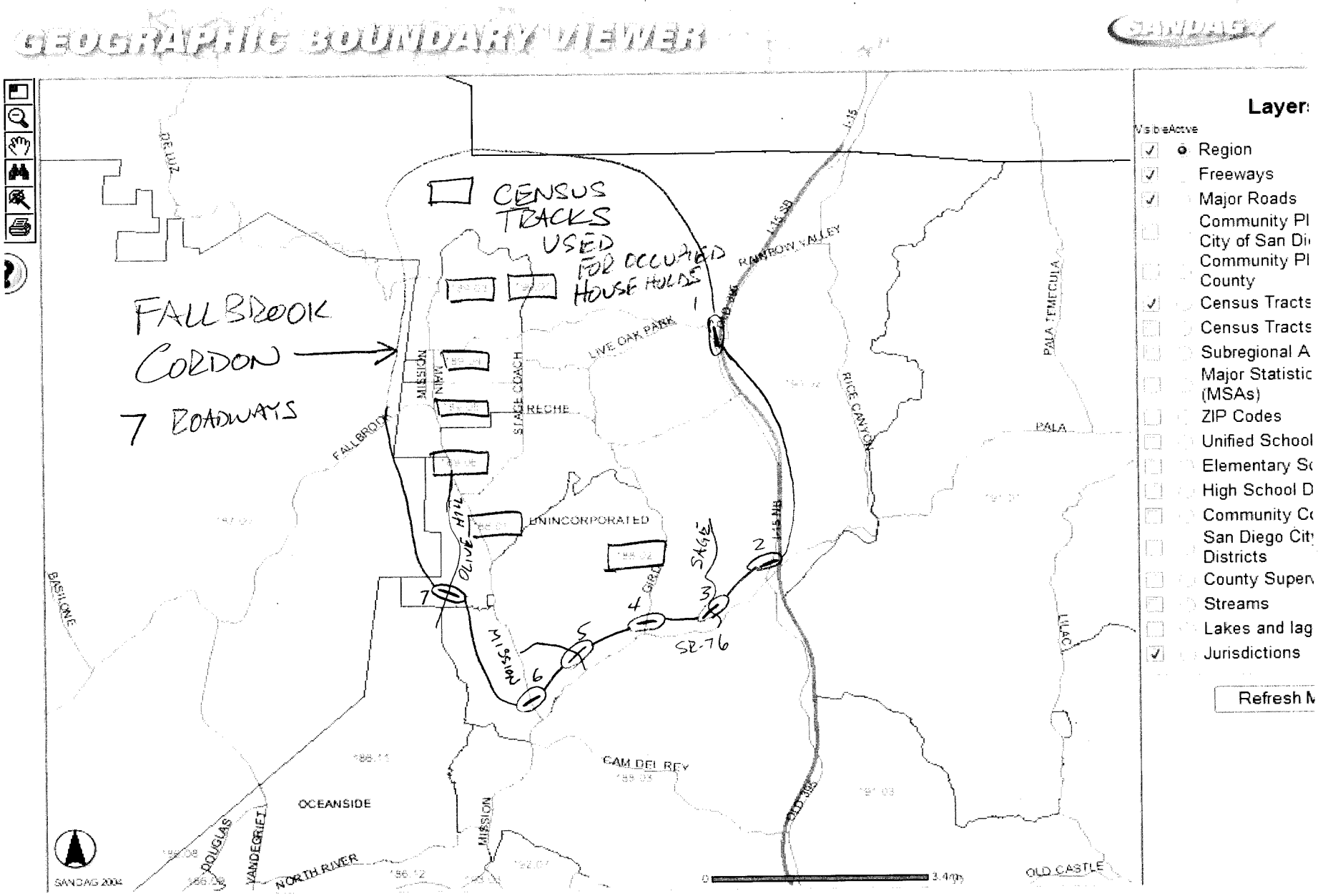
Please call me at (619) 890-1253 if you have any questions.

Sincerely,
LOS Engineering, Inc.

Justin Rasas, P.E.(60690), PTOE
Principal and Officer of LOS Engineering, Inc.

ATTACHMENT A

FALLBROOK CORDON MAP

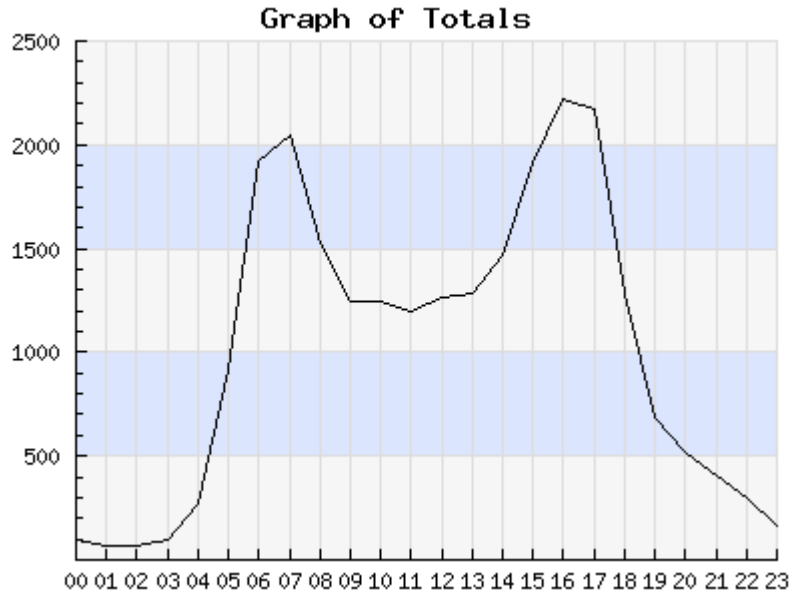

GEOGRAPHIC BOUNDARY VIEWER
SANDAG
CENSUS TRACKS USED FOR OCCUPIED HOUSE HOLDS
FALLBROOK CORDON
7 ROADWAYS
Layers
Visible Active
Region
Freeways
Major Roads
Census Tracts
Jurisdictions
Refresh M
FALLBROOK
MISSION
STAGE COACH
LIVE OAK PARK
RAINBOW VALLEY
PALA TEMECULA
PALA
RICE CANYON
UNINCORPORATED
OLIVE HILL
SAGE
SR-76
MISSION
CAMP PENDLETON
OCEANSIDE
CAMP DEL REY
BASILONE
DOUGLAS
VANDEGRIFT
NORTH RIVER
OLD CASTLE
SANDAG 2004

ATTACHMENT B

CORDON VOLUMES AND SANDAG OCCUPIED HOUSEHOLD DATA

Daily Vehicle Volume Report

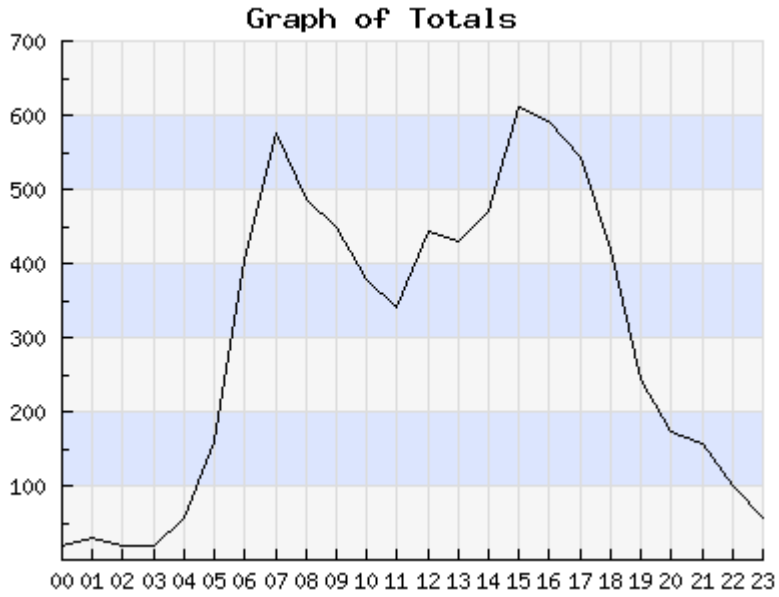
Location:
Old 395 between Mission Road and I-15 SB Ramps
File Number: 82401
Counter ID: AB201/AB202
Report Duration:
Wednesday Jan 23, 2008 - 00:00 to
Wednesday Jan 23, 2008 - 23:59
Other Notes:
None at this time.



Time	West Bound Volume	East Bound Volume	Total Volume
00:00 - 00:59	60	38	98
01:00 - 01:59	39	26	65
02:00 - 02:59	29	34	63
03:00 - 03:59	46	51	97
04:00 - 04:59	138	128	266
05:00 - 05:59	588	332	920
06:00 - 06:59	1215	705	1920
07:00 - 07:59	1177	866	2043
08:00 - 08:59	718	804	1522
09:00 - 09:59	555	694	1249
10:00 - 10:59	537	704	1241
11:00 - 11:59	522	678	1200
12:00 - 12:59	623	645	1268
13:00 - 13:59	657	626	1283
14:00 - 14:59	678	787	1465
15:00 - 15:59	882	1034	1916
16:00 - 16:59	910	1314	2224
17:00 - 17:59	770	1405	2175
18:00 - 18:59	568	715	1283
19:00 - 19:59	323	359	682
20:00 - 20:59	288	230	518
21:00 - 21:59	219	183	402
22:00 - 22:59	170	126	296
23:00 - 23:59	93	70	163
Total	**11805**	**12554**	**24359**
AM Peak	6:15	7:15	6:45
Hour	7:14	8:14	7:44
Volume	1265	934	2052
PM Peak	15:45	16:45	16:15
Hour	16:44	17:44	17:14
Volume	950	1435	2256

Daily Vehicle Volume Report

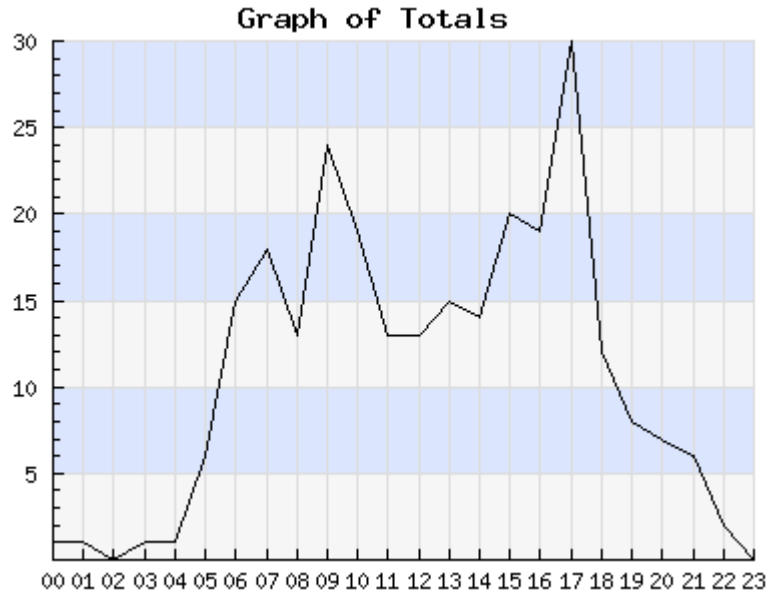
Location:
Old 395 just north of SR-76
File Number: 82402
Counter ID: AB208
Report Duration:
Wednesday Jan 23, 2008 - 00:00 to
Wednesday Jan 23, 2008 - 23:59
Other Notes:
None at this time.



Time	North Bound Volume	South Bound Volume	Total Volume
00:00 - 00:59	15	3	18
01:00 - 01:59	16	13	29
02:00 - 02:59	8	11	19
03:00 - 03:59	2	16	18
04:00 - 04:59	15	41	56
05:00 - 05:59	25	135	160
06:00 - 06:59	110	294	404
07:00 - 07:59	203	374	577
08:00 - 08:59	185	301	486
09:00 - 09:59	184	265	449
10:00 - 10:59	150	229	379
11:00 - 11:59	154	187	341
12:00 - 12:59	210	233	443
13:00 - 13:59	233	197	430
14:00 - 14:59	250	221	471
15:00 - 15:59	338	273	611
16:00 - 16:59	381	211	592
17:00 - 17:59	350	193	543
18:00 - 18:59	277	142	419
19:00 - 19:59	150	92	242
20:00 - 20:59	124	49	173
21:00 - 21:59	86	72	158
22:00 - 22:59	65	35	100
23:00 - 23:59	38	18	56
Total	**3569**	**3605**	**7174**
AM Peak	8:45	7:00	7:00
Hour	9:44	7:59	7:59
Volume	204	374	577
PM Peak	15:45	15:00	15:45
Hour	16:44	15:59	16:44
Volume	406	273	644

Daily Vehicle Volume Report

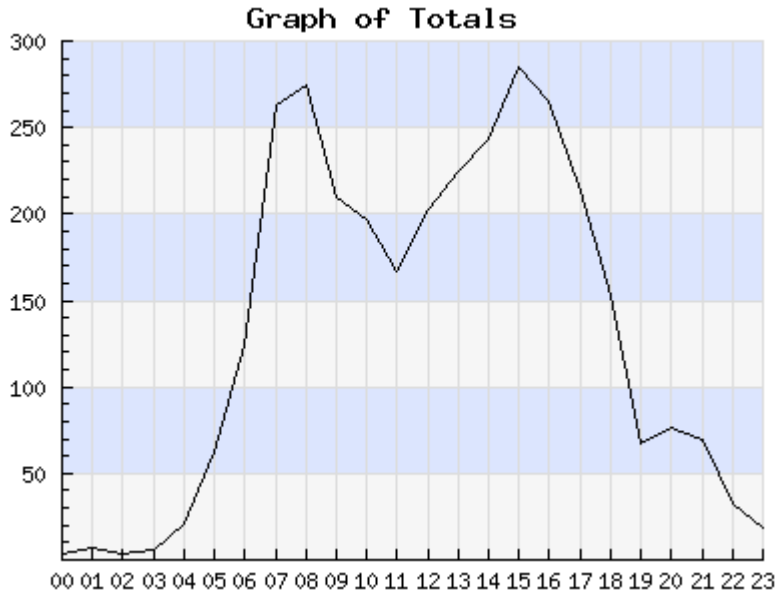
Location:
Sage Road just north of SR-76
File Number: 82403
Counter ID: SP101
Report Duration:
Wednesday Jan 23, 2008 - 00:00 to
Wednesday Jan 23, 2008 - 23:59
Other Notes:
None at this time.



Time	South Bound Volume	North Bound Volume	Total Volume
00:00 - 00:59	0	1	1
01:00 - 01:59	0	1	1
02:00 - 02:59	0	0	0
03:00 - 03:59	0	1	1
04:00 - 04:59	1	0	1
05:00 - 05:59	3	3	6
06:00 - 06:59	6	9	15
07:00 - 07:59	12	6	18
08:00 - 08:59	7	6	13
09:00 - 09:59	11	13	24
10:00 - 10:59	11	8	19
11:00 - 11:59	9	4	13
12:00 - 12:59	8	5	13
13:00 - 13:59	8	7	15
14:00 - 14:59	6	8	14
15:00 - 15:59	10	10	20
16:00 - 16:59	4	15	19
17:00 - 17:59	14	16	30
18:00 - 18:59	8	4	12
19:00 - 19:59	2	6	8
20:00 - 20:59	2	5	7
21:00 - 21:59	1	5	6
22:00 - 22:59	1	1	2
23:00 - 23:59	0	0	0
Total	**124**	**134**	**258**
AM Peak	6:45	9:15	9:15
Hour	7:44	10:14	10:14
Volume	14	16	26
PM Peak	17:00	15:30	17:00
Hour	17:59	16:29	17:59
Volume	14	18	30

Daily Vehicle Volume Report

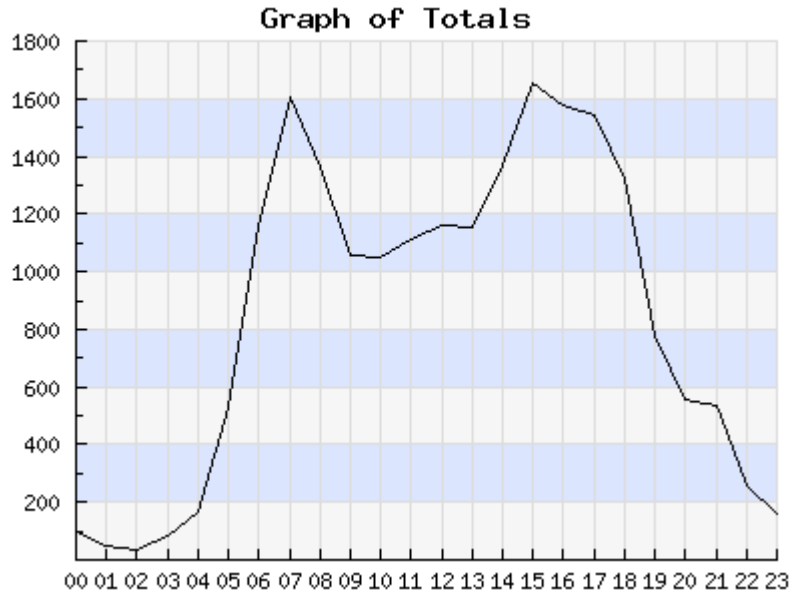
Location:
Gird Road just north of SR-76
File Number: 82404
Counter ID: AB209
Report Duration:
Wednesday Jan 23, 2008 - 00:00 to
Wednesday Jan 23, 2008 - 23:59
Other Notes:
None at this time.



Time	South Bound Volume	North Bound Volume	Total Volume
00:00 - 00:59	1	2	3
01:00 - 01:59	3	4	7
02:00 - 02:59	3	1	4
03:00 - 03:59	4	2	6
04:00 - 04:59	18	3	21
05:00 - 05:59	54	8	62
06:00 - 06:59	93	31	124
07:00 - 07:59	140	123	263
08:00 - 08:59	160	115	275
09:00 - 09:59	124	86	210
10:00 - 10:59	103	94	197
11:00 - 11:59	88	79	167
12:00 - 12:59	85	118	203
13:00 - 13:59	93	132	225
14:00 - 14:59	108	135	243
15:00 - 15:59	124	161	285
16:00 - 16:59	89	176	265
17:00 - 17:59	65	148	213
18:00 - 18:59	26	127	153
19:00 - 19:59	8	59	67
20:00 - 20:59	23	54	77
21:00 - 21:59	10	59	69
22:00 - 22:59	1	31	32
23:00 - 23:59	2	17	19
Total	**1425**	**1765**	**3190**
AM Peak	8:00	7:15	7:30
Hour	8:59	8:14	8:29
Volume	160	141	298
PM Peak	14:30	15:30	15:00
Hour	15:29	16:29	15:59
Volume	132	177	285

Daily Vehicle Volume Report

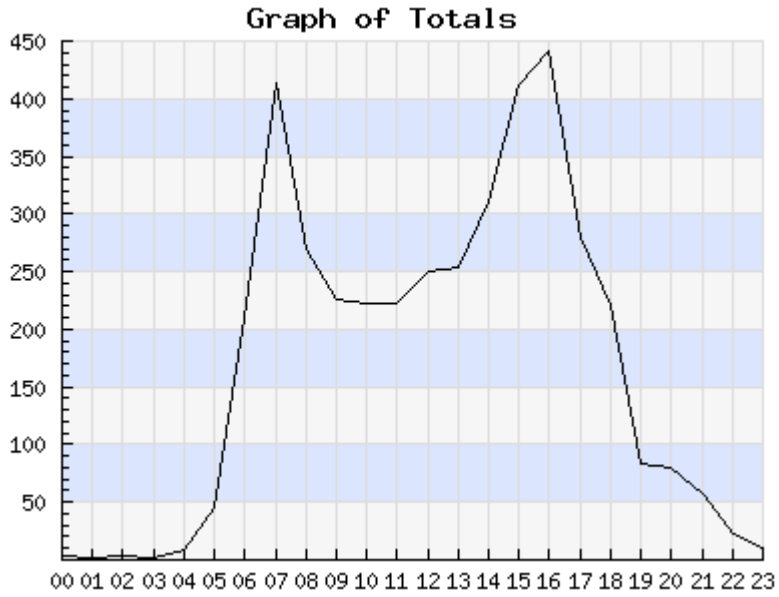
Location:
Mission Road just north of SR-76
File Number: 82405
Counter ID: AB210/AB211
Report Duration:
Wednesday Jan 23, 2008 - 00:00 to
Wednesday Jan 23, 2008 - 23:59
Other Notes:
None at this time.



Time	North Bound Volume	South Bound Volume	Total Volume
00:00 - 00:59	79	15	94
01:00 - 01:59	33	18	51
02:00 - 02:59	24	10	34
03:00 - 03:59	33	48	81
04:00 - 04:59	30	140	170
05:00 - 05:59	94	433	527
06:00 - 06:59	381	773	1154
07:00 - 07:59	737	865	1602
08:00 - 08:59	601	761	1362
09:00 - 09:59	501	554	1055
10:00 - 10:59	528	518	1046
11:00 - 11:59	585	524	1109
12:00 - 12:59	624	535	1159
13:00 - 13:59	678	475	1153
14:00 - 14:59	835	537	1372
15:00 - 15:59	995	661	1656
16:00 - 16:59	1001	575	1576
17:00 - 17:59	1002	540	1542
18:00 - 18:59	944	375	1319
19:00 - 19:59	509	272	781
20:00 - 20:59	363	193	556
21:00 - 21:59	371	167	538
22:00 - 22:59	189	65	254
23:00 - 23:59	129	32	161
Total	**11266**	**9086**	**20352**
AM Peak	6:45	6:45	6:45
Hour	7:44	7:44	7:44
Volume	754	870	1624
PM Peak	16:15	14:45	15:00
Hour	17:14	15:44	15:59
Volume	1053	661	1656

Daily Vehicle Volume Report

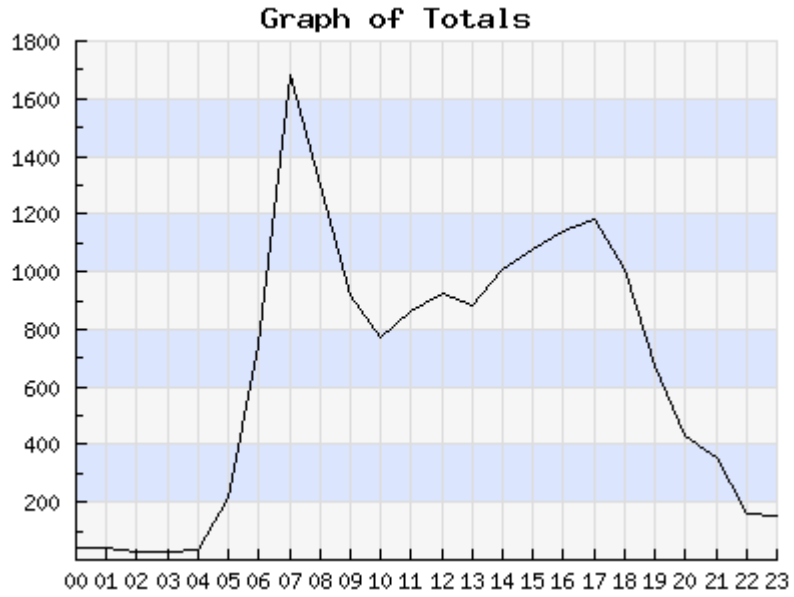
Location:
Olive Hill Rd just south of La Tara Lane
File Number: 82406
Counter ID: SP108
Report Duration:
Wednesday Jan 23, 2008 - 00:00 to
Wednesday Jan 23, 2008 - 23:59
Other Notes:
None at this time.



Time	North Bound Volume	South Bound Volume	Total Volume
00:00 - 00:59	1	2	3
01:00 - 01:59	1	0	1
02:00 - 02:59	2	2	4
03:00 - 03:59	0	2	2
04:00 - 04:59	4	4	8
05:00 - 05:59	26	19	45
06:00 - 06:59	74	136	210
07:00 - 07:59	206	207	413
08:00 - 08:59	127	143	270
09:00 - 09:59	108	118	226
10:00 - 10:59	124	99	223
11:00 - 11:59	126	96	222
12:00 - 12:59	130	120	250
13:00 - 13:59	138	116	254
14:00 - 14:59	158	153	311
15:00 - 15:59	202	209	411
16:00 - 16:59	267	175	442
17:00 - 17:59	150	130	280
18:00 - 18:59	124	97	221
19:00 - 19:59	36	47	83
20:00 - 20:59	25	55	80
21:00 - 21:59	23	35	58
22:00 - 22:59	9	13	22
23:00 - 23:59	3	7	10
Total	**2064**	**1985**	**4049**
AM Peak	7:00	6:45	6:45
Hour	7:59	7:44	7:44
Volume	206	235	432
PM Peak	16:00	15:00	16:00
Hour	16:59	15:59	16:59
Volume	267	209	442

Daily Vehicle Volume Report

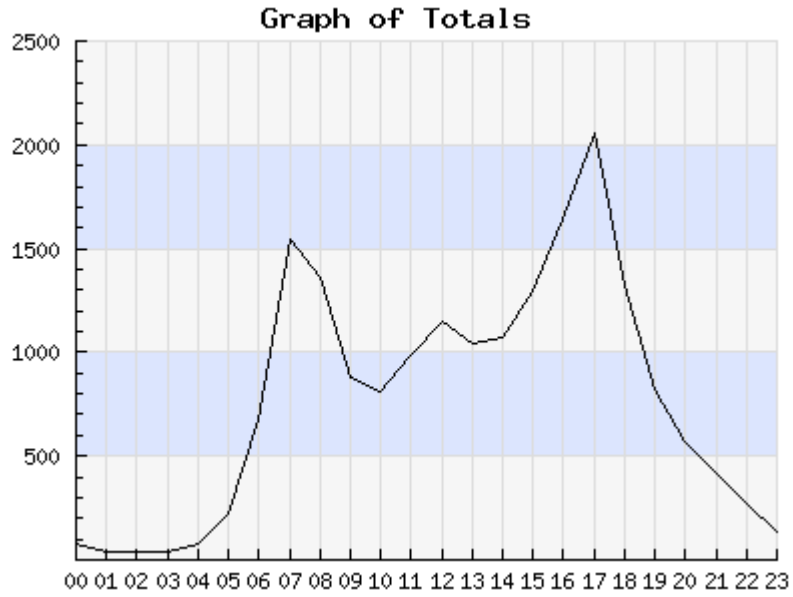
Location:
Santo Road between SR-52 and Portobelo Dr
File Number: 82501
Counter ID: SP106/SP107
Report Duration:
Wednesday Jan 23, 2008 - 00:00 to
Wednesday Jan 23, 2008 - 23:59
Other Notes:
None at this time.



Time	North Bound Volume	South Bound Volume	Total Volume
00:00 - 00:59	15	28	43
01:00 - 01:59	14	28	42
02:00 - 02:59	8	20	28
03:00 - 03:59	12	13	25
04:00 - 04:59	28	10	38
05:00 - 05:59	172	40	212
06:00 - 06:59	548	198	746
07:00 - 07:59	1183	496	1679
08:00 - 08:59	839	463	1302
09:00 - 09:59	557	360	917
10:00 - 10:59	432	341	773
11:00 - 11:59	418	441	859
12:00 - 12:59	464	460	924
13:00 - 13:59	440	441	881
14:00 - 14:59	481	524	1005
15:00 - 15:59	508	572	1080
16:00 - 16:59	589	551	1140
17:00 - 17:59	674	507	1181
18:00 - 18:59	433	573	1006
19:00 - 19:59	270	404	674
20:00 - 20:59	172	261	433
21:00 - 21:59	148	209	357
22:00 - 22:59	59	103	162
23:00 - 23:59	54	97	151
Total	**8518**	**7140**	**15658**
AM Peak	7:00	7:15	7:15
Hour	7:59	8:14	8:14
Volume	1183	538	1707
PM Peak	16:45	17:45	16:45
Hour	17:44	18:44	17:44
Volume	688	583	1194

Daily Vehicle Volume Report

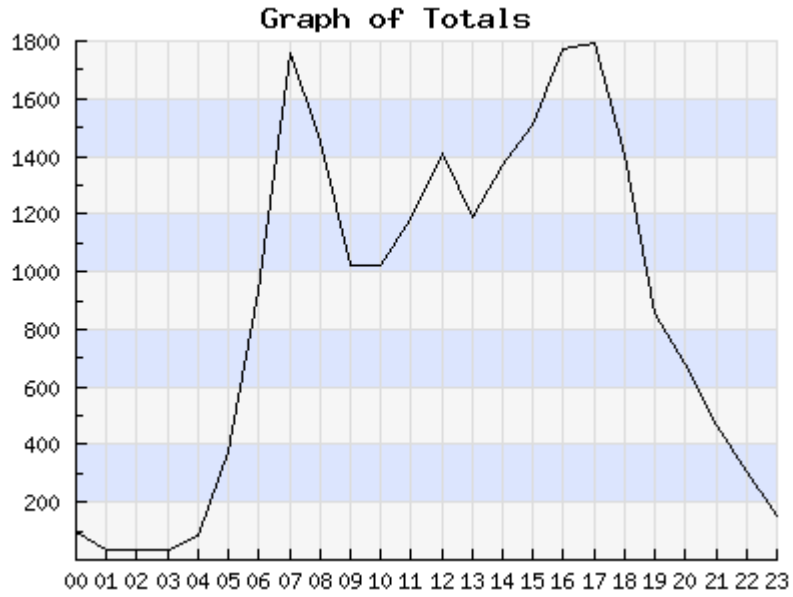
Location:
Clairemont Blvd just east of I-15
File Number: 82502
Counter ID: SP104
Report Duration:
Wednesday Jan 23, 2008 - 00:00 to
Wednesday Jan 23, 2008 - 23:59
Other Notes:
None at this time.



Time	East Bound Volume	West Bound Volume	Total Volume
00:00 - 00:59	53	26	79
01:00 - 01:59	26	13	39
02:00 - 02:59	23	15	38
03:00 - 03:59	16	19	35
04:00 - 04:59	18	61	79
05:00 - 05:59	42	183	225
06:00 - 06:59	175	496	671
07:00 - 07:59	451	1093	1544
08:00 - 08:59	387	977	1364
09:00 - 09:59	341	542	883
10:00 - 10:59	354	460	814
11:00 - 11:59	461	519	980
12:00 - 12:59	579	573	1152
13:00 - 13:59	516	530	1046
14:00 - 14:59	563	511	1074
15:00 - 15:59	793	497	1290
16:00 - 16:59	1167	475	1642
17:00 - 17:59	1556	503	2059
18:00 - 18:59	884	435	1319
19:00 - 19:59	558	265	823
20:00 - 20:59	390	184	574
21:00 - 21:59	270	149	419
22:00 - 22:59	180	91	271
23:00 - 23:59	93	42	135
Total	**9896**	**8659**	**18555**
AM Peak	11:00	7:30	7:15
Hour	11:59	8:29	8:14
Volume	461	1152	1599
PM Peak	17:00	12:30	17:00
Hour	17:59	13:29	17:59
Volume	1556	612	2059

Daily Vehicle Volume Report

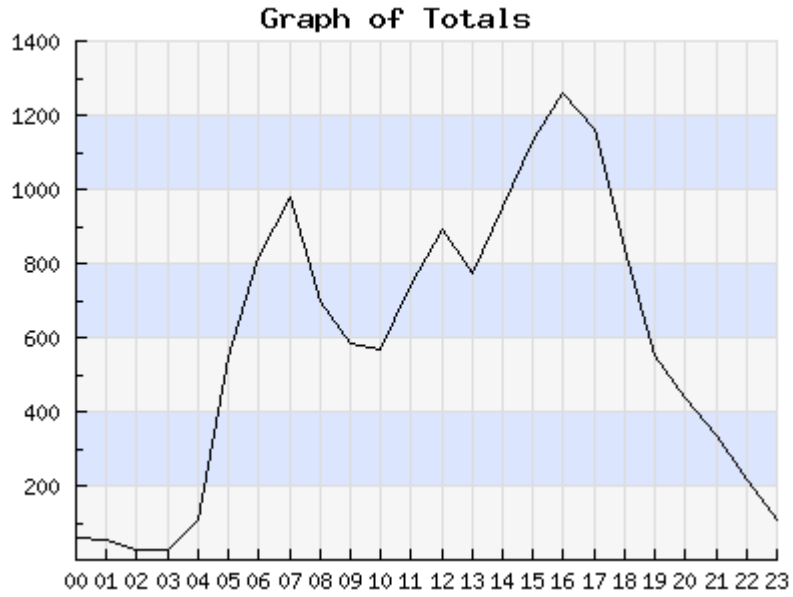
Location:
Tierrasanta Blvd just east of I-15
File Number: 82503
Counter ID: SP105
Report Duration:
Wednesday Jan 23, 2008 - 00:00 to
Wednesday Jan 23, 2008 - 23:59
Other Notes:
None at this time.



Time	East Bound Volume	West Bound Volume	Total Volume
00:00 - 00:59	66	31	97
01:00 - 01:59	22	13	35
02:00 - 02:59	18	14	32
03:00 - 03:59	15	23	38
04:00 - 04:59	24	61	85
05:00 - 05:59	63	314	377
06:00 - 06:59	253	675	928
07:00 - 07:59	481	1274	1755
08:00 - 08:59	421	1032	1453
09:00 - 09:59	399	620	1019
10:00 - 10:59	485	537	1022
11:00 - 11:59	598	583	1181
12:00 - 12:59	726	686	1412
13:00 - 13:59	595	595	1190
14:00 - 14:59	748	624	1372
15:00 - 15:59	877	633	1510
16:00 - 16:59	1131	644	1775
17:00 - 17:59	1171	623	1794
18:00 - 18:59	836	567	1403
19:00 - 19:59	558	298	856
20:00 - 20:59	437	241	678
21:00 - 21:59	295	172	467
22:00 - 22:59	186	118	304
23:00 - 23:59	100	54	154
Total	**10505**	**10432**	**20937**
AM Peak	11:00	7:00	7:00
Hour	11:59	7:59	7:59
Volume	598	1274	1755
PM Peak	16:30	12:15	16:30
Hour	17:29	13:14	17:29
Volume	1227	717	1917

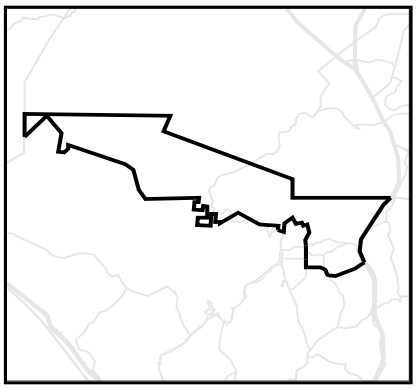
Daily Vehicle Volume Report

Location:
Aero Dr just east of I-15
File Number: 82504
Counter ID: SP111/SP112
Report Duration:
Wednesday Jan 23, 2008 - 00:00 to
Wednesday Jan 23, 2008 - 23:59
Other Notes:
None at this time.



Time	West Bound Volume	East Bound Volume	Total Volume
00:00 - 00:59	13	44	57
01:00 - 01:59	14	39	53
02:00 - 02:59	9	17	26
03:00 - 03:59	18	7	25
04:00 - 04:59	90	16	106
05:00 - 05:59	486	61	547
06:00 - 06:59	604	210	814
07:00 - 07:59	588	388	976
08:00 - 08:59	353	345	698
09:00 - 09:59	281	302	583
10:00 - 10:59	292	276	568
11:00 - 11:59	341	398	739
12:00 - 12:59	403	488	891
13:00 - 13:59	294	481	775
14:00 - 14:59	429	520	949
15:00 - 15:59	433	698	1131
16:00 - 16:59	472	785	1257
17:00 - 17:59	518	644	1162
18:00 - 18:59	339	501	840
19:00 - 19:59	199	352	551
20:00 - 20:59	168	270	438
21:00 - 21:59	107	226	333
22:00 - 22:59	91	126	217
23:00 - 23:59	39	71	110
Total	**6581**	**7265**	**13846**
AM Peak	6:15	11:00	7:00
Hour	7:14	11:59	7:59
Volume	617	398	976
PM Peak	16:45	15:30	15:45
Hour	17:44	16:29	16:44
Volume	518	801	1278

POPULATION AND HOUSING ESTIMATES
Census Tract 190.01



POPULATION AND HOUSING (2000 and 2007)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change Numeric	Percent
Total Population	**5,235**	**5,672**	**437**	**8.3%**
Household Population	5,215	5,642	427	8.2%
Group Quarters Population	20	30	10	50.0%
Total Housing Units	**2,060**	**2,257**	**197**	**9.6%**
Single Family - Detached	--	1,939	--	--
Single Family - Multiple-Unit	--	19	--	--
Multi-Family	--	194	--	--
Mobile Home and Other	--	105	--	--
Occupied Housing Units	**1,931**	**2,107**	**176**	**9.1%**
Single Family - Detached	--	1,856	--	--
Single Family - Multiple-Unit	--	16	--	--
Multi-Family	--	139	--	--
Mobile Home and Other	--	96	--	--
Vacancy Rate	**6.3%**	**6.6%**	**0.3%**	**4.8%**
Persons per Household	**2.70**	**2.68**	**-0.02**	**-0.7%**

NOTE: Starting in 2007, SANDAG will begin tracking housing structure type based on new definitions. Data for the new structure types are not comparable with information from the 2000 Census or SANDAG's Forecast. New definitions are described on page 3.

HOUSEHOLD INCOME (real 1999 dollars, adjusted for inflation)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change Numeric	Percent
Households by Income Category				
Less than $15,000	121	104	-17	-14.0%
$15,000-$29,999	261	243	-18	-6.9%
$30,000-$44,999	299	304	5	1.7%
$45,000-$59,999	305	303	-2	-0.7%
$60,000-$74,999	263	265	2	0.8%
$75,000-$99,999	228	333	105	46.1%
$100,000-$124,999	168	221	53	31.5%
$125,000-$149,999	115	136	21	18.3%
$150,000-$199,999	65	129	64	98.5%
$200,000 or more	106	69	-37	-34.9%
Total Households	**1,931**	**2,107**	**176**	**9.1%**
Median Household Income				
Adjusted for inflation (1999 $)	$58,992	$65,632	6,640	11.3%
Not adjusted for inflation (current $)	$58,992	$86,636	27,644	46.9%

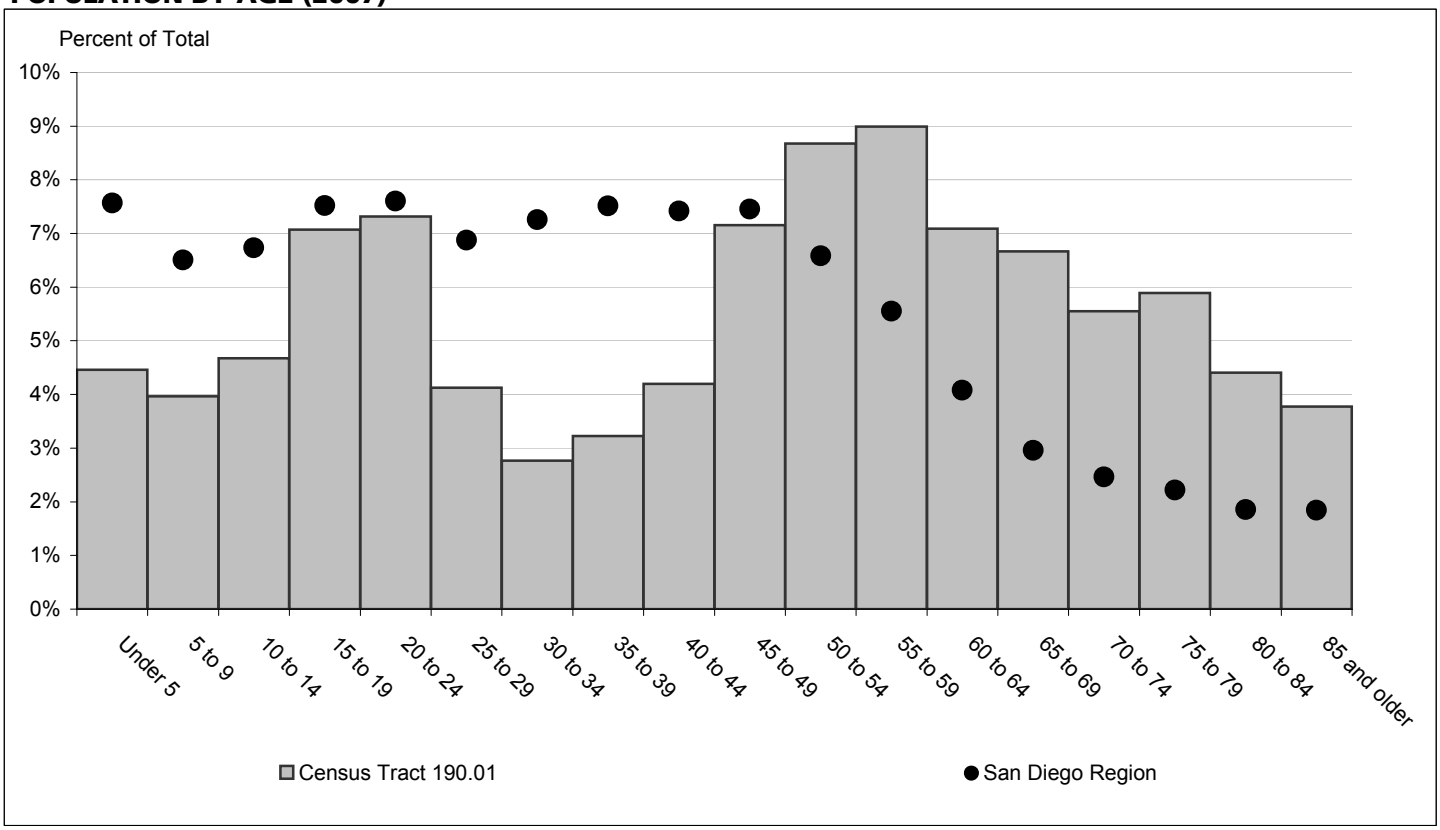
ADVISORY:

Caution should be taken when using data for small population groups, particularly at small levels of geography. Some 2000 Census data may not match information published by the U.S. Census Bureau for the following reasons: sample census data have been controlled to match 100 percent count (Summary File 1) data; and some minor adjustments were made (such as correcting the location of housing units that were erroneously allocated by the Census Bureau to roads and open space) to more accurately reflect the region's true population and housing distribution.

POPULATION BY GENDER AND AGE (2007)

	Total	Male	Female	Percent Female
Total Population	**5,672**	**2,834**	**2,838**	**50%**
Under 5	253	122	131	52%
5 to 9	225	103	122	54%
10 to 14	265	146	119	45%
15 to 17	246	128	118	48%
18 and 19	155	84	71	46%
20 to 24	415	208	207	50%
25 to 29	234	123	111	47%
30 to 34	157	80	77	49%
35 to 39	183	92	91	50%
40 to 44	238	111	127	53%
45 to 49	406	186	220	54%
50 to 54	492	257	235	48%
55 to 59	510	244	266	52%
60 and 61	159	67	92	58%
62 to 64	243	119	124	51%
65 to 69	378	185	193	51%
70 to 74	315	168	147	47%
75 to 79	334	175	159	48%
80 to 84	250	130	120	48%
85 and older	214	106	108	50%
Under 18	989	499	490	50%
65 and older	1,491	764	727	49%
Median age	50.6	50.7	50.5	-

POPULATION BY AGE (2007)



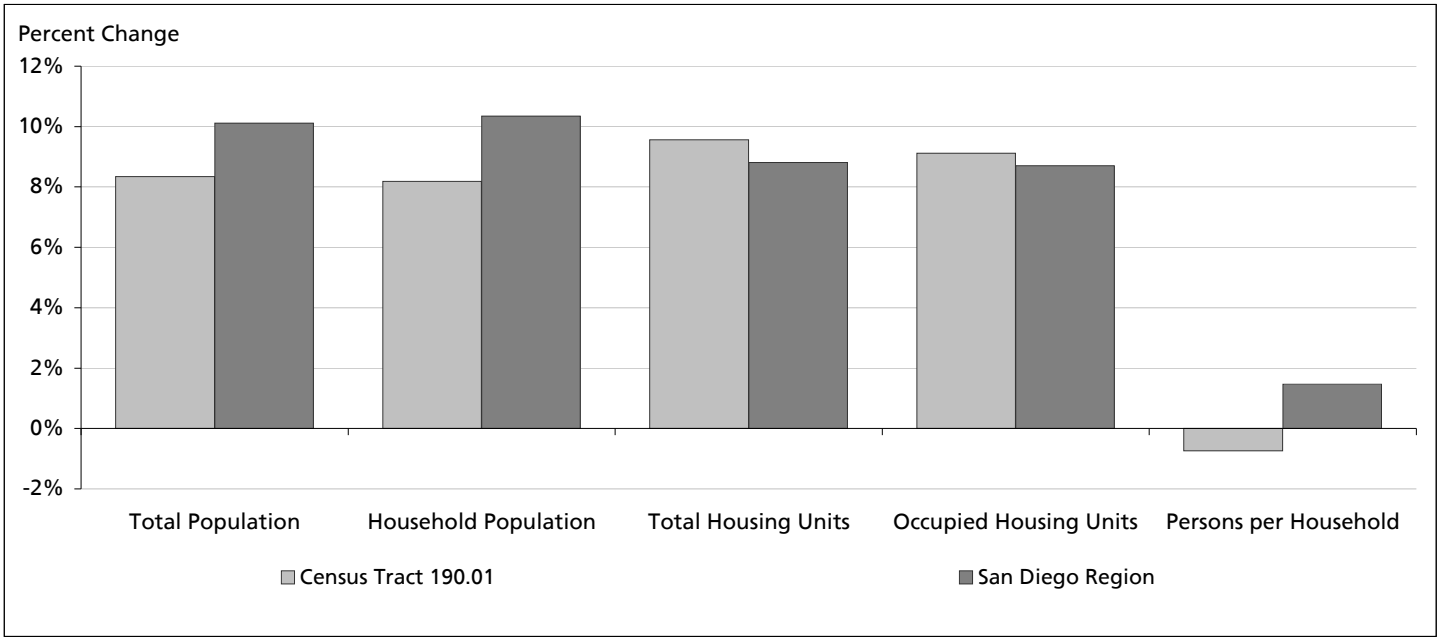
Source: SANDAG, Current Estimates (2007)
SANDAG
www.sandag.org

October 2007
Census Tract 190.01 Estimates
Page 2 of 3

POPULATION BY RACE, ETHNICITY AND AGE (2007)

		Non-Hispanic				
	Hispanic	White	Black	American Indian	Asian & Pacific Isl.	Other
Total Population	**1,141**	**4,279**	**7**	**14**	**101**	**130**
Under 5	102	140	0	1	4	6
5 to 9	60	158	0	0	2	5
10 to 14	97	157	0	0	6	5
15 to 17	62	179	1	0	1	3
18 and 19	34	116	0	0	2	3
20 to 24	99	305	2	0	3	6
25 to 29	77	147	0	0	3	7
30 to 34	62	84	0	1	2	8
35 to 39	80	97	0	1	1	4
40 to 44	60	173	1	0	1	3
45 to 49	75	307	1	0	13	10
50 to 54	90	385	0	0	5	12
55 to 59	72	417	0	0	14	7
60 and 61	23	128	0	1	3	4
62 to 64	35	191	0	1	8	8
65 to 69	27	334	0	2	8	7
70 to 74	10	291	0	1	5	8
75 to 79	29	289	1	2	8	5
80 to 84	17	218	0	4	5	6
85 and older	30	163	1	0	7	13
Under 18	321	634	1	1	13	19
65 and older	113	1,295	2	9	33	39
Median age	33.2	53.6	42.5	70.0	57.7	52.1

POPULATION AND HOUSING CHARACTERISTICS (CHANGE 2000 - 2007)



New Housing Structure Type Definitions in 2007:

Single Family - Detached: Traditional detached single family housing units.

Single Family - Multiple Unit: Includes single family attached housing units, duplexes, townhouses, and lower density condominium developments (generally less than 12 units per acre)

Multi-Family: Apartments and higher density condominium developments (generally more than 12 units per acre)

Mobile Home and Other: Mobile homes in mobile home parks, boats, and other housing not elsewhere classified.

Source: SANDAG, Current Estimates (2007)
SANDAG
www.sandag.org

October 2007
Census Tract 190.01 Estimates
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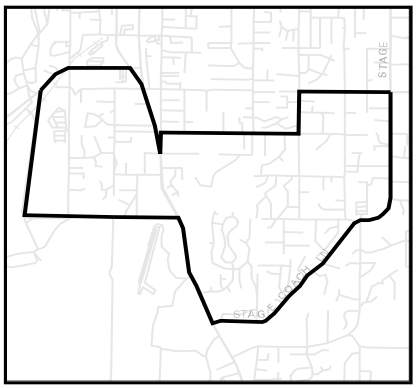
POPULATION AND HOUSING ESTIMATES
Census Tract 189.06



POPULATION AND HOUSING (2000 and 2007)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change Numeric	Percent
Total Population	**5,759**	**6,658**	**899**	**15.6%**
Household Population	5,728	6,617	889	15.5%
Group Quarters Population	31	41	10	32.3%
Total Housing Units	**1,839**	**2,151**	**312**	**17.0%**
Single Family - Detached	--	1,043	--	--
Single Family - Multiple-Unit	--	33	--	--
Multi-Family	--	802	--	--
Mobile Home and Other	--	273	--	--
Occupied Housing Units	**1,791**	**2,054**	**263**	**14.7%**
Single Family - Detached	--	1,011	--	--
Single Family - Multiple-Unit	--	30	--	--
Multi-Family	--	745	--	--
Mobile Home and Other	--	268	--	--
Vacancy Rate	**2.6%**	**4.5%**	**1.9%**	**73.1%**
Persons per Household	**3.20**	**3.22**	**0.02**	**0.6%**

NOTE: Starting in 2007, SANDAG will begin tracking housing structure type based on new definitions. Data for the new structure types are not comparable with information from the 2000 Census or SANDAG's Forecast. New definitions are described on page 3.

HOUSEHOLD INCOME (real 1999 dollars, adjusted for inflation)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change Numeric	Percent
Households by Income Category				
Less than $15,000	201	227	26	12.9%
$15,000-$29,999	512	472	-40	-7.8%
$30,000-$44,999	394	444	50	12.7%
$45,000-$59,999	232	328	96	41.4%
$60,000-$74,999	173	220	47	27.2%
$75,000-$99,999	125	200	75	60.0%
$100,000-$124,999	85	90	5	5.9%
$125,000-$149,999	36	40	4	11.1%
$150,000-$199,999	19	26	7	36.8%
$200,000 or more	14	7	-7	-50.0%
Total Households	**1,791**	**2,054**	**263**	**14.7%**
Median Household Income				
Adjusted for inflation (1999 $)	$36,948	$41,081	4,133	11.2%
Not adjusted for inflation (current $)	$36,948	$54,228	17,280	46.8%

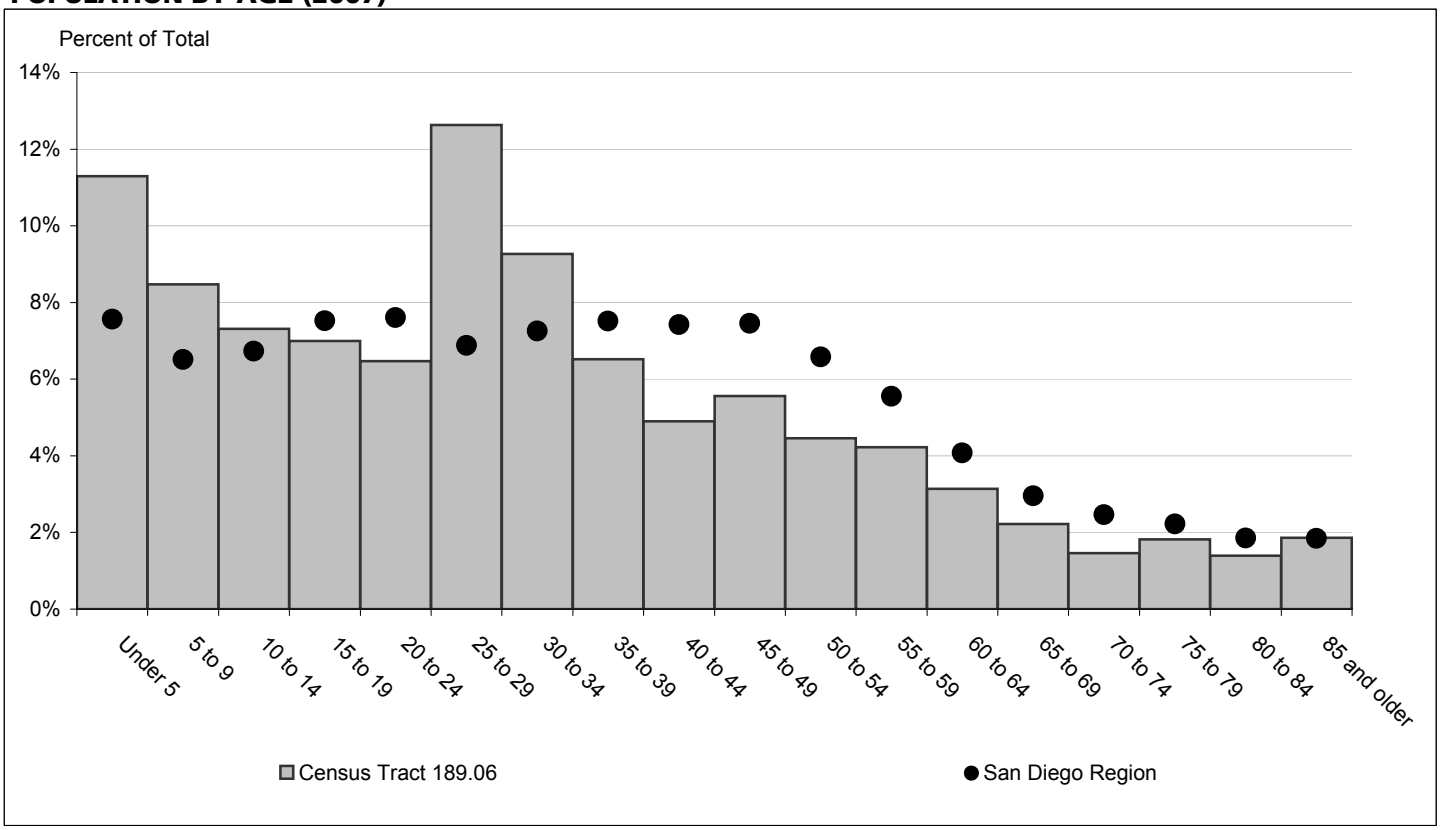
ADVISORY:

Caution should be taken when using data for small population groups, particularly at small levels of geography. Some 2000 Census data may not match information published by the U.S. Census Bureau for the following reasons: sample census data have been controlled to match 100 percent count (Summary File 1) data; and some minor adjustments were made (such as correcting the location of housing units that were erroneously allocated by the Census Bureau to roads and open space) to more accurately reflect the region's true population and housing distribution.

POPULATION BY GENDER AND AGE (2007)

	Total	Male	Female	Percent Female
Total Population	**6,658**	**3,458**	**3,200**	**48%**
Under 5	752	366	386	51%
5 to 9	564	294	270	48%
10 to 14	487	280	207	43%
15 to 17	292	142	150	51%
18 and 19	174	90	84	48%
20 to 24	431	228	203	47%
25 to 29	841	472	369	44%
30 to 34	617	345	272	44%
35 to 39	434	228	206	47%
40 to 44	326	194	132	40%
45 to 49	370	192	178	48%
50 to 54	297	132	165	56%
55 to 59	281	142	139	49%
60 and 61	93	40	53	57%
62 to 64	116	51	65	56%
65 to 69	148	71	77	52%
70 to 74	97	51	46	47%
75 to 79	121	60	61	50%
80 to 84	93	31	62	67%
85 and older	124	49	75	60%
Under 18	2,095	1,082	1,013	48%
65 and older	583	262	321	55%
Median age	28.7	28.5	29.1	-

POPULATION BY AGE (2007)



Source: SANDAG, Current Estimates (2007)
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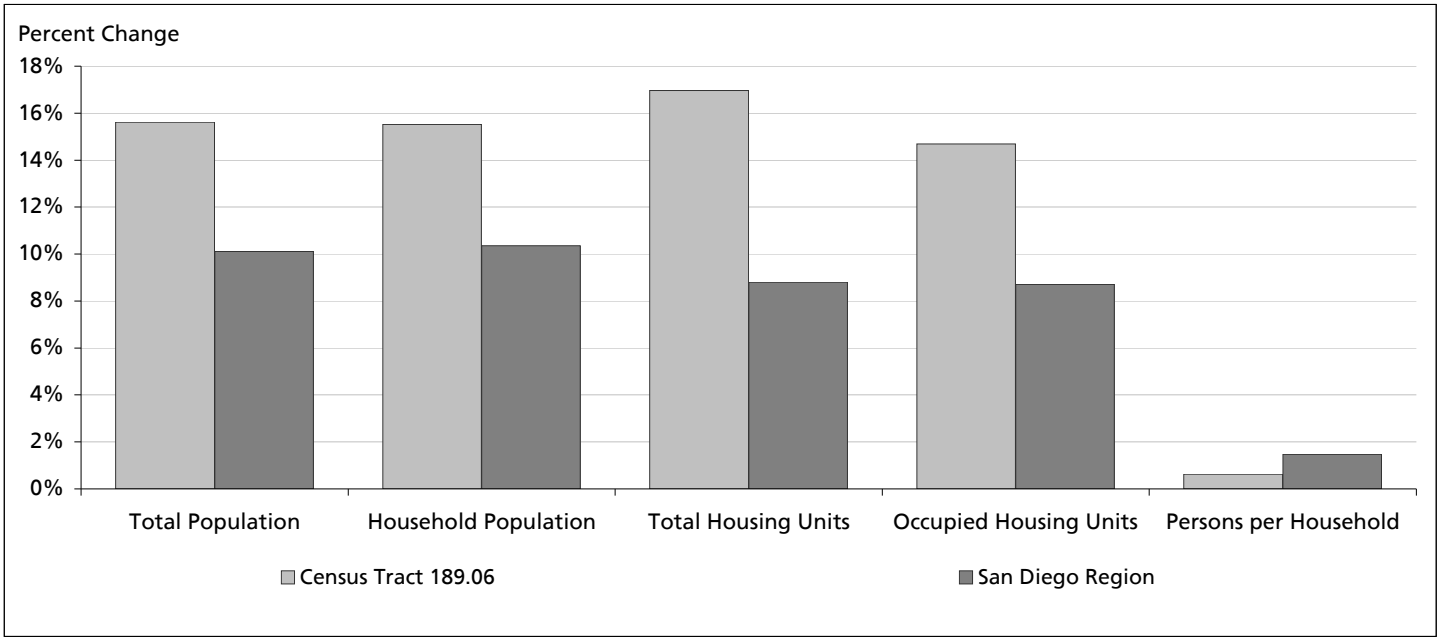
POPULATION BY RACE, ETHNICITY AND AGE (2007)

		Non-Hispanic				
	Hispanic	White	Black	American Indian	Asian & Pacific Isl.	Other
Total Population	**3,637**	**2,569**	**177**	**33**	**124**	**118**
Under 5	484	236	12	0	14	6
5 to 9	356	172	24	1	4	7
10 to 14	345	118	9	1	9	5
15 to 17	206	79	3	0	1	3
18 and 19	117	48	2	0	1	6
20 to 24	269	138	6	0	3	15
25 to 29	481	313	26	2	14	5
30 to 34	375	213	20	3	5	1
35 to 39	295	119	12	4	4	0
40 to 44	198	105	7	5	6	5
45 to 49	173	170	14	1	3	9
50 to 54	111	165	5	4	9	3
55 to 59	82	169	11	0	10	9
60 and 61	25	58	2	2	2	4
62 to 64	16	79	3	2	8	8
65 to 69	28	101	6	4	4	5
70 to 74	12	69	5	0	5	6
75 to 79	26	68	4	2	12	9
80 to 84	17	66	3	1	2	4
85 and older	21	83	3	1	8	8
Under 18	1,391	605	48	2	28	21
65 and older	104	387	21	8	31	32
Median age	25.4	34.2	31.6	47.5	46.7	48.3

POPULATION AND HOUSING CHARACTERISTICS (CHANGE 2000 - 2007)



New Housing Structure Type Definitions in 2007:

Single Family - Detached: Traditional detached single family housing units.

Single Family - Multiple Unit: Includes single family attached housing units, duplexes, townhouses, and lower density condominium developments (generally less than 12 units per acre)

Multi-Family: Apartments and higher density condominium developments (generally more than 12 units per acre)

Mobile Home and Other: Mobile homes in mobile home parks, boats, and other housing not elsewhere classified.

Source: SANDAG, Current Estimates (2007)
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POPULATION AND HOUSING ESTIMATES
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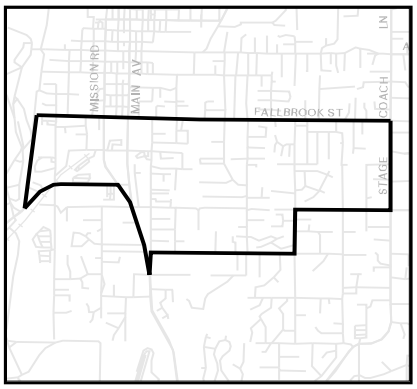

POPULATION AND HOUSING (2000 and 2007)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change Numeric	Percent
Total Population	**6,425**	**6,975**	**550**	**8.6%**
Household Population	6,414	6,919	505	7.9%
Group Quarters Population	11	56	45	409.1%
Total Housing Units	**1,895**	**2,064**	**169**	**8.9%**
Single Family - Detached	--	1,053	--	--
Single Family - Multiple-Unit	--	124	--	--
Multi-Family	--	810	--	--
Mobile Home and Other	--	77	--	--
Occupied Housing Units	**1,864**	**2,014**	**150**	**8.0%**
Single Family - Detached	--	1,046	--	--
Single Family - Multiple-Unit	--	124	--	--
Multi-Family	--	771	--	--
Mobile Home and Other	--	73	--	--
Vacancy Rate	**1.6%**	**2.4%**	**0.8%**	**50.0%**
Persons per Household	**3.44**	**3.44**	**0.00**	**0.0%**

NOTE: Starting in 2007, SANDAG will begin tracking housing structure type based on new definitions. Data for the new structure types are not comparable with information from the 2000 Census or SANDAG's Forecast. New definitions are described on page 3.

HOUSEHOLD INCOME (real 1999 dollars, adjusted for inflation)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change Numeric	Percent
Households by Income Category				
Less than $15,000	273	229	-44	-16.1%
$15,000-$29,999	462	451	-11	-2.4%
$30,000-$44,999	405	427	22	5.4%
$45,000-$59,999	288	321	33	11.5%
$60,000-$74,999	167	216	49	29.3%
$75,000-$99,999	140	203	63	45.0%
$100,000-$124,999	47	93	46	97.9%
$125,000-$149,999	32	41	9	28.1%
$150,000-$199,999	29	26	-3	-10.3%
$200,000 or more	21	7	-14	-66.7%
Total Households	**1,864**	**2,014**	**150**	**8.0%**
Median Household Income				
Adjusted for inflation (1999 $)	$37,296	$41,487	4,191	11.2%
Not adjusted for inflation (current $)	$37,296	$54,764	17,468	46.8%

ADVISORY:

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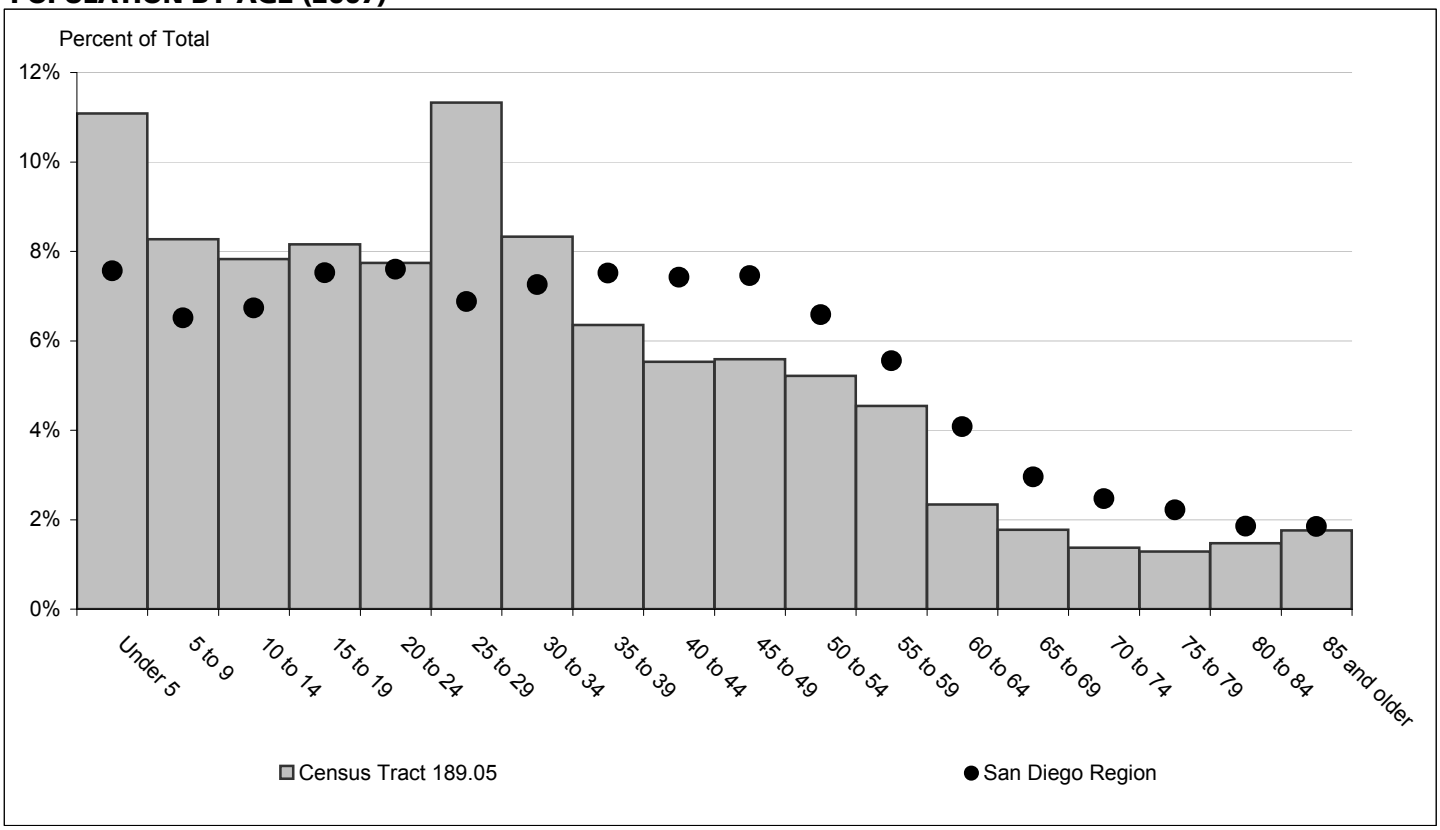
POPULATION BY GENDER AND AGE (2007)

	Total	Male	Female	Percent Female
Total Population	**6,975**	**3,566**	**3,409**	**49%**
Under 5	773	372	401	52%
5 to 9	577	289	288	50%
10 to 14	546	288	258	47%
15 to 17	339	161	178	53%
18 and 19	230	113	117	51%
20 to 24	540	284	256	47%
25 to 29	790	430	360	46%
30 to 34	581	329	252	43%
35 to 39	443	243	200	45%
40 to 44	386	224	162	42%
45 to 49	390	186	204	52%
50 to 54	364	171	193	53%
55 to 59	317	157	160	50%
60 and 61	76	45	31	41%
62 to 64	87	47	40	46%
65 to 69	124	66	58	47%
70 to 74	96	38	58	60%
75 to 79	90	33	57	63%
80 to 84	103	35	68	66%
85 and older	123	55	68	55%
Under 18	2,235	1,110	1,125	50%
65 and older	536	227	309	58%
Median age	28.1	28.2	27.9	-

POPULATION BY AGE (2007)



Source: SANDAG, Current Estimates (2007)
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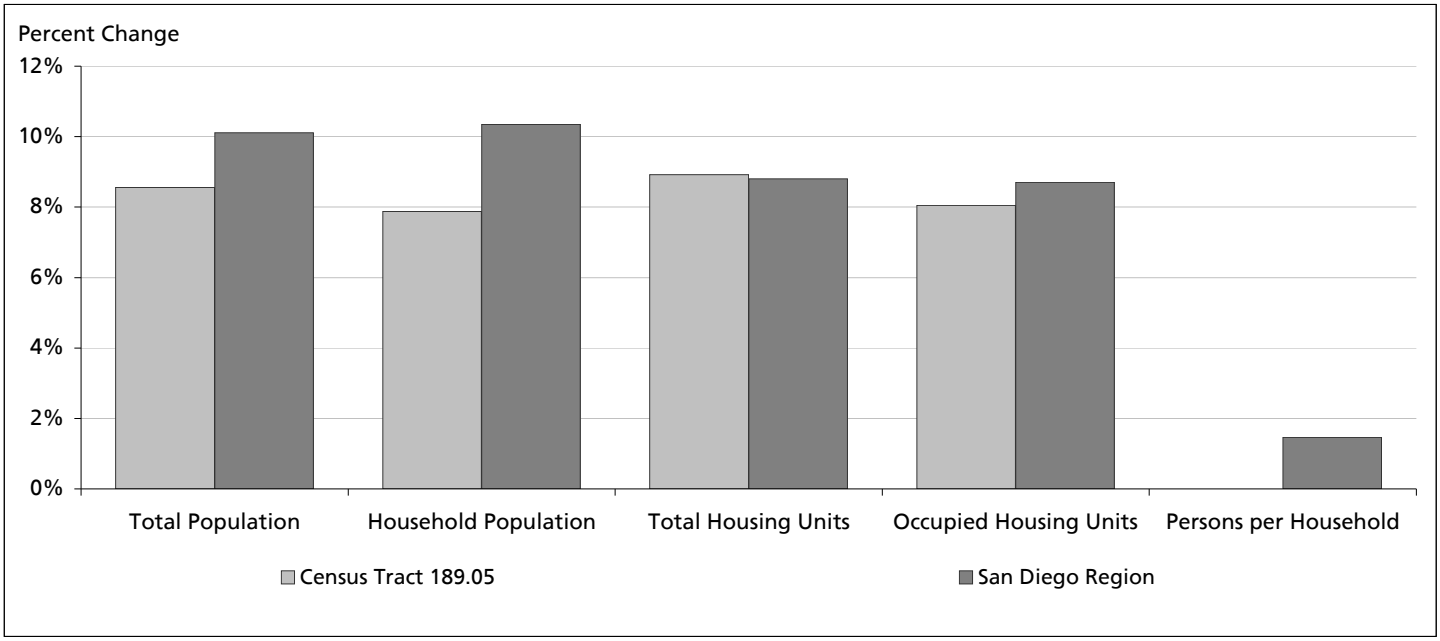
POPULATION BY RACE, ETHNICITY AND AGE (2007)

		Non-Hispanic				
	Hispanic	White	Black	American Indian	Asian & Pacific Isl.	Other
Total Population	**3,760**	**2,778**	**172**	**21**	**116**	**128**
Under 5	482	251	15	0	9	16
5 to 9	364	199	9	0	3	2
10 to 14	375	157	3	0	4	7
15 to 17	220	111	1	0	3	4
18 and 19	150	72	4	1	2	1
20 to 24	319	201	2	0	5	13
25 to 29	408	333	28	2	7	12
30 to 34	349	198	23	1	3	7
35 to 39	282	132	18	0	4	7
40 to 44	229	125	6	3	5	18
45 to 49	174	180	13	1	11	11
50 to 54	147	177	18	2	11	9
55 to 59	100	188	8	3	10	8
60 and 61	28	41	1	0	6	0
62 to 64	41	35	4	0	4	3
65 to 69	39	75	1	2	6	1
70 to 74	26	53	3	2	11	1
75 to 79	5	72	5	1	2	5
80 to 84	13	86	2	0	2	0
85 and older	9	92	8	3	8	3
Under 18	1,441	718	28	0	19	29
65 and older	92	378	19	8	29	10
Median age	24.5	31.6	35.3	55.8	50.9	36.4

POPULATION AND HOUSING CHARACTERISTICS (CHANGE 2000 - 2007)



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Multi-Family: Apartments and higher density condominium developments (generally more than 12 units per acre)

Mobile Home and Other: Mobile homes in mobile home parks, boats, and other housing not elsewhere classified.

Source: SANDAG, Current Estimates (2007)
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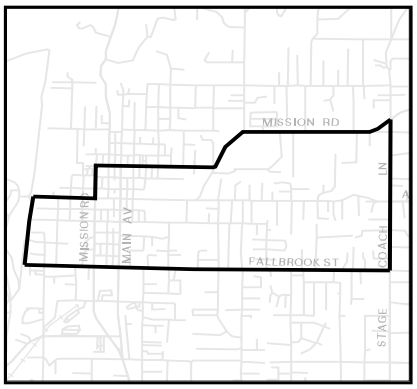
POPULATION AND HOUSING ESTIMATES
Census Tract 189.04



POPULATION AND HOUSING (2000 and 2007)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change Numeric	Percent
Total Population	**5,715**	**5,783**	**68**	**1.2%**
Household Population	5,525	5,553	28	0.5%
Group Quarters Population	190	230	40	21.1%
Total Housing Units	**1,863**	**1,883**	**20**	**1.1%**
Single Family - Detached	--	1,048	--	--
Single Family - Multiple-Unit	--	125	--	--
Multi-Family	--	710	--	--
Mobile Home and Other	--	0	--	--
Occupied Housing Units	**1,824**	**1,837**	**13**	**0.7%**
Single Family - Detached	--	1,041	--	--
Single Family - Multiple-Unit	--	125	--	--
Multi-Family	--	671	--	--
Mobile Home and Other	--	0	--	--
Vacancy Rate	**2.1%**	**2.4%**	**0.3%**	**14.3%**
Persons per Household	**3.03**	**3.02**	**-0.01**	**-0.3%**

NOTE: Starting in 2007, SANDAG will begin tracking housing structure type based on new definitions. Data for the new structure types are not comparable with information from the 2000 Census or SANDAG's Forecast. New definitions are described on page 3.

HOUSEHOLD INCOME (real 1999 dollars, adjusted for inflation)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change Numeric	Percent
Households by Income Category				
Less than $15,000	307	297	-10	-3.3%
$15,000-$29,999	434	483	49	11.3%
$30,000-$44,999	299	290	-9	-3.0%
$45,000-$59,999	302	294	-8	-2.6%
$60,000-$74,999	204	226	22	10.8%
$75,000-$99,999	185	148	-37	-20.0%
$100,000-$124,999	48	61	13	27.1%
$125,000-$149,999	13	6	-7	-53.8%
$150,000-$199,999	20	12	-8	-40.0%
$200,000 or more	12	20	8	66.7%
Total Households	**1,824**	**1,837**	**13**	**0.7%**
Median Household Income				
Adjusted for inflation (1999 $)	$38,579	$37,164	-1,415	-3.7%
Not adjusted for inflation (current $)	$38,579	$49,057	10,478	27.2%

ADVISORY:

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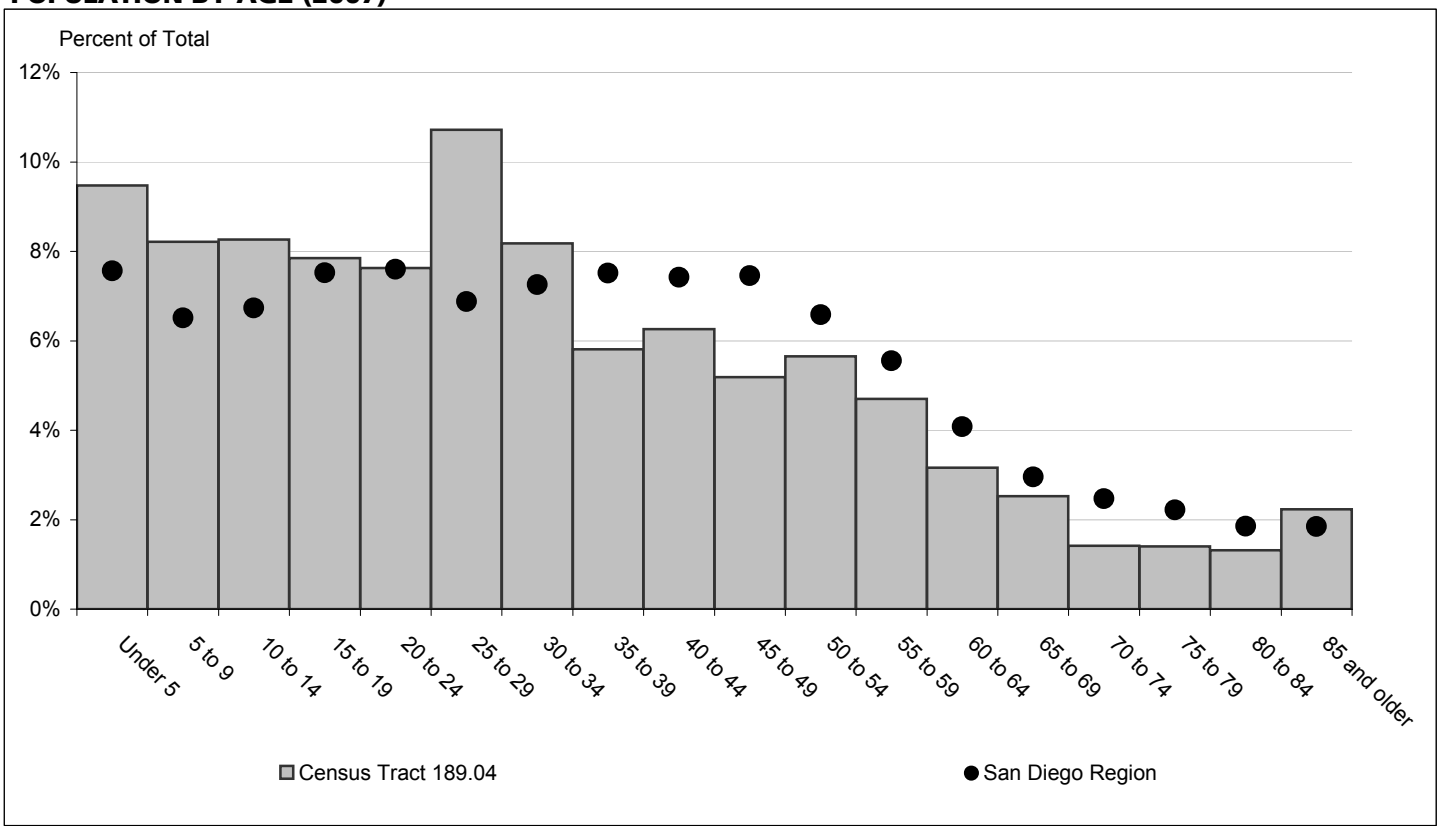
POPULATION BY GENDER AND AGE (2007)

	Total	Male	Female	Percent Female
Total Population	**5,783**	**2,881**	**2,902**	**50%**
Under 5	548	264	284	52%
5 to 9	475	242	233	49%
10 to 14	478	226	252	53%
15 to 17	252	126	126	50%
18 and 19	202	108	94	47%
20 to 24	441	239	202	46%
25 to 29	620	346	274	44%
30 to 34	473	276	197	42%
35 to 39	336	176	160	48%
40 to 44	362	172	190	52%
45 to 49	300	152	148	49%
50 to 54	327	136	191	58%
55 to 59	272	140	132	49%
60 and 61	71	29	42	59%
62 to 64	112	43	69	62%
65 to 69	146	69	77	53%
70 to 74	82	36	46	56%
75 to 79	81	36	45	56%
80 to 84	76	24	52	68%
85 and older	129	41	88	68%
Under 18	1,753	858	895	51%
65 and older	514	206	308	60%
Median age	29.0	28.4	29.7	-

POPULATION BY AGE (2007)



Source: SANDAG, Current Estimates (2007)
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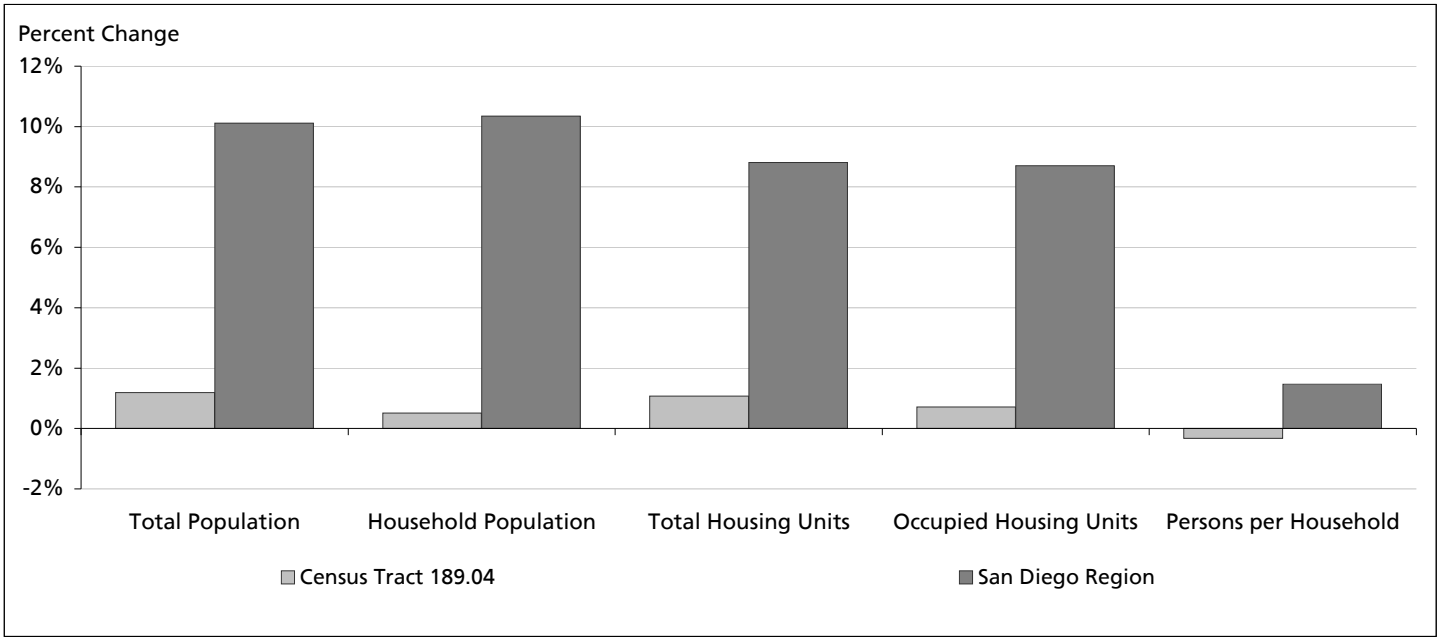
POPULATION BY RACE, ETHNICITY AND AGE (2007)

		Non-Hispanic				
	Hispanic	White	Black	American Indian	Asian & Pacific Isl.	Other
Total Population	**2,716**	**2,641**	**123**	**20**	**110**	**173**
Under 5	280	227	15	0	0	26
5 to 9	246	208	7	0	3	11
10 to 14	292	176	1	0	2	7
15 to 17	153	89	2	0	1	7
18 and 19	115	76	7	1	1	2
20 to 24	227	179	6	0	5	24
25 to 29	303	259	34	1	5	18
30 to 34	283	154	25	1	6	4
35 to 39	188	128	5	3	4	8
40 to 44	193	139	6	1	5	18
45 to 49	123	149	6	1	14	7
50 to 54	98	200	1	3	15	10
55 to 59	59	194	4	0	9	6
60 and 61	18	44	0	0	5	4
62 to 64	35	68	0	1	6	2
65 to 69	49	79	0	2	11	5
70 to 74	30	41	0	1	6	4
75 to 79	9	60	1	0	6	5
80 to 84	6	63	1	1	3	2
85 and older	9	108	2	4	3	3
Under 18	971	700	25	0	6	51
65 and older	103	351	4	8	29	19
Median age	25.7	33.5	28.5	53.3	53.0	27.6

POPULATION AND HOUSING CHARACTERISTICS (CHANGE 2000 - 2007)



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Multi-Family: Apartments and higher density condominium developments (generally more than 12 units per acre)

Mobile Home and Other: Mobile homes in mobile home parks, boats, and other housing not elsewhere classified.

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POPULATION AND HOUSING ESTIMATES
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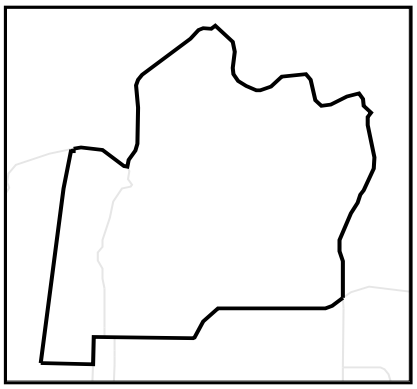

POPULATION AND HOUSING (2000 and 2007)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change Numeric	Percent
Total Population	**4,771**	**4,926**	**155**	**3.2%**
Household Population	4,729	4,829	100	2.1%
Group Quarters Population	42	97	55	131.0%
Total Housing Units	**1,668**	**1,704**	**36**	**2.2%**
Single Family - Detached	--	1,079	--	--
Single Family - Multiple-Unit	--	92	--	--
Multi-Family	--	404	--	--
Mobile Home and Other	--	129	--	--
Occupied Housing Units	**1,621**	**1,645**	**24**	**1.5%**
Single Family - Detached	--	1,066	--	--
Single Family - Multiple-Unit	--	87	--	--
Multi-Family	--	375	--	--
Mobile Home and Other	--	117	--	--
Vacancy Rate	**2.8%**	**3.5%**	**0.7%**	**25.0%**
Persons per Household	**2.92**	**2.94**	**0.02**	**0.7%**

NOTE: Starting in 2007, SANDAG will begin tracking housing structure type based on new definitions. Data for the new structure types are not comparable with information from the 2000 Census or SANDAG's Forecast. New definitions are described on page 3.

HOUSEHOLD INCOME (real 1999 dollars, adjusted for inflation)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change Numeric	Percent
Households by Income Category				
Less than $15,000	257	221	-36	-14.0%
$15,000-$29,999	327	303	-24	-7.3%
$30,000-$44,999	291	277	-14	-4.8%
$45,000-$59,999	230	222	-8	-3.5%
$60,000-$74,999	142	169	27	19.0%
$75,000-$99,999	138	186	48	34.8%
$100,000-$124,999	132	111	-21	-15.9%
$125,000-$149,999	71	64	-7	-9.9%
$150,000-$199,999	10	60	50	500.0%
$200,000 or more	23	32	9	39.1%
Total Households	**1,621**	**1,645**	**24**	**1.5%**
Median Household Income				
Adjusted for inflation (1999 $)	$41,675	$46,453	4,778	11.5%
Not adjusted for inflation (current $)	$41,675	$61,319	19,644	47.1%

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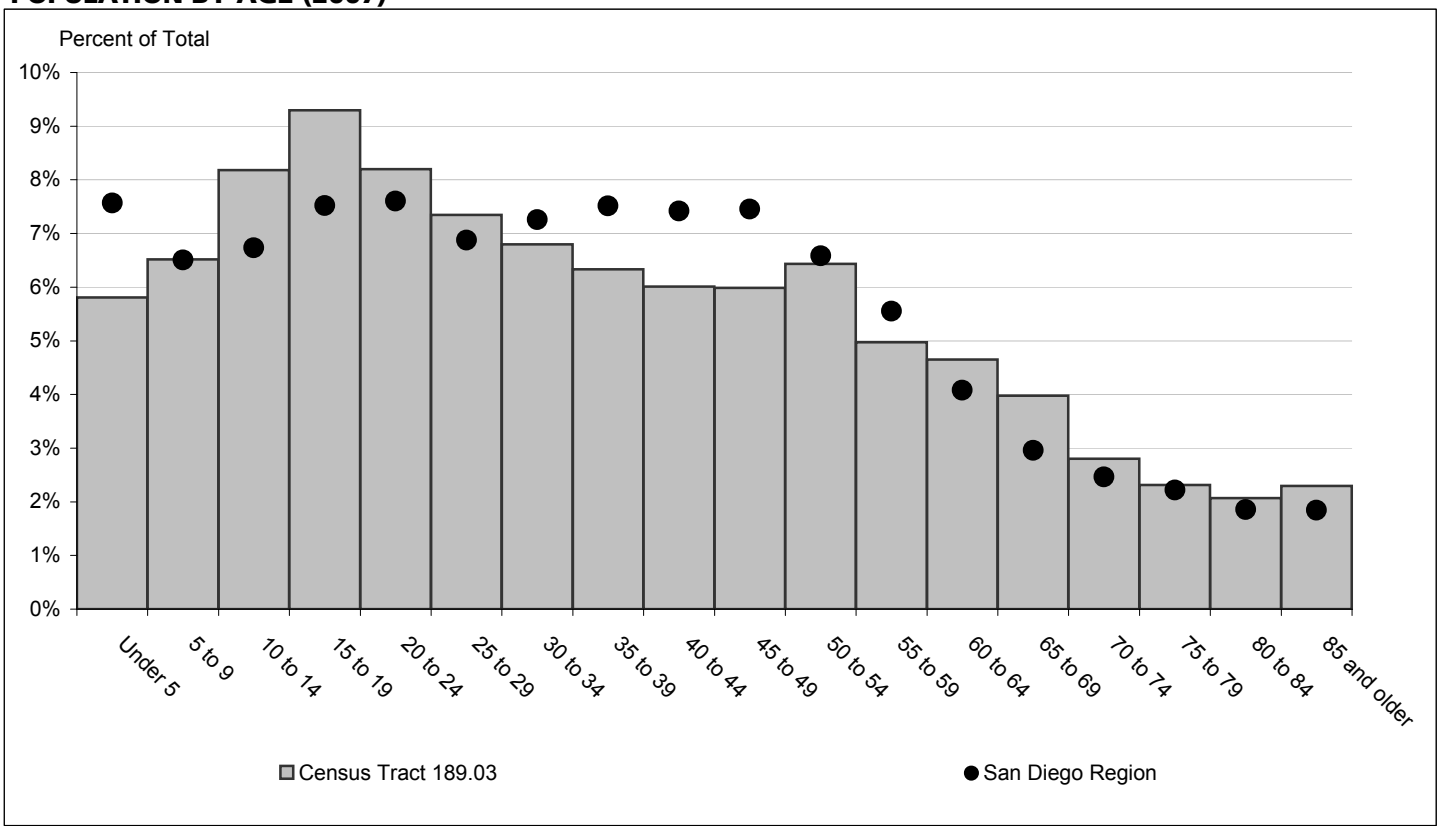
POPULATION BY GENDER AND AGE (2007)

	Total	Male	Female	Percent Female
Total Population	**4,926**	**2,418**	**2,508**	**51%**
Under 5	286	138	148	52%
5 to 9	321	159	162	50%
10 to 14	403	212	191	47%
15 to 17	288	154	134	47%
18 and 19	170	86	84	49%
20 to 24	404	195	209	52%
25 to 29	362	193	169	47%
30 to 34	335	179	156	47%
35 to 39	312	163	149	48%
40 to 44	296	141	155	52%
45 to 49	295	138	157	53%
50 to 54	317	163	154	49%
55 to 59	245	114	131	53%
60 and 61	82	48	34	41%
62 to 64	147	61	86	59%
65 to 69	196	90	106	54%
70 to 74	138	63	75	54%
75 to 79	114	50	64	56%
80 to 84	102	38	64	63%
85 and older	113	33	80	71%
Under 18	1,298	663	635	49%
65 and older	663	274	389	59%
Median age	33.4	32.0	35.0	-

POPULATION BY AGE (2007)



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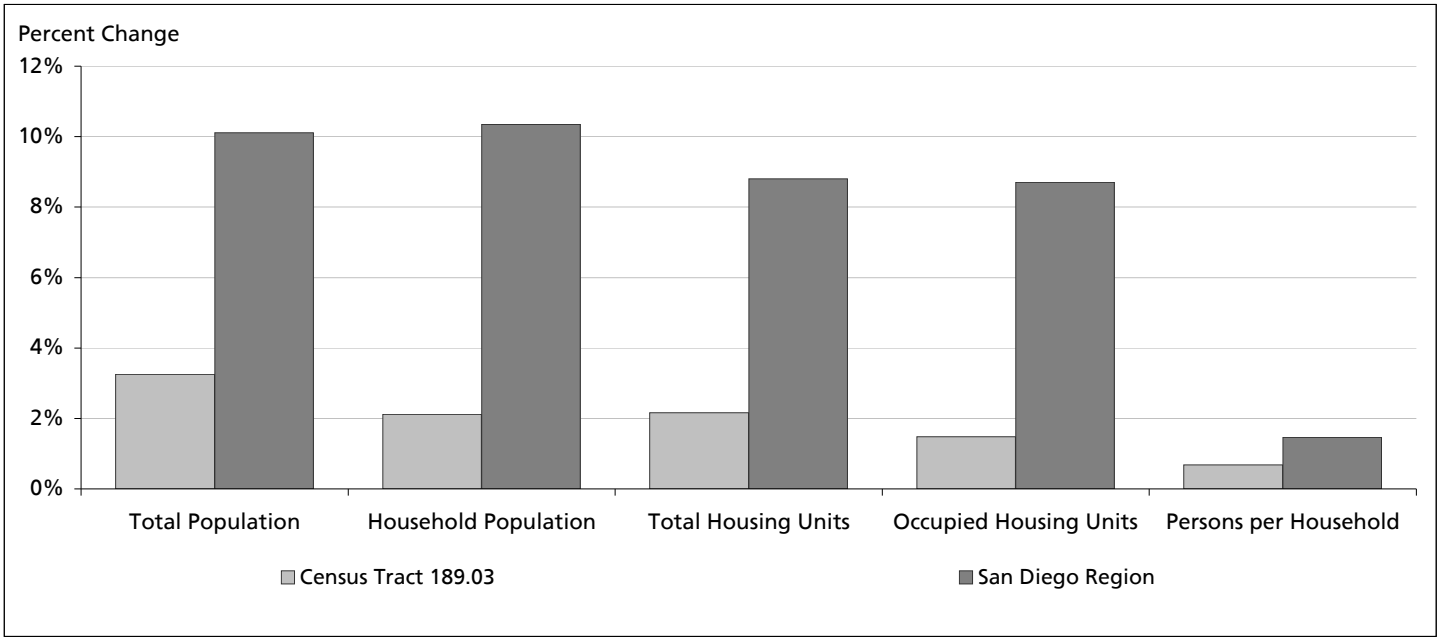
POPULATION BY RACE, ETHNICITY AND AGE (2007)

		Non-Hispanic				
	Hispanic	White	Black	American Indian	Asian & Pacific Isl.	Other
Total Population	**2,204**	**2,448**	**66**	**15**	**58**	**135**
Under 5	201	54	1	0	2	28
5 to 9	188	106	7	0	3	17
10 to 14	215	163	13	0	1	11
15 to 17	165	105	7	0	3	8
18 and 19	86	74	4	0	0	6
20 to 24	193	180	6	2	2	21
25 to 29	180	159	5	2	4	12
30 to 34	195	122	5	2	2	9
35 to 39	203	93	5	2	7	2
40 to 44	159	122	3	1	7	4
45 to 49	117	162	1	1	7	7
50 to 54	85	216	4	1	5	6
55 to 59	59	180	2	1	3	0
60 and 61	20	57	2	1	2	0
62 to 64	36	108	0	1	1	1
65 to 69	38	153	1	0	3	1
70 to 74	43	93	0	0	2	0
75 to 79	17	94	0	1	1	1
80 to 84	3	99	0	0	0	0
85 and older	1	108	0	0	3	1
Under 18	769	428	28	0	9	64
65 and older	102	547	1	1	9	3
Median age	26.5	46.4	20.8	38.8	43.6	19.1

POPULATION AND HOUSING CHARACTERISTICS (CHANGE 2000 - 2007)



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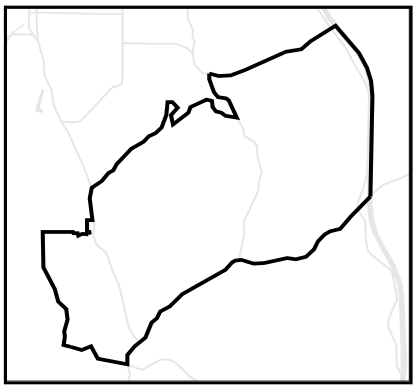
POPULATION AND HOUSING ESTIMATES
Census Tract 188.02



POPULATION AND HOUSING (2000 and 2007)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change Numeric	Percent
Total Population	**7,350**	**8,540**	**1,190**	**16.2%**
Household Population	7,334	8,514	1,180	16.1%
Group Quarters Population	16	26	10	62.5%
Total Housing Units	**3,077**	**3,601**	**524**	**17.0%**
Single Family - Detached	--	2,777	--	--
Single Family - Multiple-Unit	--	326	--	--
Multi-Family	--	284	--	--
Mobile Home and Other	--	214	--	--
Occupied Housing Units	**2,917**	**3,409**	**492**	**16.9%**
Single Family - Detached	--	2,683	--	--
Single Family - Multiple-Unit	--	317	--	--
Multi-Family	--	206	--	--
Mobile Home and Other	--	203	--	--
Vacancy Rate	**5.2%**	**5.3%**	**0.1%**	**1.9%**
Persons per Household	**2.51**	**2.50**	**-0.01**	**-0.4%**

NOTE: Starting in 2007, SANDAG will begin tracking housing structure type based on new definitions. Data for the new structure types are not comparable with information from the 2000 Census or SANDAG's Forecast. New definitions are described on page 3.

HOUSEHOLD INCOME (real 1999 dollars, adjusted for inflation)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change Numeric	Percent
Households by Income Category				
Less than $15,000	237	227	-10	-4.2%
$15,000-$29,999	308	313	5	1.6%
$30,000-$44,999	323	366	43	13.3%
$45,000-$59,999	318	371	53	16.7%
$60,000-$74,999	396	348	-48	-12.1%
$75,000-$99,999	425	493	68	16.0%
$100,000-$124,999	381	380	-1	-0.3%
$125,000-$149,999	158	278	120	75.9%
$150,000-$199,999	179	332	153	85.5%
$200,000 or more	192	301	109	56.8%
Total Households	**2,917**	**3,409**	**492**	**16.9%**
Median Household Income				
Adjusted for inflation (1999 $)	$70,322	$79,031	8,709	12.4%
Not adjusted for inflation (current $)	$70,322	$104,323	34,001	48.4%

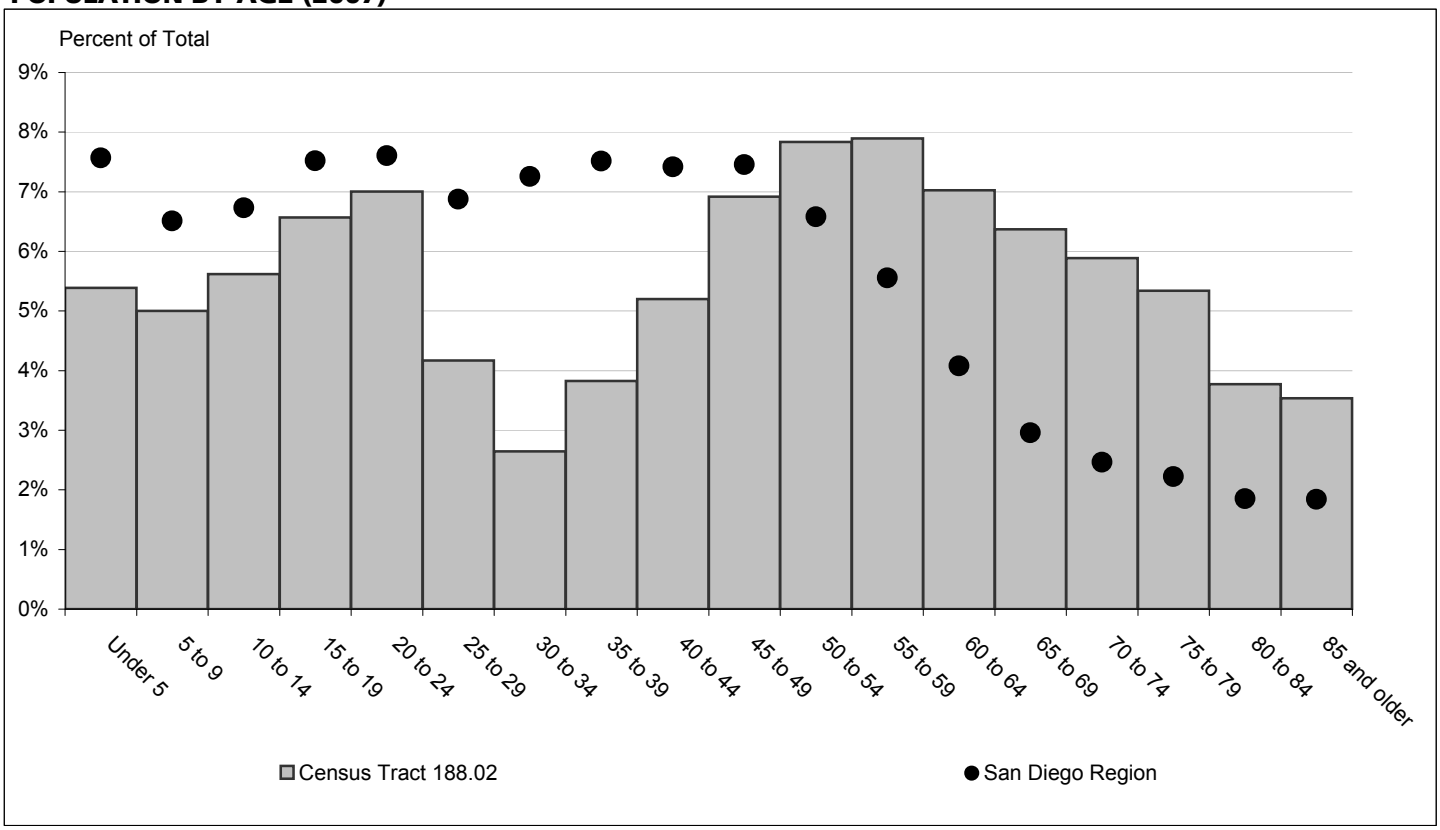
ADVISORY:

Caution should be taken when using data for small population groups, particularly at small levels of geography. Some 2000 Census data may not match information published by the U.S. Census Bureau for the following reasons: sample census data have been controlled to match 100 percent count (Summary File 1) data; and some minor adjustments were made (such as correcting the location of housing units that were erroneously allocated by the Census Bureau to roads and open space) to more accurately reflect the region's true population and housing distribution.

POPULATION BY GENDER AND AGE (2007)

	Total	Male	Female	Percent Female
Total Population	**8,540**	**4,122**	**4,418**	**52%**
Under 5	460	219	241	52%
5 to 9	427	212	215	50%
10 to 14	480	232	248	52%
15 to 17	349	172	177	51%
18 and 19	212	114	98	46%
20 to 24	598	317	281	47%
25 to 29	356	186	170	48%
30 to 34	226	122	104	46%
35 to 39	327	148	179	55%
40 to 44	444	212	232	52%
45 to 49	591	267	324	55%
50 to 54	669	311	358	54%
55 to 59	674	323	351	52%
60 and 61	276	119	157	57%
62 to 64	324	164	160	49%
65 to 69	544	260	284	52%
70 to 74	503	271	232	46%
75 to 79	456	215	241	53%
80 to 84	322	165	157	49%
85 and older	302	93	209	69%
Under 18	1,716	835	881	51%
65 and older	2,127	1,004	1,123	53%
Median age	48.3	47.4	49.1	-

POPULATION BY AGE (2007)



Source: SANDAG, Current Estimates (2007)
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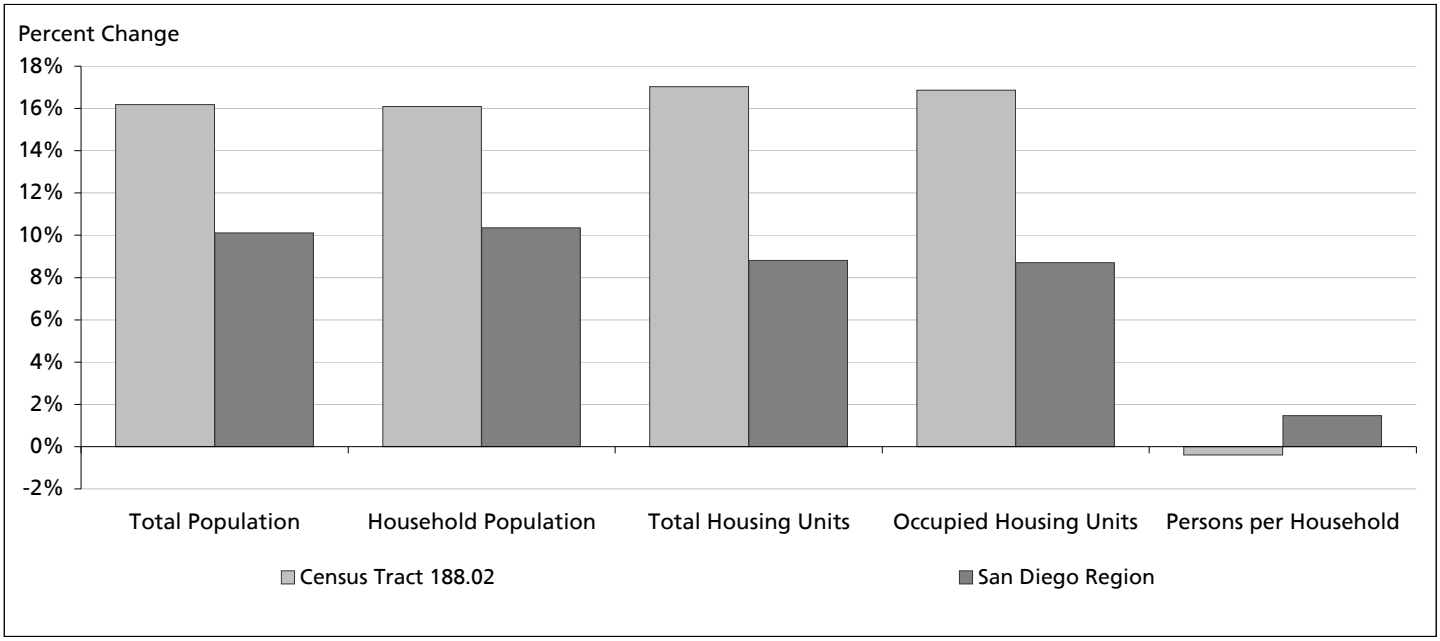
POPULATION BY RACE, ETHNICITY AND AGE (2007)

		Non-Hispanic				
	Hispanic	White	Black	American Indian	Asian & Pacific Isl.	Other
Total Population	**901**	**7,260**	**38**	**35**	**187**	**119**
Under 5	102	305	8	0	20	25
5 to 9	75	288	14	5	13	32
10 to 14	71	361	8	7	12	21
15 to 17	44	289	0	1	8	7
18 and 19	19	176	0	3	4	10
20 to 24	81	484	3	1	19	10
25 to 29	62	272	1	3	15	3
30 to 34	72	136	0	2	14	2
35 to 39	78	231	1	2	15	0
40 to 44	76	351	1	3	12	1
45 to 49	57	515	1	2	14	2
50 to 54	38	618	0	0	10	3
55 to 59	51	613	0	1	9	0
60 and 61	15	261	0	0	0	0
62 to 64	5	316	0	0	3	0
65 to 69	10	528	0	2	3	1
70 to 74	30	462	1	1	7	2
75 to 79	10	439	0	0	7	0
80 to 84	3	319	0	0	0	0
85 and older	2	296	0	2	2	0
Under 18	292	1,243	30	13	53	85
65 and older	55	2,044	1	5	19	3
Median age	29.7	51.8	8.9	25.8	30.9	10.6

POPULATION AND HOUSING CHARACTERISTICS (CHANGE 2000 - 2007)



New Housing Structure Type Definitions in 2007:

Single Family - Detached: Traditional detached single family housing units.

Single Family - Multiple Unit: Includes single family attached housing units, duplexes, townhouses, and lower density condominium developments (generally less than 12 units per acre)

Multi-Family: Apartments and higher density condominium developments (generally more than 12 units per acre)

Mobile Home and Other: Mobile homes in mobile home parks, boats, and other housing not elsewhere classified.

Source: SANDAG, Current Estimates (2007)
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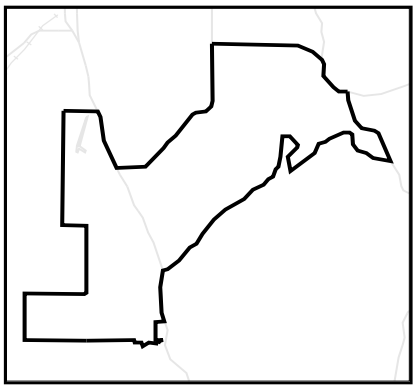
POPULATION AND HOUSING ESTIMATES
Census Tract 188.01



POPULATION AND HOUSING (2000 and 2007)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change Numeric	Percent
Total Population	**3,180**	**3,701**	**521**	**16.4%**
Household Population	3,175	3,687	512	16.1%
Group Quarters Population	5	14	9	180.0%
Total Housing Units	**1,154**	**1,343**	**189**	**16.4%**
Single Family - Detached	--	1,235	--	--
Single Family - Multiple-Unit	--	18	--	--
Multi-Family	--	90	--	--
Mobile Home and Other	--	0	--	--
Occupied Housing Units	**1,114**	**1,300**	**186**	**16.7%**
Single Family - Detached	--	1,212	--	--
Single Family - Multiple-Unit	--	14	--	--
Multi-Family	--	74	--	--
Mobile Home and Other	--	0	--	--
Vacancy Rate	**3.5%**	**3.2%**	**-0.3%**	**-8.6%**
Persons per Household	**2.85**	**2.84**	**-0.01**	**-0.4%**

NOTE: Starting in 2007, SANDAG will begin tracking housing structure type based on new definitions. Data for the new structure types are not comparable with information from the 2000 Census or SANDAG's Forecast. New definitions are described on page 3.

HOUSEHOLD INCOME (real 1999 dollars, adjusted for inflation)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change Numeric	Percent
Households by Income Category				
Less than $15,000	138	150	12	8.7%
$15,000-$29,999	66	78	12	18.2%
$30,000-$44,999	89	101	12	13.5%
$45,000-$59,999	124	143	19	15.3%
$60,000-$74,999	148	191	43	29.1%
$75,000-$99,999	242	229	-13	-5.4%
$100,000-$124,999	132	193	61	46.2%
$125,000-$149,999	59	77	18	30.5%
$150,000-$199,999	80	64	-16	-20.0%
$200,000 or more	36	74	38	105.6%
Total Households	**1,114**	**1,300**	**186**	**16.7%**
Median Household Income				
Adjusted for inflation (1999 $)	$74,189	$73,979	-210	-0.3%
Not adjusted for inflation (current $)	$74,189	$97,654	23,465	31.6%

ADVISORY:

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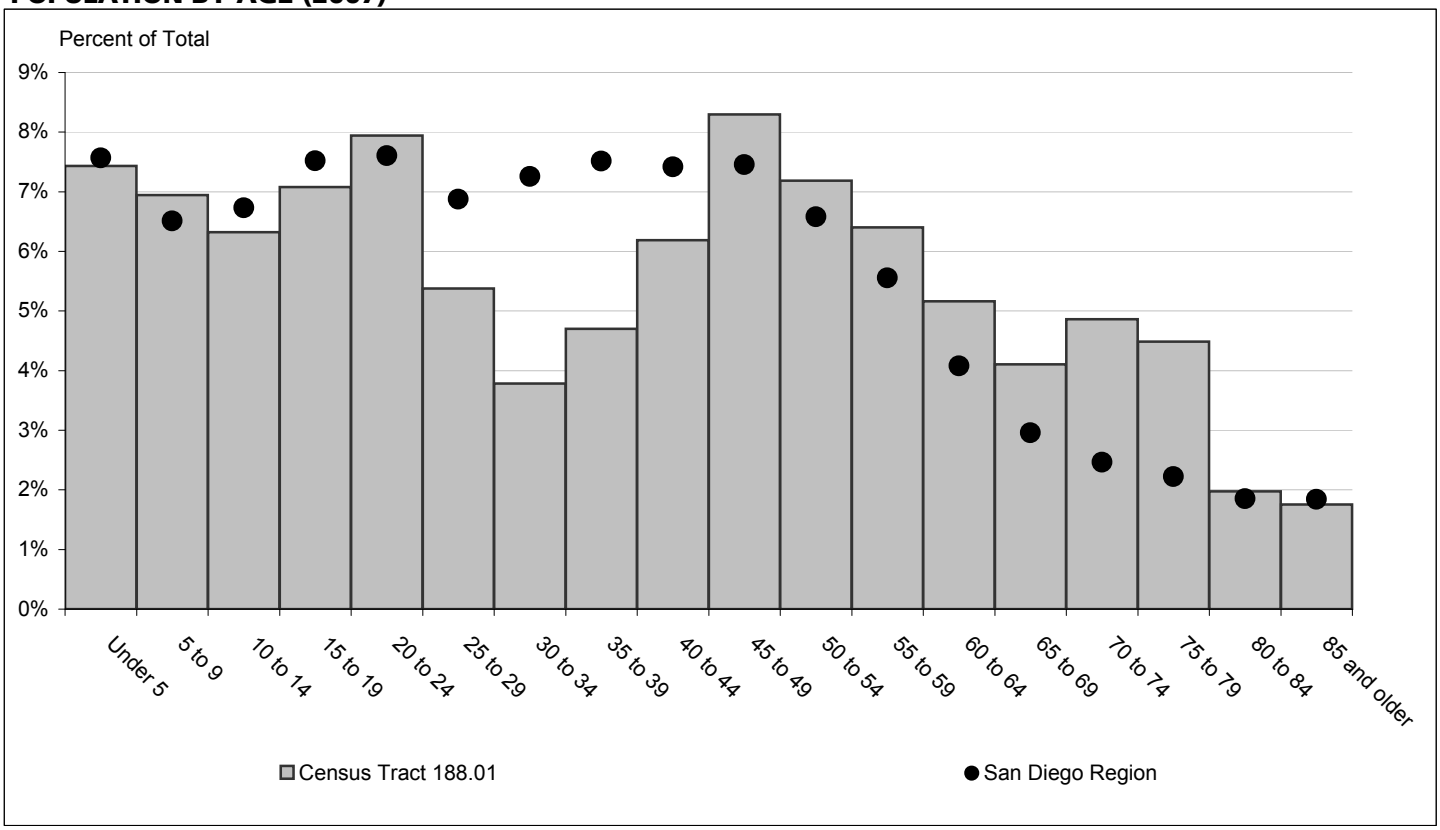
POPULATION BY GENDER AND AGE (2007)

	Total	Male	Female	Percent Female
Total Population	**3,701**	**1,868**	**1,833**	**50%**
Under 5	275	138	137	50%
5 to 9	257	129	128	50%
10 to 14	234	130	104	44%
15 to 17	150	72	78	52%
18 and 19	112	53	59	53%
20 to 24	294	157	137	47%
25 to 29	199	115	84	42%
30 to 34	140	79	61	44%
35 to 39	174	79	95	55%
40 to 44	229	104	125	55%
45 to 49	307	144	163	53%
50 to 54	266	127	139	52%
55 to 59	237	117	120	51%
60 and 61	76	31	45	59%
62 to 64	115	57	58	50%
65 to 69	152	74	78	51%
70 to 74	180	94	86	48%
75 to 79	166	92	74	45%
80 to 84	73	42	31	42%
85 and older	65	34	31	48%
Under 18	916	469	447	49%
65 and older	636	336	300	47%
Median age	40.3	38.9	41.3	-

POPULATION BY AGE (2007)



Source: SANDAG, Current Estimates (2007)
SANDAG
www.sandag.org

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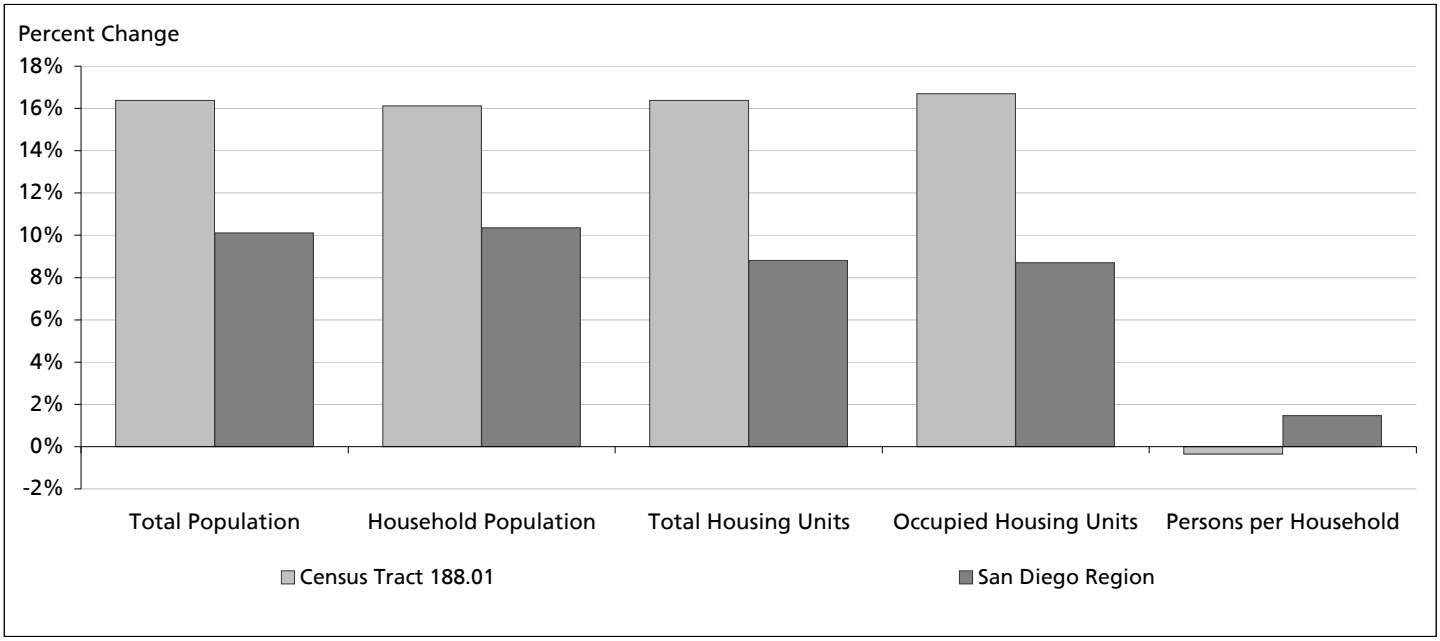
POPULATION BY RACE, ETHNICITY AND AGE (2007)

		Non-Hispanic				
	Hispanic	White	Black	American Indian	Asian & Pacific Isl.	Other
Total Population	**606**	**2,874**	**15**	**22**	**97**	**87**
Under 5	83	147	7	0	19	19
5 to 9	57	147	0	12	12	29
10 to 14	59	146	4	5	10	10
15 to 17	34	100	0	0	8	8
18 and 19	25	82	0	1	0	4
20 to 24	47	231	0	0	13	3
25 to 29	65	127	2	0	4	1
30 to 34	51	78	0	0	8	3
35 to 39	61	111	0	0	2	0
40 to 44	32	195	0	0	1	1
45 to 49	29	269	0	1	6	2
50 to 54	27	235	0	0	2	2
55 to 59	10	221	0	2	3	1
60 and 61	1	75	0	0	0	0
62 to 64	1	114	0	0	0	0
65 to 69	4	146	0	0	1	1
70 to 74	8	165	1	1	4	1
75 to 79	9	153	1	0	3	0
80 to 84	3	67	0	0	1	2
85 and older	0	65	0	0	0	0
Under 18	233	540	11	17	49	66
65 and older	24	596	2	1	9	4
Median age	24.8	46.4	10.6	9.6	19.7	9.2

POPULATION AND HOUSING CHARACTERISTICS (CHANGE 2000 - 2007)



New Housing Structure Type Definitions in 2007:

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Single Family - Multiple Unit: Includes single family attached housing units, duplexes, townhouses, and lower density condominium developments (generally less than 12 units per acre)

Multi-Family: Apartments and higher density condominium developments (generally more than 12 units per acre)

Mobile Home and Other: Mobile homes in mobile home parks, boats, and other housing not elsewhere classified.

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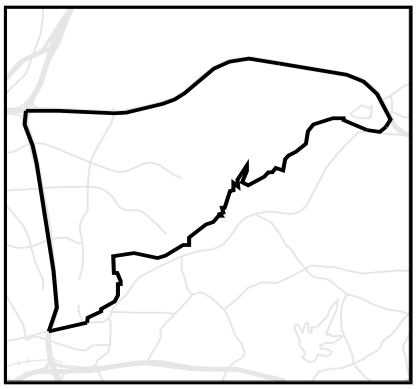
POPULATION AND HOUSING ESTIMATES

Tierrasanta Community Planning Area

City of San Diego



POPULATION AND HOUSING (2000 and 2007)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change Numeric	Percent
Total Population	**30,430**	**29,218**	**-1,212**	**-4.0%**
Household Population	30,416	29,196	-1,220	-4.0%
Group Quarters Population	14	22	8	57.1%
Total Housing Units	**11,069**	**11,432**	**363**	**3.3%**
Single Family - Detached	--	4,725	--	--
Single Family - Multiple-Unit	--	3,777	--	--
Multi-Family	--	2,930	--	--
Mobile Home and Other	--	0	--	--
Occupied Housing Units	**10,635**	**10,989**	**354**	**3.3%**
Single Family - Detached	--	4,661	--	--
Single Family - Multiple-Unit	--	3,651	--	--
Multi-Family	--	2,677	--	--
Mobile Home and Other	--	0	--	--
Vacancy Rate	**3.9%**	**3.9%**	**0.0%**	**0.0%**
Persons per Household	**2.86**	**2.66**	**-0.20**	**-7.0%**

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HOUSEHOLD INCOME (real 1999 dollars, adjusted for inflation)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change Numeric	Percent
Households by Income Category				
Less than $15,000	556	533	-23	-4.1%
$15,000-$29,999	1,238	1,218	-20	-1.6%
$30,000-$44,999	1,945	1,979	34	1.7%
$45,000-$59,999	1,719	1,708	-11	-0.6%
$60,000-$74,999	1,489	1,757	268	18.0%
$75,000-$99,999	1,279	1,396	117	9.1%
$100,000-$124,999	1,081	1,013	-68	-6.3%
$125,000-$149,999	510	495	-15	-2.9%
$150,000-$199,999	538	558	20	3.7%
$200,000 or more	280	332	52	18.6%
Total Households	**10,635**	**10,989**	**354**	**3.3%**
Median Household Income				
Adjusted for inflation (1999 $)	$58,774	$60,482	1,708	2.9%
Not adjusted for inflation (current $)	$58,774	$79,838	21,064	35.8%

ADVISORY:

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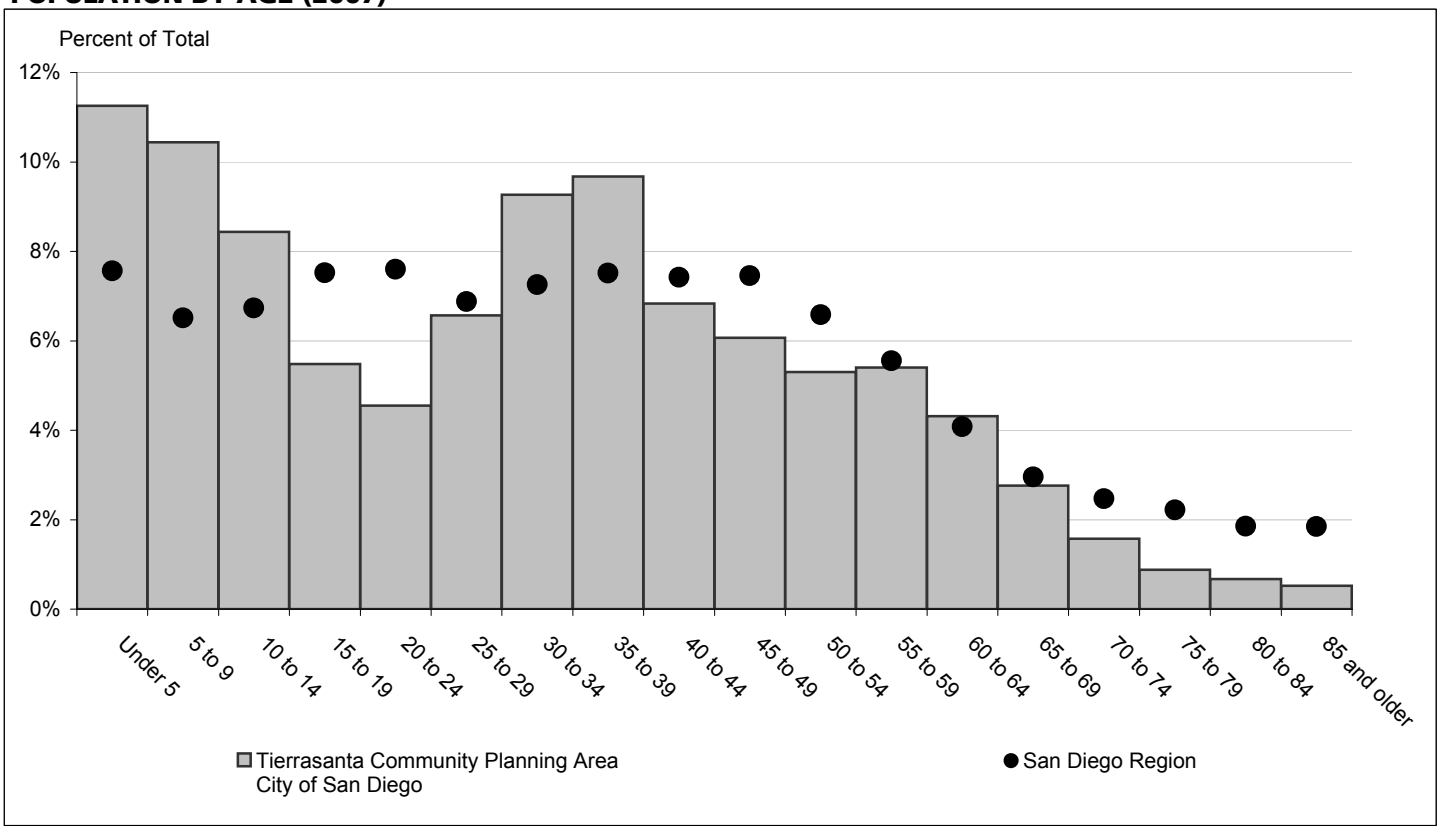
POPULATION BY GENDER AND AGE (2007)

	Total	Male	Female	Percent Female
Total Population	**29,218**	**14,388**	**14,830**	**51%**
Under 5	3,289	1,688	1,601	49%
5 to 9	3,051	1,539	1,512	50%
10 to 14	2,465	1,231	1,234	50%
15 to 17	1,073	501	572	53%
18 and 19	528	280	248	47%
20 to 24	1,329	677	652	49%
25 to 29	1,920	929	991	52%
30 to 34	2,707	1,377	1,330	49%
35 to 39	2,826	1,413	1,413	50%
40 to 44	1,996	1,008	988	49%
45 to 49	1,772	878	894	50%
50 to 54	1,550	698	852	55%
55 to 59	1,579	688	891	56%
60 and 61	554	258	296	53%
62 to 64	707	332	375	53%
65 to 69	806	387	419	52%
70 to 74	460	238	222	48%
75 to 79	258	134	124	48%
80 to 84	196	73	123	63%
85 and older	152	59	93	61%
Under 18	9,878	4,959	4,919	50%
65 and older	1,872	891	981	52%
Median age	31.8	31.3	32.3	-

POPULATION BY AGE (2007)



Source: SANDAG, Current Estimates (2007)
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www.sandag.org

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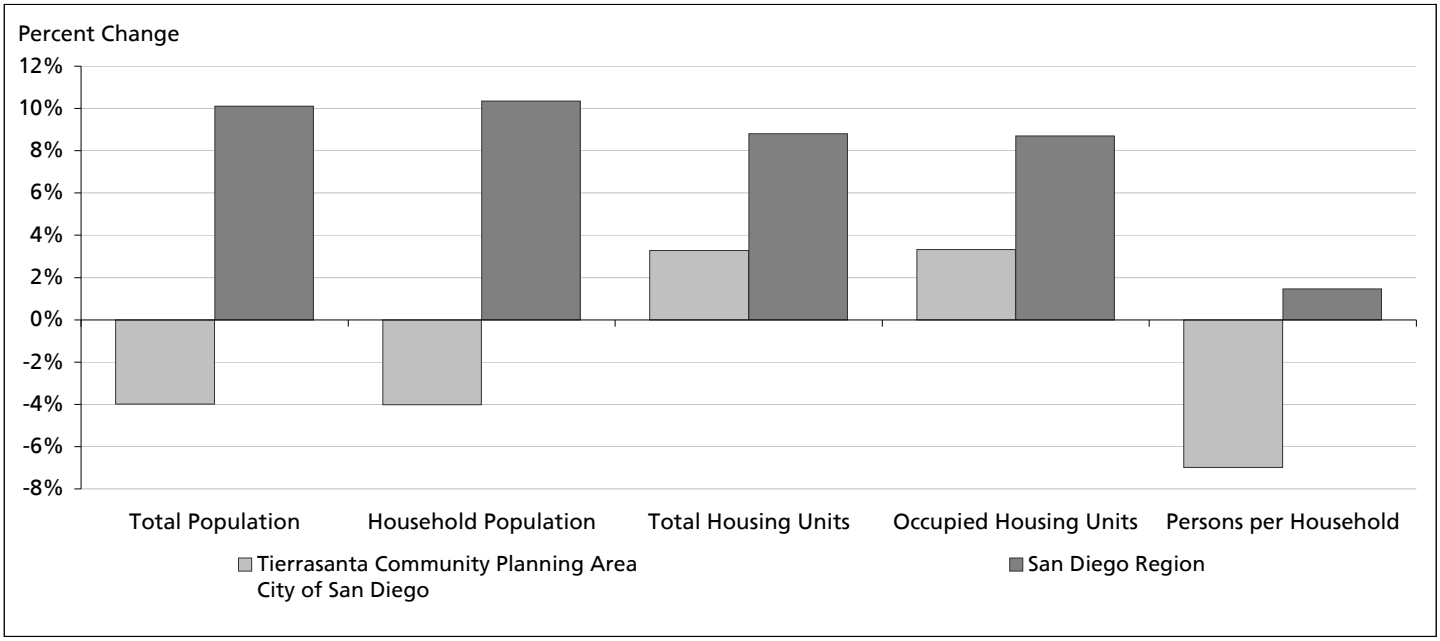
POPULATION BY RACE, ETHNICITY AND AGE (2007)

		Non-Hispanic				
	Hispanic	White	Black	American Indian	Asian & Pacific Isl.	Other
Total Population	**3,107**	**19,563**	**2,145**	**80**	**3,086**	**1,237**
Under 5	548	1,894	296	11	277	263
5 to 9	445	1,733	314	6	246	307
10 to 14	376	1,309	329	7	207	237
15 to 17	138	616	116	4	115	84
18 and 19	75	322	42	2	46	41
20 to 24	199	800	76	6	181	67
25 to 29	323	1,113	166	9	238	71
30 to 34	346	1,728	245	11	321	56
35 to 39	284	1,832	280	11	383	36
40 to 44	91	1,480	128	7	274	16
45 to 49	72	1,396	63	1	223	17
50 to 54	68	1,253	31	0	190	8
55 to 59	54	1,355	22	2	140	6
60 and 61	4	505	3	0	42	0
62 to 64	18	628	2	0	52	7
65 to 69	31	703	10	2	57	3
70 to 74	23	359	15	0	52	11
75 to 79	7	221	4	0	22	4
80 to 84	3	177	1	0	12	3
85 and older	2	139	2	1	8	0
Under 18	1,507	5,552	1,055	28	845	891
65 and older	66	1,599	32	3	151	21
Median age	19.2	35.7	18.8	27.2	33.6	11.0

POPULATION AND HOUSING CHARACTERISTICS (CHANGE 2000 - 2007)



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Multi-Family: Apartments and higher density condominium developments (generally more than 12 units per acre)

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Source: SANDAG, Current Estimates (2007)
SANDAG
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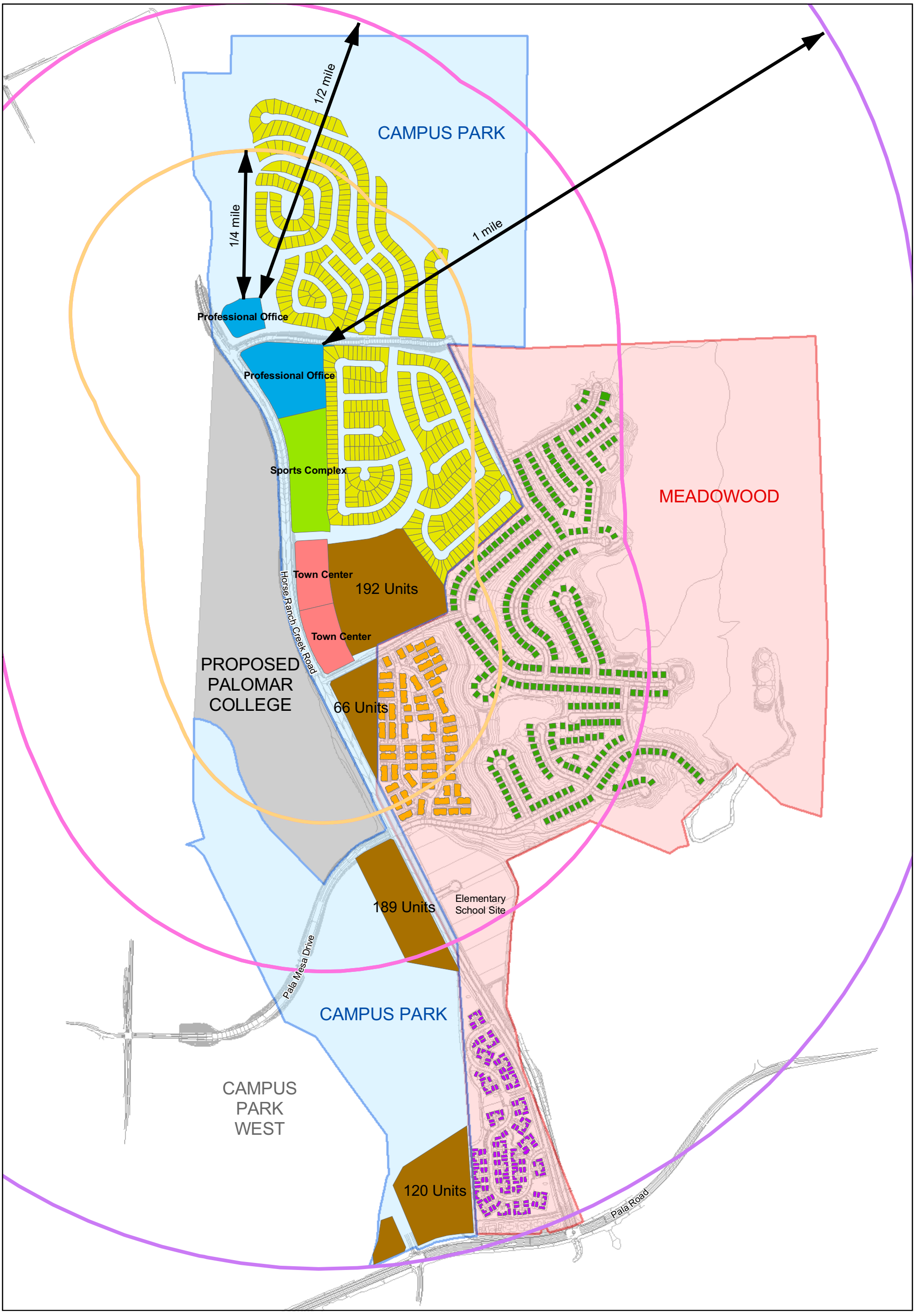
ATTACHMENT C

GIS MAP SHOWING ¼, ½, AND 1 MILE BUFFERS AROUND SHOPS, OFFICES, AND RETAIL USES



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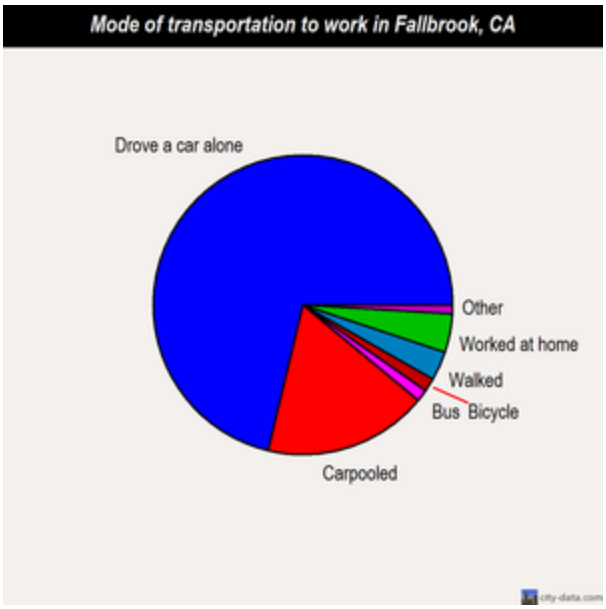
ATTACHMENT D

FALLBROOK SURVEY RESULTS



Means of transportation to work

- Drove a car alone: 8,583 (71%)
- Carpooled: 2,136 (18%)
- Bus or trolley bus: 156 (1%)
- Streetcar or trolley car: 12 (0%)
- Railroad: 7 (0%)
- Taxi: 8 (0%)
- Motorcycle: 31 (0%)
- Bicycle: 175 (1%)
- Walked: 377 (3%)
- Other means: 56 (0%)
- Worked at home: 503 (4%)

Source: http://www.city-data.com/housing/houses-Fallbrook-California.html

ATTACHMENT E

CAMPUS PARK AND MEADOWOOD TRAIL EXHIBITS

Note: This concept plan for illustration purposes only. Actual site development may vary from concepts depicted on this exhibit.

7/2/2007

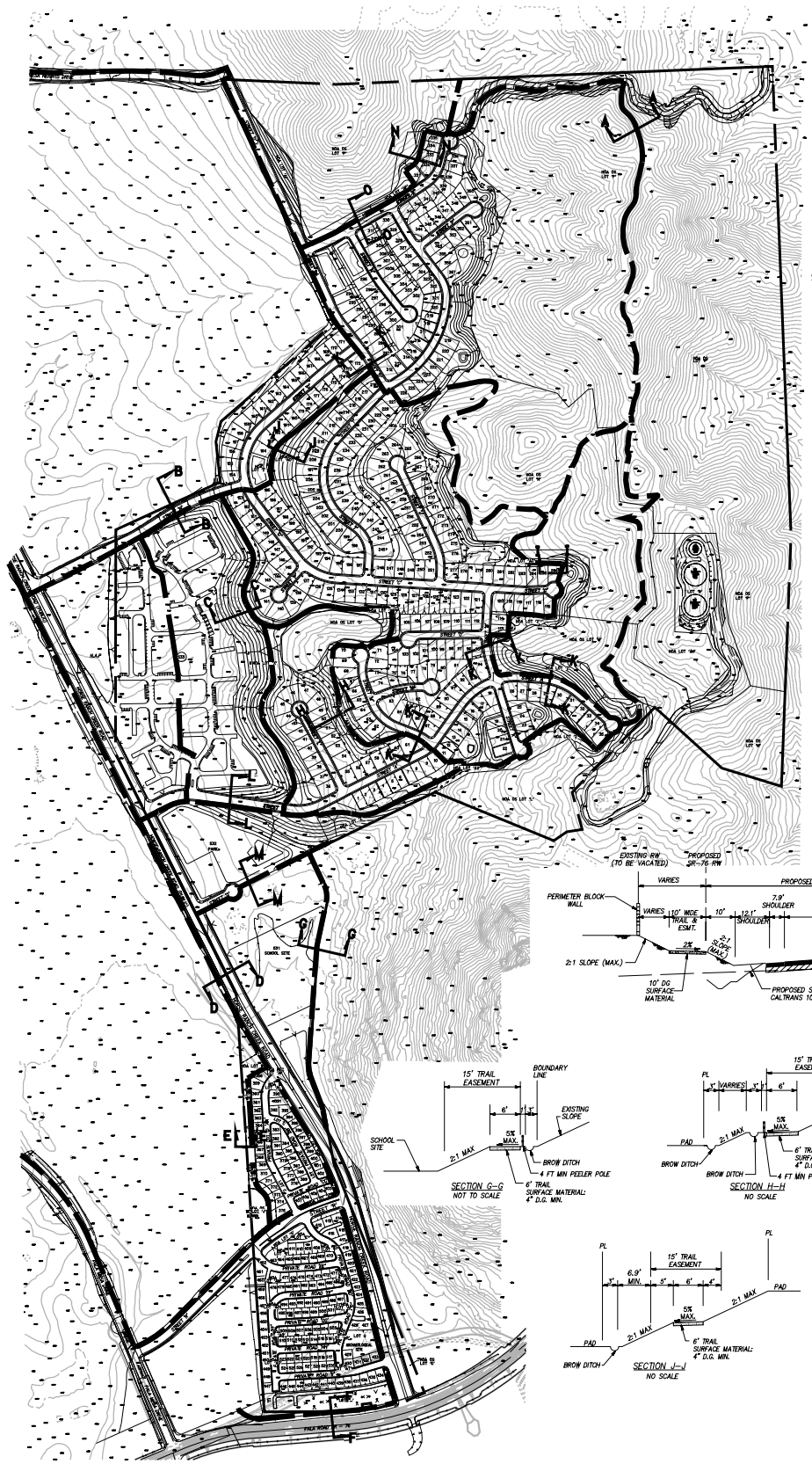
Development Design Services & Graphic Access, Inc.

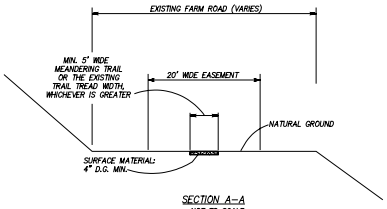
TRAILS, OPEN SPACE, AND PARKS CONCEPT

CAMPUS PARK - FALLBROOK CALIFORNIA

TRAIL EXHIBIT
MEADOWOOD

LEGEND
- PROJECT BOUNDARY
- PUBLIC TRAIL
- PRIVATE TRAIL





SECTION A–A
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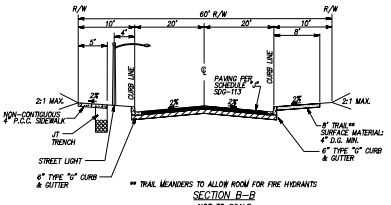
NOTE: ALL TRAILS MULTI–USE AND NON–MOTORIZED



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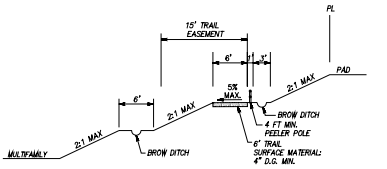

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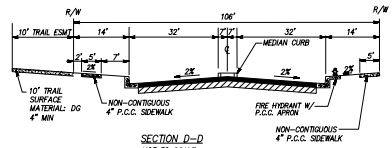

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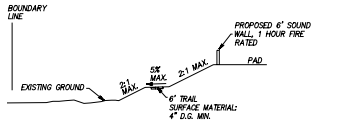

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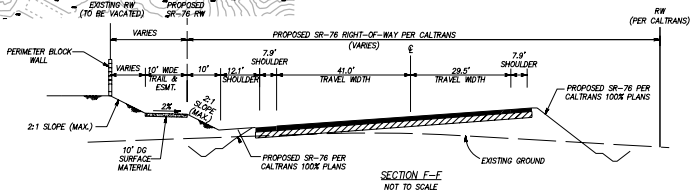

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SECTION G–G
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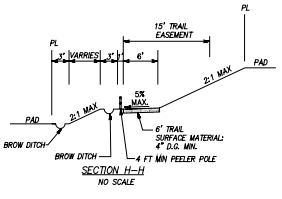

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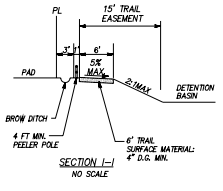

SECTION I–I
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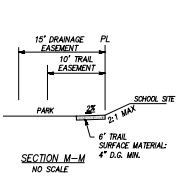
SECTION J–J
NO SCALE



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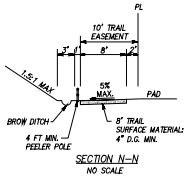

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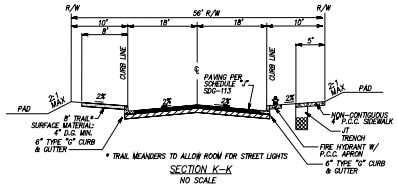

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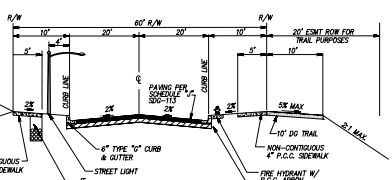

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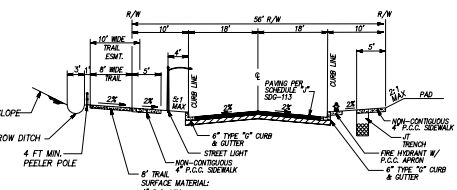
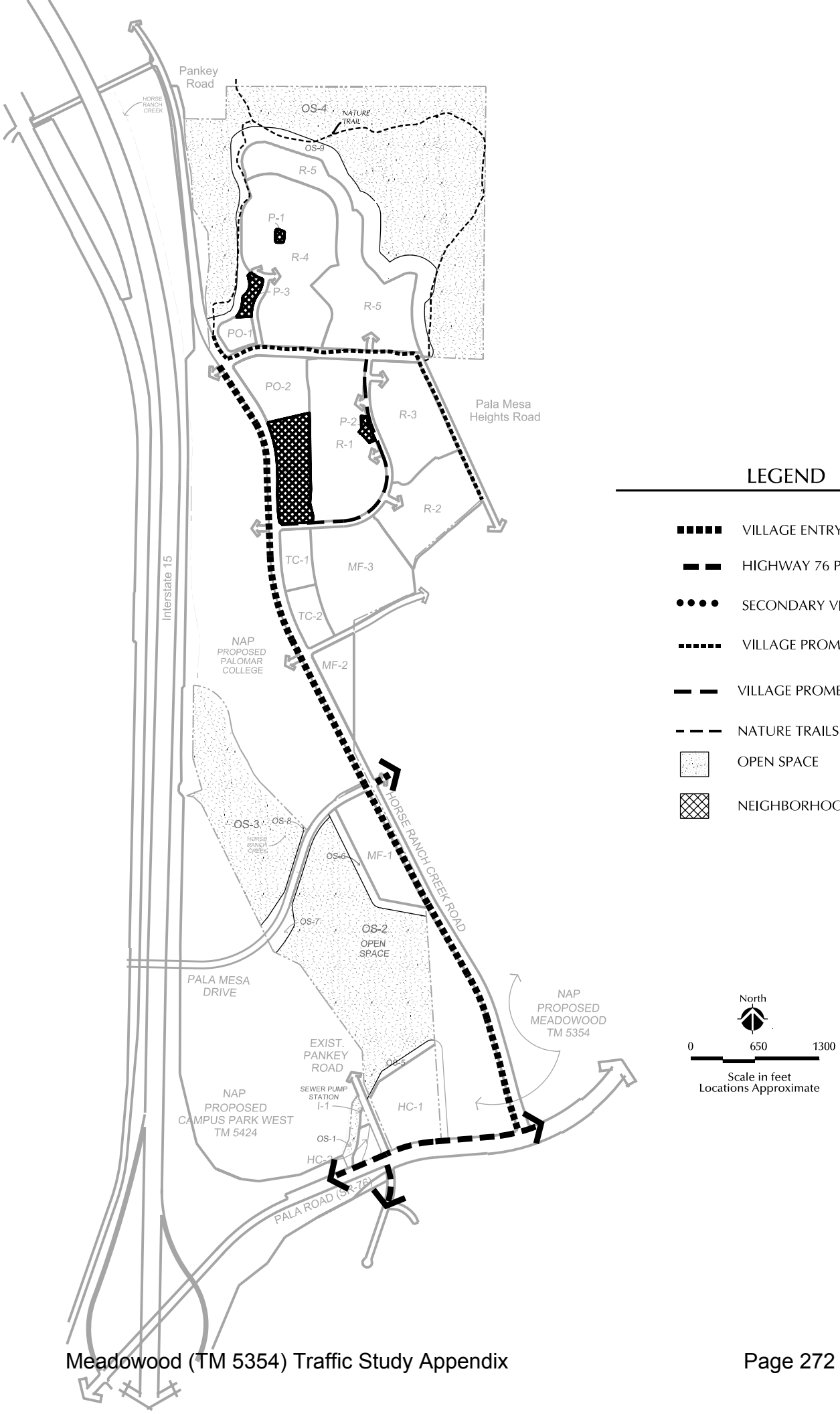


SECTION O–O
NO SCALE

1000' SCALE

RICK ENGINEERING COMPANY
5620 FRIARS ROAD
SAN DIEGO, CALIFORNIA 92110
619.291.0707
(FAX)619.291.4165


Pankey Road
HORSE RANCH CREEK
OS-4
NATURE TRAIL
OS-9
R-5
P-1
R-4
P-3
R-5
PO-1
PO-2
P-2
R-3
R-1
Pala Mesa Heights Road
R-2
TC-1
MF-3
TC-2
Interstate 15
NAP PROPOSED PALOMAR COLLEGE
MF-2
OS-3
OS-8
HORSE RANCH CREEK
OS-6
MF-1
HORSE RANCH CREEK ROAD
OS-7
OS-2
OPEN SPACE
PALA MESA DRIVE
NAP PROPOSED MEADOWOOD TM 5354
EXIST. PANKEY ROAD
OS-5
SEWER PUMP STATION
I-1
HC-1
NAP PROPOSED CAMPUS PARK WEST TM 5424
OS-1
HC-2
PALA ROAD (SR-76)
LEGEND
VILLAGE ENTRY STREET
HIGHWAY 76 PATHWAY
SECONDARY VILLAGE ENTRY
VILLAGE PROMENADE ONE
VILLAGE PROMENADE TWO
NATURE TRAILS
OPEN SPACE
NEIGHBORHOOD PARK SITE
North
0
650
1300
Scale in feet
Locations Approximate

County of San Diego

DEPARTMENT OF PUBLIC WORKS

JOHN L. SNYDER
DIRECTOR

5201 RUFFIN ROAD, SUITE D
SAN DIEGO, CALIFORNIA 92123-4310
(858) 694-2055 FAX: (858) 694-8928
Web Site: sdcdpw.org

RICHARD E. CROMPTON
ASSISTANT DIRECTOR

March 7, 2008

LOS Engineering, Inc.
Traffic and Transportation
5114 Sea Mist Court
San Diego, CA 92121

Dear Project Engineer:

CAMPUS PARK (TM 5338) AND MEADOWOOD (TM 5354) – INTERNAL CAPTURE RATE

DPW staff has reviewed the response letter prepared by LOS Engineering dated February 5, 2008 regarding the proposed internal capture rate for the Campus Park and Meadowood projects. The letter provides responses to our division's previous comment letter dated January 17, 2008. The following are our comments:

- The proposed 33% internal capture rate appears to be within a potentially acceptable range for the buildout/Year 2030 scenario assumption. Caltrans staff should review and comment on the current submittal in order to determine a final internal capture rate percentage that is acceptable to all interested parties.

- The letter states that the capture rate percentage for the near-term scenarios such as Existing plus Project and near-term cumulative would be based on a ratio between residential and commercial uses. For example, if half the commercial and all residential uses are constructed; that particular phase would incorporate half of the 'buildout 33% internal capture rate' for the near-term scenario. The consultant should provide recommended capture rate percentages for the near-term scenarios based on the proposed ratio methodology. Overall, it should be assumed that the internal capture rate percentages would start off lower for the individual projects (Existing plus project) and gradually increase over time to the buildout/Year 2030 levels.

- Non-vehicular traffic counts or surveys should also be included to document the amount of walk and bicycle trips conducted within the one-mile buffer zone.

If we can answer any questions or provide further information, please contact Nick Ortiz at (858) 874-4204.

Very truly yours,

Nael Areigat, Project Manager
Department of Public Works

NA: SH

cc: Bob Goralka/Nick Ortiz (O334); Jacob Armstrong, Caltrans (O240); Maurice Eaton, Caltrans (O240); Christine Stevenson, DPLU (O650); TM 5338, 5354 File

Windows Live™

Re: Internal Capture Rate for Meadowood and Campus Park

From: **Maurice Eaton** (maurice_eaton@dot.ca.gov)
Sent: Mon 4/14/08 9:53 AM
To: Justin Rasas (justin@losengineering.com)
Cc: Alan Ziegaus (aziegaus@swspr.com); Bruce Tabb (btabb@envdev.com); Christine Stevenson (County) (christine.stevenson@sdcounty.ca.gov); Nick Ortiz (francisco.ortiz@sdcounty.ca.gov); Jacob Armstrong (jacob_armstrong@dot.ca.gov); Jimmy Ayala (Pardee) (jimmy.ayala@pardeehomes.com); Karen Kosup (Pardee) (karen.kosup@pardeehomes.com); Nael Areigat (nael.areigat@sdcounty.ca.gov); David Davis (Winwood) (winwood-davis@msn.com)

Justin:
We are in agreement with the 30% internal trip capture rate for use in the traffic studies for the Meadowood and Campus Park projects. In agreeing to the 30% internal capture rate, it should be noted that this is a special case specifically for these two projects, and should not be considered the de facto internal capture rate or as setting precedent for other projects with impacts to State transportation facilities.

Maurice

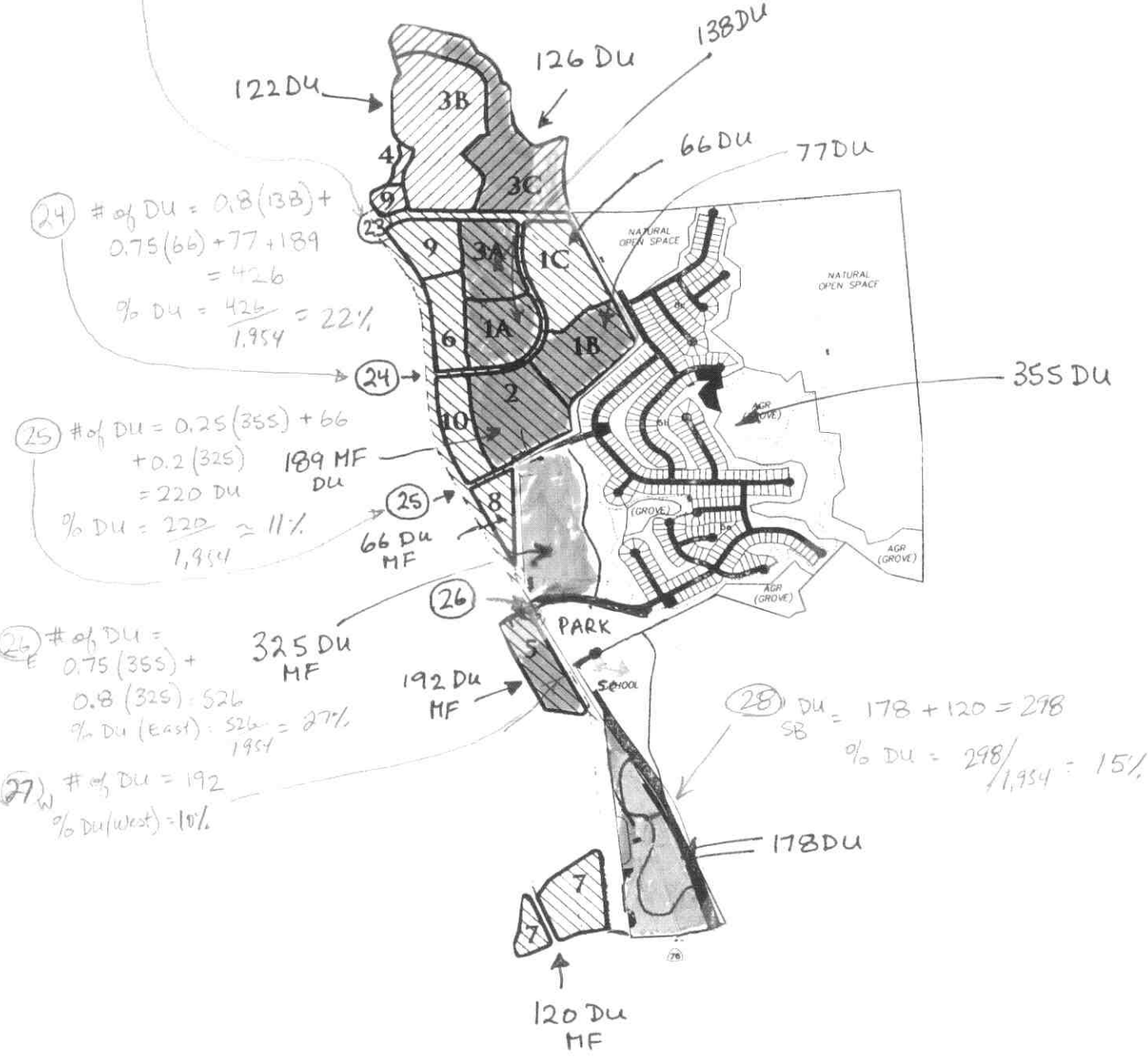
Maurice Eaton, Branch Chief
Travel Forecasting and Modeling
Caltrans District 11, MS 240
4050 Taylor Street
San Diego, CA 92110
Tel. 619-688-3137, Calnet 8-688-3137
maurice.eaton@dot.ca.gov

Justin Rasas <justin@losengineering.com>
04/14/2008 07:40 AM

To "Maurice Eaton (Caltrans)" <maurice_eaton@dot.ca.gov>
cc Alan Ziegaus <aziegaus@swspr.com>, Nick Ortiz <francisco.ortiz@sdcounty.ca.gov>, Nael Areigat <nael.areigat@sdcounty.ca.gov>, Bruce Tabb <btabb@envdev.com>, "Christine Stevenson (County)" <christine.stevenson@sdcounty.ca.gov>, "David Davis (Winwood)" <winwood-davis@msn.com>, Jacob Armstrong <jacob_armstrong@dot.ca.gov>, "Jimmy Ayala (Pardee)" <jimmy.ayala@pardeehomes.com>, "Karen Kosup (Pardee)" <karen.kosup@pardeehomes.com>

Appendix I

On-Site Elementary School Distribution Support Data



Total # of DU = 122 + 126 + 66 + 77 + 355 + 138 + 189 + 66 + 325 + 192 + 178 + 120 = 1,954

Appendix J

Horse Ranch Creek Rd: GP Update Boulevard, Road Std. Modification & Caltrans Ltr

Summary Table 1: Proposed CE Road Standards

CE Road Series	Travel Lanes	Design Speed	No.	Name for Road Classification	Road Components	Threshold Capacity (ADT)	Minimum ROW (feet)	Relationship to Public Road Standards
6.1 Expressway	6 lanes	65 mph	6.1	Expressway	Median / Grade-Separated Interchange	86,000	146’	Same as existing Expressway
6.2 Prime Arterial	6 lanes	65 mph	6.2	Prime Arterial	Median / At-Grade Interchange	50,000	122’	Same as existing Prime Arterial
4.1 Major Road Series	4 lanes	55 mph	4.1A	Major Road with Raised Median	Raised Median	33,400	98’	Same as existing Major Road
			4.1B	Major Road with Intermittent Turn Lanes	Intermittent Turn Lanes	30,800	84’ to 98’	Same as existing Collector Road
4.2 Boulevard Series	4 lanes	40 mph	4.2A	Boulevard with Raised Median	Raised Median	27,000	106’	New standard
			4.2B	Boulevard with Intermittent Turn Lane	Intermittent Turn Lanes	25,000	92’ to 106’	New standard
2.1 Community Collector Series	2 lanes	45 mph	2.1A	Community Collector with Raised Median	Raised Median	15,000	74’	Similar to existing Town Collector (except higher design speed)
			2.1B	Community Collector with Continuous Turn Lane	Continuous Turn Lane	13,500	74’	
			2.1C	Community Collector with Intermittent Turn Lane	Intermittent Turn Lanes	13,500	60’ to 74’	New standard
			2.1D	Community Collector with Improvement Options	Raised Median, Continuous Turn Lane, Intermittent Turn Lane	13,500 – 15,000	84’	Similar to existing Rural Collector
			2.1E	Community Collector	None	10,900	60’	Same as existing Light Collector

CE Road Series	Travel Lanes	Design Speed	No.	Name for Road Classification	Road Components	Threshold Capacity (ADT)	Minimum ROW (feet)	Relationship to Public Road Standards
2.2 Light Collector Series	2 lanes	40 mph	2.2A	Light Collector with Raised Median	Raised Median	13,500	78’	Similar to existing Town Collector (except wider parkway, ROW)
			2.2B	Light Collector with Continuous Turn Lane	Continuous Turn Lane	13,500	78’	
			2.2C	Light Collector with Intermittent Turn Lanes	Intermittent Turn Lanes	13,500	64’ to 78’	New Standard
			2.2D	Light Collector with Improvement Options	Raised Median, Continuous Turn Lane, Intermittent Turn Lane	13,500	88’	Similar to existing Rural Collector
			2.2E	Light Collector	None	10,900	64’	Similar to existing Rural Light Collector
			2.2F	Light Collector with Reduced Shoulder	Reduced Shoulder	8,700	52’	New Standard (Similar to previous Rural Minor Road)
2.3 Minor Collector Series	2 lanes	35 mph	2.3A	Minor Collector with Raised Median	Raised Median	8,000	82’	New Standard
			2.3B	Minor Collector with Intermittent Turn Lane	Intermittent Turn Lane	8,000	68’ to 82’	New Standard
			2.3C	Minor Collector	None	7,000	68’	New Standard

SUMMARY TABLE 2: LOCATION GUIDE

Summary Table 2 indicates where to locate different CE road classifications, and ***are listed in order of preference***. Road types with lower design speeds are recommended for Villages and for Semi-Rural or Rural Lands with physical constraints. This table should be used in conjunction with other mapping criteria prepared for GP2020. In order to develop a rational network, road mapping should consider the *predominant* topography or land use patterns, and a change in road classification should occur only at road intersections or another easily identifiable location in the network.

Lanes:	**Village / Village Core3**	**Semi-Rural**	**Rural Lands**
6 Lane	*Limited use only*: 6.1 Expressway or 6.2 Prime Arterial	6.1 Expressway or 6.2 Prime Arterial	6.1 Expressway or 6.2 Prime Arterial
4 Lane	*1st Choice*: 4.2 Boulevard *Limited use only*: 4.1 Major Road	*1st Choice*: 4.1 Major Road *Limited use only*: 4.2 Boulevard	*1st Choice*: 4.1 Major Road *Limited use only*: 4.2 Boulevard
2 Lane	*1st Choice*: 2.3 Minor Collector *2nd Choice*: 2.2 Light Collector *Limited use only*: 2.1 Community Collector	*1st Choice*: 2.2 Light Collector *2nd Choice*: 2.1 Community Collector *Limited use*: 2.3 Minor Collector	*1st Choice*: 2.1 Community Collector *Areas with Physical Constraints*: 2.2 Light Collector or 2.3 Minor Collector

NON-CIRCULATION ELEMENT ROADS

At the request of Steering Committee members, preliminary information for two non-CE roads was added to this handout. The information on Fire Access Roads is subject to further review and refinement based on input from DPW, the Fire Services Section of DPLU, and the respective fire protection districts.

Local Public Road: Local Public Roads may be shown on the regional CE Map when used to resolve road capacity problems within the CE network or when used to link CE roads together into a complete network. Local Public Roads may be shown on a community plan map when they form an important part of a community-wide or town center road network. Community plan maps can also include new local public road alignments that are being proposed to improve connectivity within a community. Standards for this road type are located in the County's "Public Road Standards".

3 Please note that passing lanes are not appropriate for a Village.

Fire Access Road: Fire/Emergency Access Roads provide a secondary egress route for the public in the event of a fire emergency. These roads can be built to local public road standards or to private road standards. Proposed criteria for designating a Fire/Emergency Access Road, as well as preliminary standards for these roads, is contained in Appendix D.

During the road network planning process, a number of fire access roads were identified by the community planning groups as candidates for Fire/Emergency access routes. Their primary objective was to identify evacuation routes in the event of a fire emergency. In several cases, proposed routes were already mapped as a CE road on the Existing General Plan but were not built to CE standards. Many of these mapped roads do not meet the preliminary road standard for a Fire/Emergency Access Road, and further discussions are needed to identify funding mechanisms to bring emergency access routes up to proposed standards.

	Type of Non-CE Road	Travel Lanes	Minimum Design Speed	Threshold Capacity (ADT)	Minimum ROW (feet)
Non-Circulation Element Roads	**Local Public Road**	2	30 mph	4,500	60’
	Fire Access Road	2	30 mph[4]	Not Applicable	40’

ROAD STANDARD DESCRIPTIONS

The pages that follow contain detailed descriptions for each road standard. Cross sections are included to illustrate the size and organization of all road components. See the Glossary of Terms for an explanation of terms used in the diagrams.

Please note that a wider Right-of-Way (ROW) will be required for bike lanes identified in the Bicycle Master Plan. Areas called Parkways contain landscaping, utilities, and trails or bicycle paths as required. Additional width may be required for trails (called “pathways” in the Trails Master Plan).

4 Private Road Standards were used to establish fire/emergency access roads’ design speed and ROW.

Latitude 33
Planning and Engineering

April 9, 2008

Nael Ariegat
County of San Diego DPW
5201 Ruffin Road, Suite B
San Diego, California

RE: **MEADOWOOD REQUEST FOR MODIFICATION TO ROAD STANDARDS**
GPA04-02, SPA04-01, R04-04, VTM5354, S04-005, S04-006, S04-007

Dear Nael;

This letter is in response to your letter dated February 15, 2008 and the meeting held on April 2, 2008 regarding the two requests for modifications that were originally submitted in November 2007. The below answers correspond to DPWs' comments included in the February 15th DPW Letter. The third Modification Request that DPW required at the April 2nd meeting regarding stopping sight distance will be submitted separately.

Horse Ranch Creek Road – Use of Boulevard Design instead of Major Road

1. ***The Design Modification Request should include a graphic showing the proposed road, its length and configuration.***
   The attachment now labeled as "Attachment #1" has been improved to show Horse Ranch Creek Road, its length and the configuration.

2. ***The topography of the area, length of the proposed road, the distances between intersections and the location of future warranted traffic signals should be identified.***
   Attachment #2 has been added with the topography, proposed street grades, distances between intersections and driveways and the locations of warranted traffic signals are identified.

3. ***An explanation of why the Boulevard standard is more appropriate than a Major Road should be provided.***
   Attachment #3 is included to show the section of a "4-Lane Major Road", which is the current DPW Standard. Attachment #4 shows the section of a "4-Lane Boulevard With Raised Median", which is the proposed standard in the County's General Plan Update. The reason why the Boulevard standard is more appropriate is that this entire quadrant of development is based upon the County's General Plan Update's concept that these developments are centered around a transit node. This transit node is planned just west of Horse Ranch Creek Road in the middle of the development (see Attachment #1). The main principal for a transit node to successfully function is

4933 Paramount Drive, Second Floor, San Diego, CA 92123
(858) 751-0633 • Fax (858) 751-0634 • email: mailbox@latitude33.com

to have effortless pedestrian access to the transit node. The widened parkways will encourage non-vehicular travel by helping people feel more comfortable away from traffic while biking or walking to the transit node. This will improve the success of the transit node and minimize vehicle trips in the area.

4. ***A discussion should be provided as to why the expected travel speed would be 40 mph should be provided.***
   On page 15 of the Proposed GP2020 Circulation Element Road Standards it states that the design speed of the 4.2A – Boulevard with Raised Median is 40 mph. The reason why the reduced travel speed of the Boulevard (40 mph) is appropriate verses the design speed of a Major Road (55 mph) is the proposed uses in this area will be destinations and the road will be project-serving in nature. The road will not function as a pass through or commuter road because it does not provide an alternative route for external traffic to freeway ramps. There are no ramps at Stewart Canyon and the I-15. With a transit node, a college campus, a commercial area, a park and an elementary school a large amount of residents will stay in this area during a normal day and the amount of exterior trips will be limited. See Attachment #1 for some of the proposed uses. When the Campus Park, Campus Park West and Palomar College are built out, 6 signals will meet warrants on Horse Ranch Creek Road.

5. ***A discussion of the hardship that would result from constructing a Major Road should be provided. Since this is a new project reliance on increases noise to future homes may not be sufficient.***
   There are three hardships that would result from requiring Horse Ranch Creek Road as a Major Road. First, it would unnecessarily impact the future planned land uses with increased noise. These land uses are consistent with the County's General Plan Update. The planned sensitive receptors such as the elementary school, parks, residences and college campus along Horse Ranch Creek Road would be negatively impacted. Secondly, the project would be required to mitigate for the noise from traffic traveling 55 mph along Horse Ranch Creek Ranch. The cost to mitigate noise with walls and construction materials is very expensive. Lastly, the visual impact of high walls along Horse Ranch Creek Road would be detrimental. High walls along the main corridor into the development is certainly contrary to the desired appearance and would go against the principals of a transit node and pedestrian-friendly community. Therefore, the three hardships are compromising the proposed land uses, the cost of noise mitigation and the unsightly aesthetics of high noise walls.

6. ***Sight Distances per Major Road standards of 550 feet should be evaluated and considered at intersections and driveways if curvature based upon the Boulevard Standards is provided.***
   There are 8 intersections and two driveways that access an easterly farm road off of Horse Ranch Creek Road. As shown in Attachment #5 all the intersections and driveways have the adequate 550 feet of sight distance in each direction.

200-Foot Residential Driveway Spacing

1. ***The locations where 200 foot residential driveway spacing are being requested should be shown.***
   Attachment #6 shows that the 355 Single-Family Lots proposed have less than 200-foot residential driveway spacing.

2. ***The roads where the 200 foot driveway spacing are being requested should be identified and the classification and anticipated ADT specified.***
   Attachment #7 lists the streets in a chart that have less than 200 feet of separation. The chart also identifies the classification and widths of each road. The anticipated ADT's are shown on each road in the graphic.

3. ***Shared driveways should be considered.***
   Pardee considered using shared driveways, but they were not utilized. In most locations shared driveways are not feasible since the individual lots are on steep streets and the pad/lot elevations splits to follow the street grade. If shared driveways were utilized both homes would need to be on a level larger pad. Larger level pads would increase cuts and fills on both sides and then the pads would not follow the street grades. All driveway and utility locations and clearances are designed to meet the County Regional Standard Drawings and Public Works Standards. Attachment #8 details typical driveway separations in the single-family area.

4. ***Adequate sight distance should be provided at all of the driveways***
   Attachment #9 shades all the single-family driveway openings that do not have 200 feet of sight distance. The non-shaded lots do meet the 200 foot sight distance requirement. There are 61 of 355 that have less than 200 feet. For the lots with less than 200 feet of sight distance there will be a sight distance easement recorded to ensure that the 200 feet occurs further into the driveway and that the property owners are informed about the situation. All of the roads meet the minimum radii of the DPW Road Standards.

For any questions on the above explanations or on the attached graphics, please contact John Eardensohn from Latitude 33 Planning and Engineering at (858) 751-0633 or by email at john.eardensohn@latitude33.com.

Sincerely,

Jimmy Ayala
Pardee Homes

DEPARTMENT OF PUBLIC WORKS

Request for a Modification to a Road Standard and/or to Project Conditions

Project Number: VTM 5354 Date of Request: 11/09/07 and 4/9/08

Project Location: Pala Road east of Interstate 15

Thos. Bros. Map/Grid: 1028, 1029 APN: 108-122-03,12

Requestor Name: Latitude 33 Planning and Engineering Telephone: (858) 751-0633

Address: 4933 Paramount Drive, Second Floor, San Diego, CA 92123

Requested Modification (attach engineering sketches showing existing layout, details and notes):
Deviation from county circulation element standard for 4 lane major (Attachment #3) of the County of San Diego Department of Public Works Public Road Standards for the proposed Horse Ranch Creek Road to utilize the proposed "4 Lane Boulevard with raised median" Road Standard (Attachment #4) from the pending GP2020 plan update. Design speed would be reduced from 55 mph to 40 mph consistent with the proposed Boulevard Standard.

Reason for requested Modification (provide attachment if addition space is required):
The reason why the Boulevard standard is more appropriate is that this entire quadrant of development is based upon the County's General Plan Update's concept that these developments are centered around a transit node. This transit node is planned just west of Horse Ranch Creek Road in the middle of the development (see Attachment #1). The main principal for a transit node to successfully function is to have effortless pedestrian access to the transit node. The widened parkways will encourage non-vehicular travel by helping people feel more comfortable away from traffic while biking or walking to the transit node. This will improve the success of the transit node and minimize vehicle trips in the area.

List alternatives that could mitigate the requested Modification (attach engineering sketches showing proposed layouts, details and notes.): Utilizing the 4 Lane Major Street will comprise the planned uses in the area, cause increased noise mitigation measures such as noise walls that may increase as much as an additional four (4) feet in height.

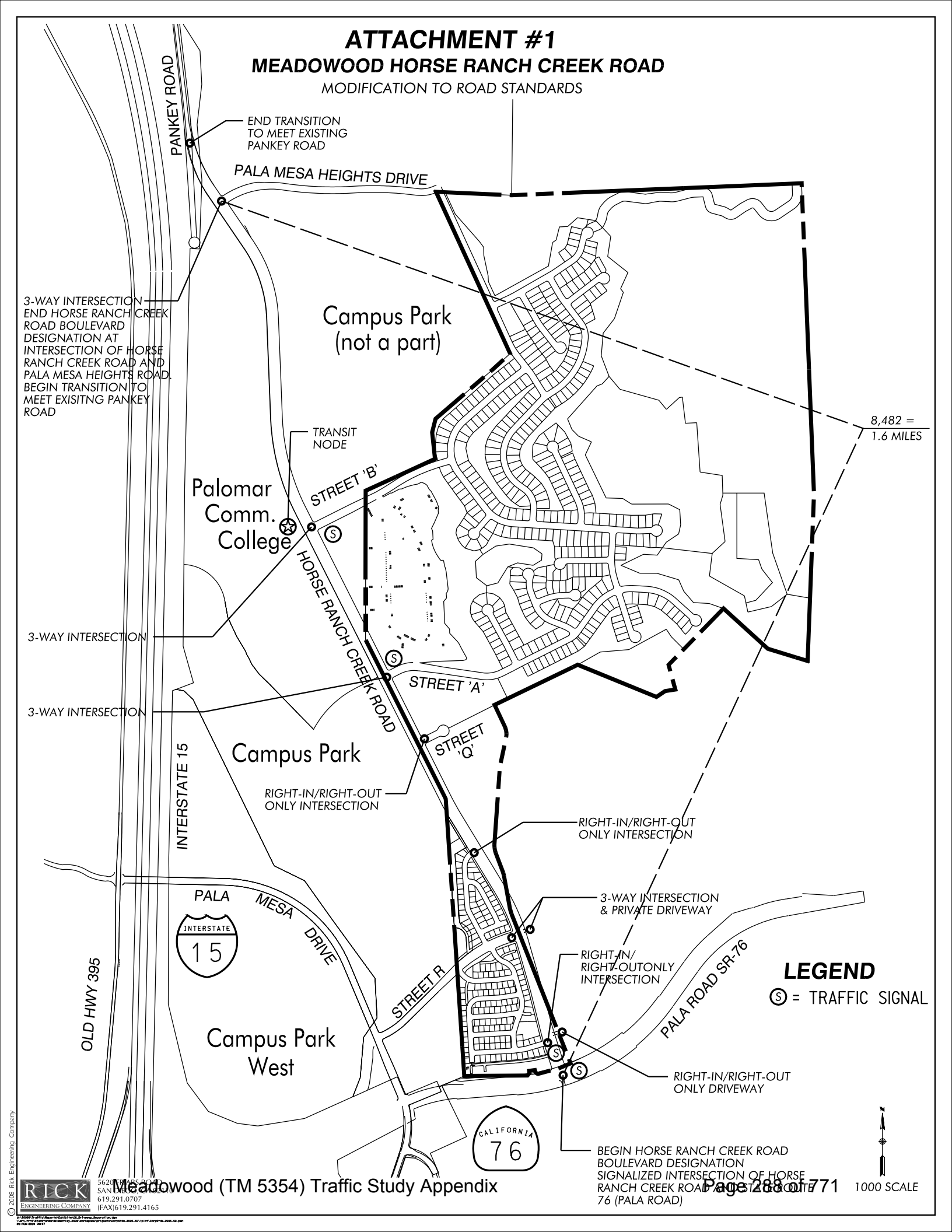
Describe the hardship(s) to the property owner(s) and/or neighbor(s) if the request is not approved (see note 3 on reverse): There are three hardships that would result from requiring Horse Ranch Creek Road as a Major Road. First, it would unnecessarily impact the future planned land uses with increased noise. These land uses are consistent with the County's General Plan Update. The planned sensitive receptors such as the elementary school, parks, residences and college campus along Horse Ranch Creek Road would be negatively impacted. Secondly, the project would be required to mitigate for the noise from traffic traveling 55 mph along Horse Ranch Creek Ranch. The cost to mitigate noise with walls and construction materials is very expensive. Lastly, the visual impact of high walls along Horse Ranch Creek Road would be detrimental. High walls along the main corridor into the development is certainly contrary to the desired appearance and would go against the principals of a transit node and pedestrian-friendly community. Therefore, the three hardships are compromising the proposed land uses, the cost of noise mitigation and the unsightly aesthetics of high noise walls

Provide Design and Cost Estimate for meeting the Condition (see note 3 on reverse):
Additional costs for noise walls
6,400 LF Wall * 4 FT Height = $25,600 SF * $20.00/SF = $512,000

ATTACHMENT #1

MEADOWOOD HORSE RANCH CREEK ROAD

MODIFICATION TO ROAD STANDARDS

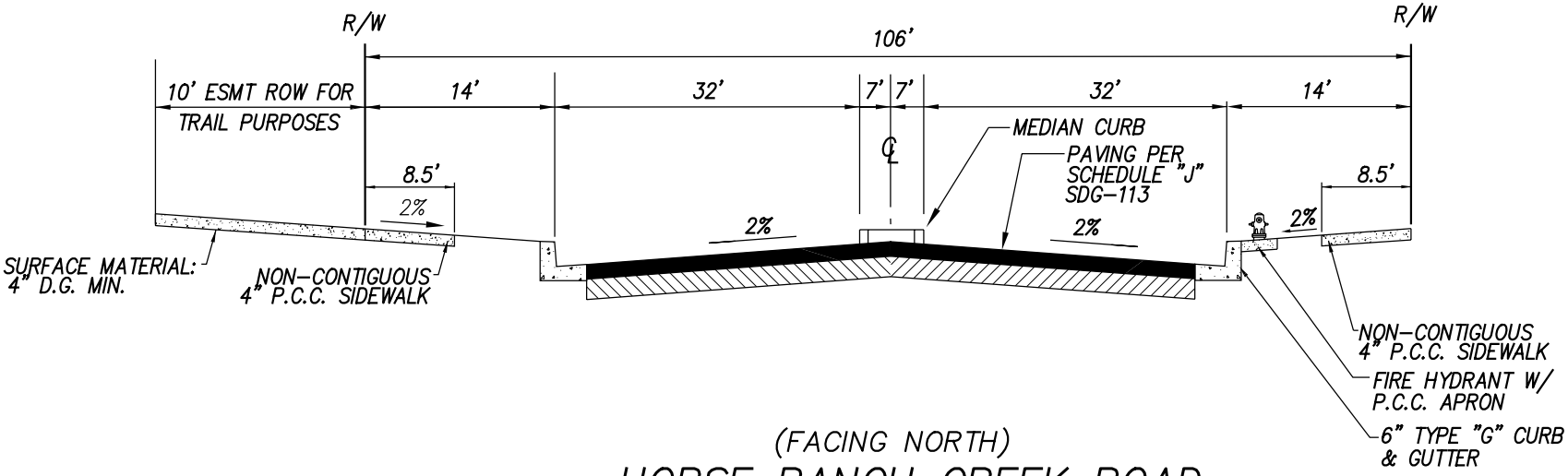


RICK ENGINEERING COMPANY
5620 FRIARS ROAD
SAN DIEGO, CA 92110
619.291.0707
(FAX)619.291.4165

ATTACHMENT #4

MEADOWOOD HORSE RANCH CREEK ROAD

4 LANE BOULEVARD WITH RAISED MEDIAN



(FACING NORTH)

HORSE RANCH CREEK ROAD

NO SCALE

4 LANE BOULEVARD WITH RAISED MEDIAN

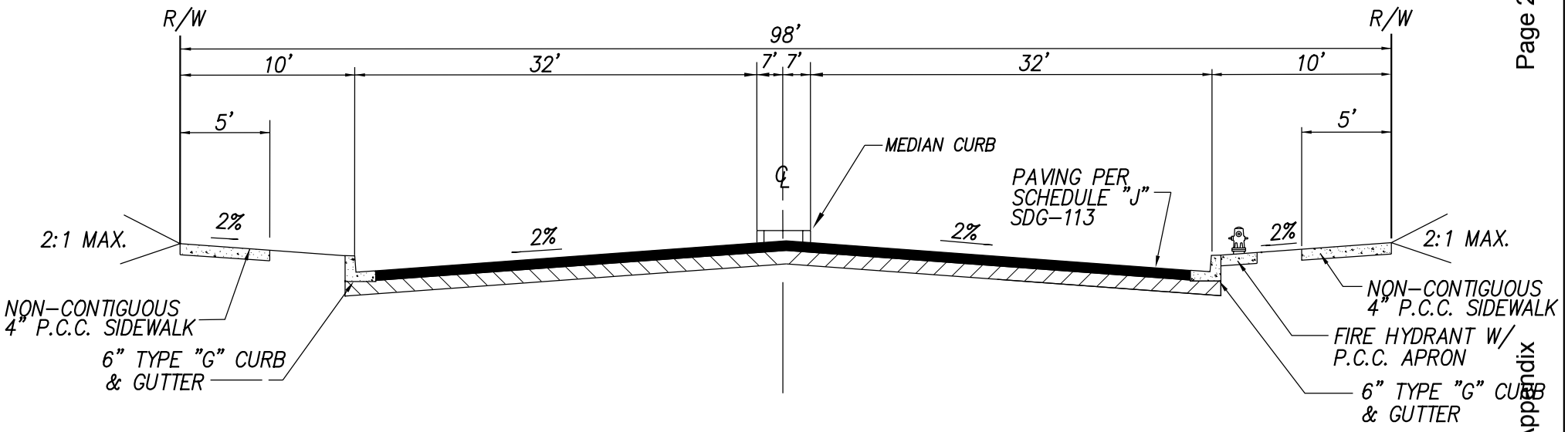
DESIGN CRITERIA:
40 MPH DESIGN SPEED, CONTROLLED ACCESS WITH SIGNALIZED INTERSECTIONS AND RAISED MEDIAN.
MAXIMUM ADT: 27,000 ADT PER PROPOSED GP
2020 PLAN

RICK ENGINEERING COMPANY
5620 FRIARS ROAD
SAN DIEGO, CA 92110
619.291.0707
(FAX)619.291.4165

ATTACHMENT #3

MEADOWOOD HORSE RANCH CREEK ROAD

4 LANE MAJOR



(FACING NORTH)

HORSE RANCH CREEK ROAD

NO SCALE

4 LANE MAJOR

DESIGN CRITERIA:
10 MPH DESIGN SPEED, CONMTROLLED ACCESS WITH
SIGNALIZED INTERSECTIONS AND RAISED MEDIAN.
MAXIMUM ADT: 27,000 ADT PER PROPOSED GP
2020 PLAN

RICK ENGINEERING COMPANY
5620 FRIARS ROAD
SAN DIEGO, CA 92110
619.291.0707
(FAX)619.291.4165

DEPARTMENT OF TRANSPORTATION
DISTRICT 11
4050 TAYLOR STREET, M.S. 240
SAN DIEGO, CA 92110
PHONE (619) 688-6003
FAX (619) 688-4299
TTY (619) 688-6670

Flex your power!
Be energy efficient!

January 11, 2007

11-SD-76
PM 17.86
SR-76 Access Spacing

Mr. Andy Schlaefli
Urban Systems Associates, Inc.
4540 Kearny Villa Road
Suite 106
San Diego , CA 92123

Dear Mr. Schlaefli:

The California Department of Transportation (Caltrans) has reviewed Latitude 33's December 1, 2006 correspondence regarding their State Route 76 (SR-76)/Horse Ranch Creek Road alternative intersection analysis for access to the proposed Meadowood development. As you are aware, Caltrans requested that further studies be conducted to determine if the proposed Horse Ranch Creek Road could be moved farther to the east so as to allow additional spacing from existing Pankey Road. Therefore, based on the data and information presented in the Meadowood SR-76 Alternative Analysis, Caltrans agrees with the conclusion of this study and that relocating the Horse Ranch Creek Road intersection farther to the east would result in unacceptable impacts.

It should be noted that for specific access locations for the Meadowood, Campus Park and Campus Park West developments, please refer to the project study report and project report for the widening and realignment of SR-76 east of Interstate 15.

If you require further information or have any questions, please contact me.

Sincerely,

Al Cox, Chief
Development Review Branch

Cc: Bill Figge	Caltrans
Joe Hull	Caltrans
Michael Powers	Caltrans
Bob Corbin	Caltrans
Sam Amen	Caltrans
Trent Clark	Caltrans
Nick Ortiz	County of San Diego, DPW
Jerry Moriarty	County of San Diego, DPW
John Eardensohn	Latitude 33
Karen Kosup	Pardee Homes

Appendix K

Existing + Project Intersection Level of Service Calculations

AM Existing + Project
1: Pala Rd (SR-76) & Via Monserate

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	4	557	1027	22	70	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	4	586	1081	23	74	26
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1104				1687	1093
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1104				1687	1093
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				28	90
cM capacity (veh/h)	632				102	261

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	4	586	1104	100
Volume Left	4	0	0	74
Volume Right	0	0	23	26
cSH	632	1700	1700	122
Volume to Capacity	0.01	0.34	0.65	0.82
Queue Length 95th (ft)	1	0	0	123
Control Delay (s)	10.7	0.0	0.0	106.2
Lane LOS	B			F
Approach Delay (s)	0.1		0.0	106.2
Approach LOS				F

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

LOS Engineering

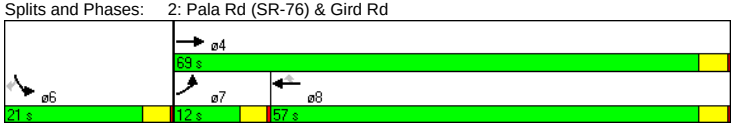
AM Existing + Project
2: Pala Rd (SR-76) & Gird Rd

Timings

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	75	605	829	29	59	103
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Detector Phases	7	4	8	8	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	69.0	57.0	57.0	21.0	21.0
Total Split (%)	13.3%	76.7%	63.3%	63.3%	23.3%	23.3%
Yellow Time (s)	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
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	None	None	None	Min	Min
Act Effct Green (s)	7.6	36.7	31.2	31.2	8.9	8.9
Actuated g/C Ratio	0.13	0.66	0.56	0.56	0.16	0.16
v/c Ratio	0.39	0.52	0.84	0.04	0.25	0.34
Control Delay	37.4	5.4	18.7	5.5	31.5	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.4	5.4	18.7	5.5	31.5	10.9
LOS	D	A	B	A	C	B
Approach Delay		8.9	18.3		18.4	
Approach LOS		A	B		B	

Intersection Summary			
Cycle Length: 90			
Actuated Cycle Length: 55.7			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 14.5		Intersection LOS: B	
Intersection Capacity Utilization 61.9%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Pala Rd (SR-76) & Gird Rd



LOS Engineering

Queues

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1700	1900	1900	1700	1700	1700
Storage Length (ft)	450			20	0	180
Storage Lanes	1			1	1	1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0
Turning Speed (mph)	15			9	15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1583	1863	1863	1417	1583	1417
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1583	1863	1863	1417	1583	1417
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				6		108
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30	30		30	
Link Distance (ft)		3191	8309		1271	
Travel Time (s)		72.5	188.8		28.9	
Volume (vph)	75	605	829	29	59	103
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	79	637	873	31	62	108
Lane Group Flow (vph)	79	637	873	31	62	108
v/c Ratio	0.39	0.52	0.84	0.04	0.25	0.34
Control Delay	37.4	5.4	18.7	5.5	31.5	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.4	5.4	18.7	5.5	31.5	10.9
Queue Length 50th (ft)	28	66	249	4	22	0
Queue Length 95th (ft)	#93	143	456	15	66	44
Internal Link Dist (ft)		3111	8229		1191	
Turn Bay Length (ft)	450			20		180
Base Capacity (vph)	231	1494	1308	997	474	500
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.43	0.67	0.03	0.13	0.22

Intersection Summary	
Area Type:	Other

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1700	1900	1900	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1583	1863	1863	1417	1583	1417
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1583	1863	1863	1417	1583	1417
Volume (vph)	75	605	829	29	59	103
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	79	637	873	31	62	108
RTOR Reduction (vph)	0	0	0	3	0	91
Lane Group Flow (vph)	79	637	873	28	62	17
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	3.7	38.9	31.2	31.2	8.9	8.9
Effective Green, g (s)	3.7	38.9	31.2	31.2	8.9	8.9
Actuated g/C Ratio	0.07	0.70	0.56	0.56	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	105	1299	1042	792	252	226
v/s Ratio Prot	c0.05	0.34	c0.47		c0.04	
v/s Ratio Perm				0.02		0.01
v/c Ratio	0.75	0.49	0.84	0.04	0.25	0.08
Uniform Delay, d1	25.6	3.9	10.2	5.5	20.5	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	25.8	0.3	6.0	0.0	0.5	0.1
Delay (s)	51.4	4.2	16.2	5.6	21.0	20.1
Level of Service	D	A	B	A	C	C
Approach Delay (s)		9.4	15.8		20.4	
Approach LOS		A	B		C	

Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	55.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

AM Existing + Project
3: Pala Rd (SR-76) & Sage Rd — HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	1	619	893	1	5	10
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1	652	940	1	5	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	941				1594	941
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	941				1594	941
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				96	97
cM capacity (veh/h)	729				117	319

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	653	941	16
Volume Left	1	0	5
Volume Right	0	1	11
cSH	729	1700	203
Volume to Capacity	0.00	0.55	0.08
Queue Length 95th (ft)	0	0	6
Control Delay (s)	0.0	0.0	24.2
Lane LOS	A		C
Approach Delay (s)	0.0	0.0	24.2
Approach LOS			C

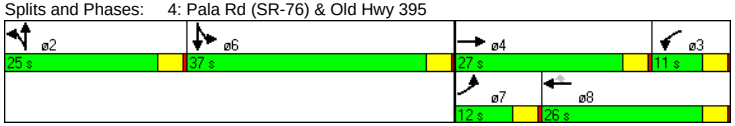
Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

AM Existing + Project
4: Pala Rd (SR-76) & Old Hwy 395 — Timings

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT
Lane Configurations							
Volume (vph)	62	537	51	558	76	74	90
Turn Type	Prot		Prot		Perm		
Protected Phases	7	4	3	8		2	6
Permitted Phases					8		
Detector Phases	7	4	3	8	8	2	6
Minimum Initial (s)	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	20.0	20.0
Total Split (s)	12.0	27.0	11.0	26.0	26.0	25.0	37.0
Total Split (%)	12.0%	27.0%	11.0%	26.0%	26.0%	25.0%	37.0%
Yellow Time (s)	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
Lead/Lag	Lead	Lead	Lag	Lag	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	Min	Min
Act Effct Green (s)	7.5	18.3	7.0	17.8	17.8	14.8	22.8
Actuated g/C Ratio	0.09	0.24	0.09	0.24	0.24	0.20	0.30
v/c Ratio	0.43	0.76	0.39	0.70	0.20	0.69	0.82
Control Delay	50.8	35.5	50.7	34.9	9.3	41.1	39.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	35.5	50.7	34.9	9.3	41.1	39.1
LOS	D	D	D	C	A	D	D
Approach Delay		36.9		33.2		41.1	39.1
Approach LOS		D		C		D	D

Intersection Summary			
Cycle Length: 100			
Actuated Cycle Length: 75.2			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 36.6		Intersection LOS: D	
Intersection Capacity Utilization 66.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Pala Rd (SR-76) & Old Hwy 395



AM Existing + Project
4: Pala Rd (SR-76) & Old Hwy 395 — Queues

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1700	1700	1900	1700	1700	1900	1700	1700	1900	1700
Storage Length (ft)	330		0	150		150	0		0	0		0
Storage Lanes	1		0	1		1	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
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981				0.850		0.963			0.976	
Flt Protected	0.950			0.950				0.980			0.971	
Satd. Flow (prot)	1583	3472	0	1583	3539	1417	0	1758	0	0	1765	0
Flt Permitted	0.950			0.950				0.980			0.971	
Satd. Flow (perm)	1583	3472	0	1583	3539	1417	0	1758	0	0	1765	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				80		17			12	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		652			462			899			4464	
Travel Time (s)		14.8			10.5			20.4			101.5	
Volume (vph)	62	537	77	51	558	76	96	74	65	255	90	76
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	65	565	81	54	587	80	101	78	68	268	95	80
Lane Group Flow (vph)	65	646	0	54	587	80	0	247	0	0	443	0
v/c Ratio	0.43	0.76		0.39	0.70	0.20		0.69			0.82	
Control Delay	50.8	35.5		50.7	34.9	9.3		41.1			39.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay	50.8	35.5		50.7	34.9	9.3		41.1			39.1	
Queue Length 50th (ft)	36	172		30	160	0		123			225	
Queue Length 95th (ft)	#90	267		#78	247	37		220			364	
Internal Link Dist (ft)		572			382			819			4384	
Turn Bay Length (ft)	330			150		150						
Base Capacity (vph)	172	1090		153	1064	482		505			727	
Starvation Cap Reductn	0	0		0	0	0		0			0	
Spillback Cap Reductn	0	0		0	0	0		0			0	
Storage Cap Reductn	0	0		0	0	0		0			0	
Reduced v/c Ratio	0.38	0.59		0.35	0.55	0.17		0.49			0.61	

Intersection Summary
Area Type: Other
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

LOS Engineering

AM Existing + Project
4: Pala Rd (SR-76) & Old Hwy 395 — HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1700	1700	1900	1700	1700	1900	1700	1700	1900	1700
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00			1.00	
Frt	1.00	0.98		1.00	1.00	0.85		0.96			0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98			0.97	
Satd. Flow (prot)	1583	3473		1583	3539	1417		1758			1764	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98			0.97	
Satd. Flow (perm)	1583	3473		1583	3539	1417		1758			1764	
Volume (vph)	62	537	77	51	558	76	96	74	65	255	90	76
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	65	565	81	54	587	80	101	78	68	268	95	80
RTOR Reduction (vph)	0	11	0	0	0	61	0	14	0	0	8	0
Lane Group Flow (vph)	65	635	0	54	587	19	0	233	0	0	435	0
Turn Type	Prot			Prot		Perm	Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	3.7	18.3		3.3	17.9	17.9		14.7			22.8	
Effective Green, g (s)	3.7	18.3		3.3	17.9	17.9		14.7			22.8	
Actuated g/C Ratio	0.05	0.24		0.04	0.24	0.24		0.20			0.30	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	78	846		70	844	338		344			536	
v/s Ratio Prot	0.04	c0.18		0.03	c0.17			c0.13			c0.25	
v/s Ratio Perm						0.01						
v/c Ratio	0.83	0.75		0.77	0.70	0.06		0.68			0.81	
Uniform Delay, d1	35.4	26.3		35.5	26.1	22.1		28.0			24.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	50.3	3.8		39.9	2.5	0.1		5.2			9.1	
Delay (s)	85.7	30.1		75.4	28.6	22.2		33.2			33.2	
Level of Service	F	C		E	C	C		C			C	
Approach Delay (s)		35.1			31.4			33.2			33.2	
Approach LOS		D			C			C			C	

Intersection Summary				
HCM Average Control Delay	33.2	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	75.1	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	66.8%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

LOS Engineering

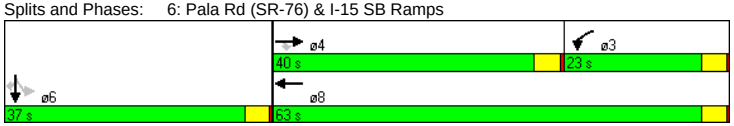
AM Existing + Project
6: Pala Rd (SR-76) & I-15 SB Ramps

Timings

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Configurations						
Volume (vph)	482	297	190	256	1	551
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	6	
Permitted Phases		4				6
Detector Phases	4	4	3	8	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	8.0	20.0	20.0	20.0
Total Split (s)	40.0	40.0	23.0	63.0	37.0	37.0
Total Split (%)	40.0%	40.0%	23.0%	63.0%	37.0%	37.0%
Yellow Time (s)	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
Lead/Lag	Lead	Lead	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Min	C-Min
Act Effct Green (s)	32.2	32.2	16.4	52.6	39.4	39.4
Actuated g/C Ratio	0.32	0.32	0.16	0.53	0.39	0.39
v/c Ratio	0.84	0.47	0.77	0.27	0.10	0.64
Control Delay	44.4	4.8	50.6	16.2	24.2	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	4.8	50.6	16.2	24.2	6.3
LOS	D	A	D	B	C	A
Approach Delay	29.3			30.9	8.2	
Approach LOS	C			C	A	

Intersection Summary			
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 40 (40%), Referenced to phase 2: and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 22.6		Intersection LOS: C	
Intersection Capacity Utilization 59.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 6: Pala Rd (SR-76) & I-15 SB Ramps



LOS Engineering

AM Existing + Project
6: Pala Rd (SR-76) & I-15 SB Ramps

Queues

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1700	1700	1900	1700	1700	1900	1700	1700	1900	1700
Storage Length (ft)	0		0	500		0	0		0	0		900
Storage Lanes	0		1	1		0	0		0	0		1
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
Leading Detector (ft)		50	50	50	50					50	50	50
Trailing Detector (ft)		0	0	0	0					0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850									0.850
Flt Protected				0.950							0.953	
Satd. Flow (prot)	0	1863	1417	1583	1863	0	0	0	0	0	1775	1417
Flt Permitted				0.950							0.953	
Satd. Flow (perm)	0	1863	1417	1583	1863	0	0	0	0	0	1775	1417
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			313									580
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		654			1271			961			1209	
Travel Time (s)		14.9			28.9			21.8			27.5	
Volume (vph)	0	482	297	190	256	0	0	0	0	66	1	551
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	507	313	200	269	0	0	0	0	69	1	580
Lane Group Flow (vph)	0	507	313	200	269	0	0	0	0	0	70	580
v/c Ratio		0.84	0.47	0.77	0.27						0.10	0.64
Control Delay		44.4	4.8	50.6	16.2						24.2	6.3
Queue Delay		0.0	0.0	0.0	0.0						0.0	0.0
Total Delay		44.4	4.8	50.6	16.2						24.2	6.3
Queue Length 50th (ft)		299	0	115	101						27	0
Queue Length 95th (ft)		373	51	m140	m0						69	99
Internal Link Dist (ft)		574			1191			881			1129	
Turn Bay Length (ft)				500								900
Base Capacity (vph)		695	725	308	1131						729	924
Starvation Cap Reductn		0	0	0	0						0	0
Spillback Cap Reductn		0	0	0	0						0	0
Storage Cap Reductn		0	0	0	0						0	0
Reduced v/c Ratio		0.73	0.43	0.65	0.24						0.10	0.63

Intersection Summary	
Area Type:	Other
m	Volume for 95th percentile queue is metered by upstream signal.

LOS Engineering

AM Existing + Project
6: Pala Rd (SR-76) & I-15 SB Ramps — HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1700	1700	1900	1700	1700	1900	1700	1700	1900	1700
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		1863	1417	1583	1863						1775	1417
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		1863	1417	1583	1863						1775	1417
Volume (vph)	0	482	297	190	256	0	0	0	0	66	1	551
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	507	313	200	269	0	0	0	0	69	1	580
RTOR Reduction (vph)	0	0	212	0	0	0	0	0	0	0	0	351
Lane Group Flow (vph)	0	507	101	200	269	0	0	0	0	0	70	229
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		4		3	8						6	
Permitted Phases			4							6		6
Actuated Green, G (s)		32.2	32.2	16.4	52.6						39.4	39.4
Effective Green, g (s)		32.2	32.2	16.4	52.6						39.4	39.4
Actuated g/C Ratio		0.32	0.32	0.16	0.53						0.39	0.39
Clearance Time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		600	456	260	980						699	558
v/s Ratio Prot		c0.27		c0.13	0.14							
v/s Ratio Perm			0.07								0.04	c0.16
v/c Ratio		0.84	0.22	0.77	0.27						0.10	0.41
Uniform Delay, d1		31.6	24.7	40.0	13.1						19.1	21.9
Progression Factor		1.00	1.00	0.89	1.32						1.00	1.00
Incremental Delay, d2		10.6	0.2	10.0	0.1						0.3	2.2
Delay (s)		42.1	25.0	45.5	17.4						19.4	24.1
Level of Service		D	C	D	B						B	C
Approach Delay (s)		35.6			29.4			0.0			23.6	
Approach LOS		D			C			A			C	

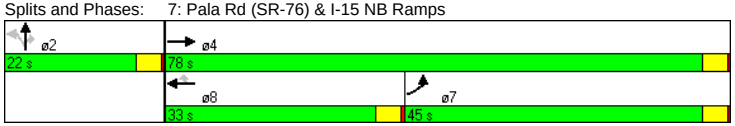
Intersection Summary				
HCM Average Control Delay	30.1	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.64			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	59.2%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

AM Existing + Project
7: Pala Rd (SR-76) & I-15 NB Ramps — Timings

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations						
Volume (vph)	405	216	317	95	0	161
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		2	
Permitted Phases				8		2
Detector Phases	7	4	8	8	2	2
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	45.0	78.0	33.0	33.0	22.0	22.0
Total Split (%)	45.0%	78.0%	33.0%	33.0%	22.0%	22.0%
Yellow Time (s)	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
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	None	None	None	C-Min	C-Min
Act Effct Green (s)	31.4	57.5	22.1	22.1	34.5	34.5
Actuated g/C Ratio	0.31	0.58	0.22	0.22	0.34	0.34
v/c Ratio	0.86	0.21	0.81	0.29	0.23	0.28
Control Delay	33.4	3.3	52.3	19.4	29.4	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	3.3	52.3	19.4	29.4	6.8
LOS	C	A	D	B	C	A
Approach Delay		22.9	44.7		17.1	
Approach LOS		C	D		B	

Intersection Summary		
Cycle Length: 100		
Actuated Cycle Length: 100		
Offset: 56 (56%), Referenced to phase 2:NBTL and 6:, Start of Green		
Natural Cycle: 65		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.86		
Intersection Signal Delay: 28.4	Intersection LOS: C	
Intersection Capacity Utilization 59.2%	ICU Level of Service B	
Analysis Period (min) 15		

Splits and Phases: 7: Pala Rd (SR-76) & I-15 NB Ramps



AM Existing + Project
7: Pala Rd (SR-76) & I-15 NB Ramps

Queues

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1700	1700	1900	1700	1700	1900	1700	1700	1900	1700
Storage Length (ft)	450		0	0		50	0		800	0		0
Storage Lanes	1		0	0		1	0		1	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
Leading Detector (ft)	50	50			50	50	50	50	50			
Trailing Detector (ft)	0	0			0	0	0	0	0			
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950							0.950				
Satd. Flow (prot)	1583	1863	0	0	1863	1417	0	1770	1417	0	0	0
Flt Permitted	0.950							0.950				
Satd. Flow (perm)	1583	1863	0	0	1863	1417	0	1770	1417	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						46			169			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1271			2232			991			1241	
Travel Time (s)		28.9			50.7			22.5			28.2	
Volume (vph)	405	216	0	0	317	95	134	0	161	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	426	227	0	0	334	100	141	0	169	0	0	0
Lane Group Flow (vph)	426	227	0	0	334	100	0	141	169	0	0	0
v/c Ratio	0.86	0.21			0.81	0.29		0.23	0.28			
Control Delay	33.4	3.3			52.3	19.4		29.4	6.8			
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			
Total Delay	33.4	3.3			52.3	19.4		29.4	6.8			
Queue Length 50th (ft)	292	22			203	28		64	0			
Queue Length 95th (ft)	m334	m17			278	67		141	56			
Internal Link Dist (ft)		1191			2152			911			1161	
Turn Bay Length (ft)	450					50			800			
Base Capacity (vph)	649	1379			540	444		611	600			
Starvation Cap Reductn	0	0			0	0		0	0			
Spillback Cap Reductn	0	0			0	0		0	0			
Storage Cap Reductn	0	0			0	0		0	0			
Reduced v/c Ratio	0.66	0.16			0.62	0.23		0.23	0.28			

Intersection Summary	
Area Type:	Other

m Volume for 95th percentile queue is metered by upstream signal.

LOS Engineering

AM Existing + Project
7: Pala Rd (SR-76) & I-15 NB Ramps

HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1700	1700	1900	1700	1700	1900	1700	1700	1900	1700
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1583	1863			1863	1417		1770	1417			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1583	1863			1863	1417		1770	1417			
Volume (vph)	405	216	0	0	317	95	134	0	161	0	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	426	227	0	0	334	100	141	0	169	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	36	0	0	111	0	0	0
Lane Group Flow (vph)	426	227	0	0	334	64	0	141	58	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	31.4	57.5			22.1	22.1		34.5	34.5			
Effective Green, g (s)	31.4	57.5			22.1	22.1		34.5	34.5			
Actuated g/C Ratio	0.31	0.58			0.22	0.22		0.34	0.34			
Clearance Time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	497	1071			412	313		611	489			
v/s Ratio Prot	c0.27	0.12			c0.18							
v/s Ratio Perm						0.05		0.08	0.04			
v/c Ratio	0.86	0.21			0.81	0.21		0.23	0.12			
Uniform Delay, d1	32.2	10.3			37.0	31.8		23.3	22.4			
Progression Factor	0.64	0.33			1.00	1.00		1.00	1.00			
Incremental Delay, d2	10.5	0.1			11.5	0.3		0.9	0.5			
Delay (s)	31.2	3.4			48.4	32.1		24.2	22.9			
Level of Service	C	A			D	C		C	C			
Approach Delay (s)		21.5			44.7			23.5			0.0	
Approach LOS		C			D			C			A	

Intersection Summary			
HCM Average Control Delay	29.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

LOS Engineering

AM Existing + Project
8: Pala Rd (SR-76) & Pankey Rd

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	379	9	7	461	3	14	2	7	0	7	27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	11	399	9	7	485	3	15	2	7	0	7	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	488			408			714	928	204	731	931	244
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	488			408			714	928	204	731	931	244
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			95	99	99	100	97	96
cM capacity (veh/h)	1071			1147			296	262	803	301	261	756

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	11	266	142	7	324	165	24	36
Volume Left	11	0	0	7	0	0	15	0
Volume Right	0	0	9	0	0	3	7	28
cSH	1071	1700	1700	1147	1700	1700	361	544
Volume to Capacity	0.01	0.16	0.08	0.01	0.19	0.10	0.07	0.07
Queue Length 95th (ft)	1	0	0	0	0	0	5	5
Control Delay (s)	8.4	0.0	0.0	8.2	0.0	0.0	15.7	12.1
Lane LOS	A			A			C	B
Approach Delay (s)	0.2			0.1			15.7	12.1
Approach LOS							C	B

Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	27.5%	ICU Level of Service	A	
Analysis Period (min)	15			

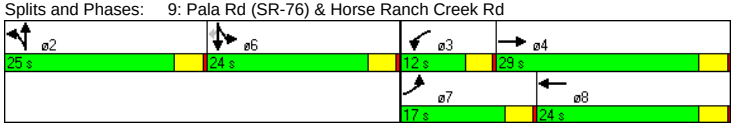
AM Existing + Project
9: Pala Rd (SR-76) & Horse Ranch Creek Rd

Timings

Lane Group	EBL	EBT	WBT	SBL	SBT	SBR	ø2	ø3
Lane Configurations								
Volume (vph)	60	326	287	34	0	184		
Turn Type	Prot			Split		Perm		
Protected Phases	7	4	8	6	6		2	3
Permitted Phases						6		
Detector Phases	7	4	8	6	6	6		
Minimum Initial (s)	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	20.0	20.0	20.0	20.0	8.0
Total Split (s)	17.0	29.0	24.0	24.0	24.0	24.0	25.0	12.0
Total Split (%)	18.9%	32.2%	26.7%	26.7%	26.7%	26.7%	28%	13%
Yellow Time (s)	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
Lead/Lag	Lead	Lag	Lag					Lead
Lead-Lag Optimize?	Yes	Yes	Yes					Yes
Recall Mode	None	None	None	Min	Min	Min	Min	None
Act Effct Green (s)	7.2	13.1	9.1	6.9	6.9	6.9		
Actuated g/C Ratio	0.16	0.34	0.24	0.18	0.18	0.18		
v/c Ratio	0.25	0.29	0.38	0.13	0.28	0.31		
Control Delay	20.1	9.1	15.3	18.1	8.2	8.2		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	20.1	9.1	15.3	18.1	8.2	8.2		
LOS	C	A	B	B	A	A		
Approach Delay		10.8	15.3		9.7			
Approach LOS		B	B		A			

Intersection Summary			
Cycle Length: 90			
Actuated Cycle Length: 38.6			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.38			
Intersection Signal Delay: 12.0		Intersection LOS: B	
Intersection Capacity Utilization 25.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Pala Rd (SR-76) & Horse Ranch Creek Rd



AM Existing + Project
9: Pala Rd (SR-76) & Horse Ranch Creek Rd

Queues

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1700	1700	1900	1700	1700	1900	1700	1700	1900	1700
Storage Length (ft)	250		0	250		250	0		0	150		150
Storage Lanes	1		0	1		0	0		0	1		1
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
Leading Detector (ft)	50	50		50	50		50	50		50	50	50
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.91	0.95
Frt					0.994						0.853	0.850
Flt Protected	0.950									0.950	0.999	
Satd. Flow (prot)	1583	3539	0	1667	3518	0	0	1863	0	1504	1444	1346
Flt Permitted	0.950									0.950	0.999	
Satd. Flow (perm)	1583	3539	0	1667	3518	0	0	1863	0	1504	1444	1346
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					4						93	101
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2833			5160			734			1509	
Travel Time (s)		64.4			117.3			16.7			34.3	
Volume (vph)	60	326	0	0	287	11	0	0	0	34	0	184
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	63	343	0	0	302	12	0	0	0	36	0	194
Lane Group Flow (vph)	63	343	0	0	314	0	0	0	0	34	95	101
v/c Ratio	0.25	0.29			0.38					0.13	0.28	0.31
Control Delay	20.1	9.1			15.3					18.1	8.2	8.2
Queue Delay	0.0	0.0			0.0					0.0	0.0	0.0
Total Delay	20.1	9.1			15.3					18.1	8.2	8.2
Queue Length 50th (ft)	9	24			22					5	0	0
Queue Length 95th (ft)	44	48			74					30	35	33
Internal Link Dist (ft)		2753			5080			654			1429	
Turn Bay Length (ft)	250									150		150
Base Capacity (vph)	411	1808			1455					596	629	595
Starvation Cap Reductn	0	0			0					0	0	0
Spillback Cap Reductn	0	0			0					0	0	0
Storage Cap Reductn	0	0			0					0	0	0
Reduced v/c Ratio	0.15	0.19			0.22					0.06	0.15	0.17

Intersection Summary

Area Type: Other

AM Existing + Project
9: Pala Rd (SR-76) & Horse Ranch Creek Rd

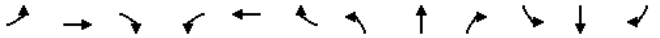
HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1700	1700	1900	1700	1700	1900	1700	1700	1900	1700
Total Lost time (s)	4.0	4.0			4.0					4.0	4.0	4.0
Lane Util. Factor	1.00	0.95			0.95					0.95	0.91	0.95
Frt	1.00	1.00			0.99					1.00	0.85	0.85
Flt Protected	0.95	1.00			1.00					0.95	1.00	1.00
Satd. Flow (prot)	1583	3539			3519					1504	1445	1346
Flt Permitted	0.95	1.00			1.00					0.95	1.00	1.00
Satd. Flow (perm)	1583	3539			3519					1504	1445	1346
Volume (vph)	60	326	0	0	287	11	0	0	0	34	0	184
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	63	343	0	0	302	12	0	0	0	36	0	194
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	77	84
Lane Group Flow (vph)	63	343	0	0	311	0	0	0	0	34	18	17
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	2.8	15.9			9.1					6.9	6.9	6.9
Effective Green, g (s)	2.8	15.9			9.1					6.9	6.9	6.9
Actuated g/C Ratio	0.07	0.39			0.22					0.17	0.17	0.17
Clearance Time (s)	4.0	4.0			4.0					4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	109	1383			787					255	245	228
v/s Ratio Prot	c0.04	0.10			c0.09					c0.02	0.01	
v/s Ratio Perm												0.01
v/c Ratio	0.58	0.25			0.40					0.13	0.07	0.08
Uniform Delay, d1	18.4	8.4			13.5					14.4	14.2	14.2
Progression Factor	1.00	1.00			1.00					1.00	1.00	1.00
Incremental Delay, d2	7.2	0.1			0.3					0.2	0.1	0.1
Delay (s)	25.6	8.5			13.8					14.6	14.3	14.4
Level of Service	C	A			B					B	B	B
Approach Delay (s)		11.1			13.8			0.0			14.4	
Approach LOS		B			B			A			B	

Intersection Summary				
HCM Average Control Delay	12.8	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.33			
Actuated Cycle Length (s)	40.7	Sum of lost time (s)	21.9	
Intersection Capacity Utilization	25.7%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

AM Existing + Project

12: Pala Mesa Dr & Old Hwy 395 — HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	25	4	37	54	14	7	21	149	19	2	244	8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	26	4	39	57	15	7	22	157	20	2	257	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	481	486	261	513	481	167	265			177		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	481	486	261	513	481	167	265			177		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	99	95	87	97	99	98			100		
cM capacity (veh/h)	473	472	778	439	476	877	1299			1399		

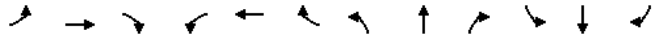
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	69	57	22	22	177	2	265
Volume Left	26	57	0	22	0	2	0
Volume Right	39	0	7	0	20	0	8
cSH	606	439	562	1299	1700	1399	1700
Volume to Capacity	0.11	0.13	0.04	0.02	0.10	0.00	0.16
Queue Length 95th (ft)	10	11	3	1	0	0	0
Control Delay (s)	11.7	14.4	11.7	7.8	0.0	7.6	0.0
Lane LOS	B	B	B	A		A	
Approach Delay (s)	11.7	13.7		0.9		0.1	
Approach LOS	B	B					

Intersection Summary				
Average Delay	3.4			
Intersection Capacity Utilization	36.7%	ICU Level of Service	A	
Analysis Period (min)	15			

LOS Engineering

AM Existing + Project

14: Stewart Canyon Rd & Old Hwy 395 — HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	14	1	23	17	0	135	3	147	13	53	243	7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	15	1	24	18	0	142	3	155	14	56	256	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	674	546	259	560	543	162	263			168		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	674	546	259	560	543	162	263			168		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	97	96	100	84	100			96		
cM capacity (veh/h)	299	427	779	411	428	883	1301			1409		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	40	160	3	168	56	263
Volume Left	15	18	3	0	56	0
Volume Right	24	142	0	14	0	7
cSH	483	783	1301	1700	1409	1700
Volume to Capacity	0.08	0.20	0.00	0.10	0.04	0.15
Queue Length 95th (ft)	7	19	0	0	3	0
Control Delay (s)	13.1	10.8	7.8	0.0	7.7	0.0
Lane LOS	B	B	A		A	
Approach Delay (s)	13.1	10.8	0.1		1.3	
Approach LOS	B	B				

Intersection Summary				
Average Delay	3.9			
Intersection Capacity Utilization	36.3%	ICU Level of Service	A	
Analysis Period (min)	15			

LOS Engineering

AM Existing + Project
15: Reche Rd & Old Hwy 395 — HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	189	206	142	163	97	119
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	199	217	149	172	102	125
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	635	165	227			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	635	165	227			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	49	75	89			
cM capacity (veh/h)	393	880	1341			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	416	149	172	227
Volume Left	199	149	0	0
Volume Right	217	0	0	125
cSH	553	1341	1700	1700
Volume to Capacity	0.75	0.11	0.10	0.13
Queue Length 95th (ft)	165	9	0	0
Control Delay (s)	28.7	8.0	0.0	0.0
Lane LOS	D	A		
Approach Delay (s)	28.7	3.7		0.0
Approach LOS	D			

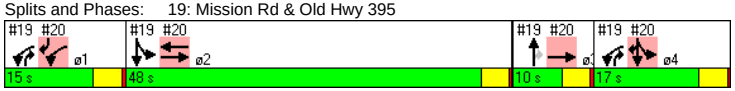
Intersection Summary			
Average Delay		13.6	
Intersection Capacity Utilization		57.0%	ICU Level of Service B
Analysis Period (min)		15	

AM Existing + Project
19: Mission Rd & Old Hwy 395 — Timings

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø1	ø4
Lane Configurations								
Volume (vph)	136	878	27	242	549	41		
Turn Type		Free		pm+ov	Split			
Protected Phases	1 4		3	1 4	2	2	1	4
Permitted Phases		Free		3				
Detector Phases	1 4		3	1 4	2	2		
Minimum Initial (s)			4.0		4.0	4.0	4.0	4.0
Minimum Split (s)			20.0		20.0	20.0	8.0	20.0
Total Split (s)	32.0	0.0	10.0	32.0	48.0	48.0	15.0	17.0
Total Split (%)	35.6%	0.0%	11.1%	35.6%	53.3%	53.3%	17%	19%
Yellow Time (s)			3.5		3.5	3.5	3.5	3.5
All-Red Time (s)			0.5		0.5	0.5	0.5	0.5
Lead/Lag			Lead		Lag	Lag	Lead	Lag
Lead-Lag Optimize?			Yes		Yes	Yes	Yes	Yes
Recall Mode			None		Min	Min	None	None
Act Effct Green (s)	28.2	84.6	6.0	38.3	38.2	38.2		
Actuated g/C Ratio	0.33	1.00	0.07	0.45	0.45	0.45		
v/c Ratio	0.27	0.65	0.21	0.40	0.81	0.05		
Control Delay	26.2	1.9	43.6	19.5	29.8	12.4		
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0		
Total Delay	26.2	1.9	43.6	19.5	30.1	12.4		
LOS	C	A	D	B	C	B		
Approach Delay	5.2		21.9			28.8		
Approach LOS	A		C			C		

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 84.6
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 15.0 — Intersection LOS: B
Intersection Capacity Utilization 57.4% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 19: Mission Rd & Old Hwy 395



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1700	1700	1900	1700	1700	1900
Storage Length (ft)	0	130		210	100	
Storage Lanes	1	1		1	1	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0
Turning Speed (mph)	15	9		9	15	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1583	1417	1863	1417	1583	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1583	1417	1863	1417	1583	1863
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30		30			30
Link Distance (ft)	434		4960			1035
Travel Time (s)	9.9		112.7			23.5
Volume (vph)	136	878	27	242	549	41
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	143	924	28	255	578	43
Lane Group Flow (vph)	143	924	28	255	578	43
v/c Ratio	0.27	0.65	0.21	0.40	0.81	0.05
Control Delay	26.2	1.9	43.6	19.5	29.8	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0
Total Delay	26.2	1.9	43.6	19.5	30.1	12.4
Queue Length 50th (ft)	61	12	15	99	253	12
Queue Length 95th (ft)	m74	m14	42	165	391	29
Internal Link Dist (ft)	354		4880			955
Turn Bay Length (ft)		130		210	100	
Base Capacity (vph)	528	1417	133	641	830	977
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	35	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.65	0.21	0.40	0.73	0.04

Intersection Summary	
Area Type:	Other

m Volume for 95th percentile queue is metered by upstream signal.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1700	1700	1900	1700	1700	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1583	1417	1863	1417	1583	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1583	1417	1863	1417	1583	1863
Volume (vph)	136	878	27	242	549	41
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	143	924	28	255	578	43
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	143	924	28	255	578	43
Turn Type		Free		pm+ov	Split	
Protected Phases	1 4		3	1 4	2	2
Permitted Phases		Free		3		
Actuated Green, G (s)	28.2	84.5	6.1	34.3	38.2	38.2
Effective Green, g (s)	28.2	84.5	6.1	34.3	38.2	38.2
Actuated g/C Ratio	0.33	1.00	0.07	0.41	0.45	0.45
Clearance Time (s)			4.0		4.0	4.0
Vehicle Extension (s)			3.0		3.0	3.0
Lane Grp Cap (vph)	528	1417	134	642	716	842
v/s Ratio Prot	0.09		0.02	0.13	c0.37	0.02
v/s Ratio Perm		c0.65		0.05		
v/c Ratio	0.27	0.65	0.21	0.40	0.81	0.05
Uniform Delay, d1	20.6	0.0	36.9	17.8	20.0	13.0
Progression Factor	1.10	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	1.3	0.8	0.4	6.7	0.0
Delay (s)	22.9	1.3	37.7	18.2	26.6	13.0
Level of Service	C	A	D	B	C	B
Approach Delay (s)	4.2		20.1			25.7
Approach LOS	A		C			C

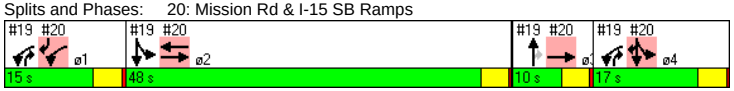
Intersection Summary				
HCM Average Control Delay	13.3	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	84.5	Sum of lost time (s)	4.0	
Intersection Capacity Utilization	57.4%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBT	WBL	WBT	SBT	SBR	ø3
Lane Configurations						
Volume (vph)	618	61	244	7	802	
Turn Type		Prot			custom	
Protected Phases	2 3	1	2	4	1 4	3
Permitted Phases					4	
Detector Phases	2 3	1	2	4	1 4	
Minimum Initial (s)		4.0	4.0	4.0		4.0
Minimum Split (s)		8.0	20.0	20.0		20.0
Total Split (s)	58.0	15.0	48.0	17.0	32.0	10.0
Total Split (%)	64.4%	16.7%	53.3%	18.9%	35.6%	11%
Yellow Time (s)		3.5	3.5	3.5		3.5
All-Red Time (s)		0.5	0.5	0.5		0.5
Lead/Lag		Lead	Lag	Lag		Lead
Lead-Lag Optimize?		Yes	Yes	Yes		Yes
Recall Mode		None	Min	None		None
Act Effct Green (s)	48.3	11.1	38.2	13.1	28.2	
Actuated g/C Ratio	0.57	0.13	0.45	0.15	0.33	
v/c Ratio	0.82	0.31	0.31	0.05	0.95	
Control Delay	14.2	40.3	15.4	33.9	30.7	
Queue Delay	0.8	0.0	0.0	0.0	0.0	
Total Delay	15.0	40.3	15.4	33.9	30.7	
LOS	B	D	B	C	C	
Approach Delay	15.0		20.3	30.7		
Approach LOS	B		C	C		

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 84.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 22.5	Intersection LOS: C
Intersection Capacity Utilization 75.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 20: Mission Rd & I-15 SB Ramps



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1700	1700	1900	1700	1700	1900	1700	1700	1900	1700
Storage Length (ft)	0		0	285		0	0		0	0		200
Storage Lanes	0		0	1		0	0		0	0		1
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
Leading Detector (ft)		50		50	50					50	50	50
Trailing Detector (ft)		0		0	0					0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.968										0.850
Flt Protected				0.950							0.974	
Satd. Flow (prot)	0	1803	0	1583	1863	0	0	0	0	0	1814	1417
Flt Permitted				0.950							0.974	
Satd. Flow (perm)	0	1803	0	1583	1863	0	0	0	0	0	1814	1417
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31										620
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		434			744			972			897	
Travel Time (s)		9.9			16.9			22.1			20.4	
Volume (vph)	0	618	193	61	244	0	0	0	0	8	7	802
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	651	203	64	257	0	0	0	0	8	7	844
Lane Group Flow (vph)	0	854	0	64	257	0	0	0	0	0	15	844
v/c Ratio		0.82		0.31	0.31						0.05	0.95
Control Delay		14.2		40.3	15.4						33.9	30.7
Queue Delay		0.8		0.0	0.0						0.0	0.0
Total Delay		15.0		40.3	15.4						33.9	30.7
Queue Length 50th (ft)		158		34	83						8	152
Queue Length 95th (ft)		195		73	134						25	#451
Internal Link Dist (ft)		354			664			892			817	
Turn Bay Length (ft)				285								200
Base Capacity (vph)		1088		207	977						281	886
Starvation Cap Reductn		65		0	0						0	0
Spillback Cap Reductn		0		0	0						0	0
Storage Cap Reductn		0		0	0						0	0
Reduced v/c Ratio		0.83		0.31	0.26						0.05	0.95

Intersection Summary	
Area Type:	Other
#	95th percentile volume exceeds capacity, queue may be longer.
	Queue shown is maximum after two cycles.

AM Existing + Project
20: Mission Rd & I-15 SB Ramps

HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1700	1700	1900	1700	1700	1900	1700	1700	1900	1700
Total Lost time (s)		4.0		4.0	4.0						4.0	4.0
Lane Util. Factor		1.00		1.00	1.00						1.00	1.00
Frt		0.97		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.97	1.00
Satd. Flow (prot)		1803		1583	1863						1814	1417
Flt Permitted		1.00		0.95	1.00						0.97	1.00
Satd. Flow (perm)		1803		1583	1863						1814	1417
Volume (vph)	0	618	193	61	244	0	0	0	0	8	7	802
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	651	203	64	257	0	0	0	0	8	7	844
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	0	0	0	413
Lane Group Flow (vph)	0	841	0	64	257	0	0	0	0	0	15	431
Turn Type				Prot						Split		custom
Protected Phases		2 3		1	2					4	4	1 4
Permitted Phases												4
Actuated Green, G (s)		48.3		11.1	38.2						13.1	28.2
Effective Green, g (s)		48.3		11.1	38.2						13.1	28.2
Actuated g/C Ratio		0.57		0.13	0.45						0.16	0.33
Clearance Time (s)				4.0	4.0						4.0	
Vehicle Extension (s)				3.0	3.0						3.0	
Lane Grp Cap (vph)		1031		208	842						281	473
v/s Ratio Prot		c0.47		0.04	0.14						0.01	c0.30
v/s Ratio Perm												
v/c Ratio		0.82		0.31	0.31						0.05	0.91
Uniform Delay, d1		14.5		33.2	14.7						30.4	26.9
Progression Factor		0.62		1.00	1.00						1.00	1.00
Incremental Delay, d2		3.8		0.8	0.2						0.1	21.6
Delay (s)		12.7		34.1	14.9						30.5	48.6
Level of Service		B		C	B						C	D
Approach Delay (s)		12.7			18.7			0.0			48.3	
Approach LOS		B			B			A			D	

Intersection Summary				
HCM Average Control Delay	28.7	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.85			
Actuated Cycle Length (s)	84.5	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	75.0%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

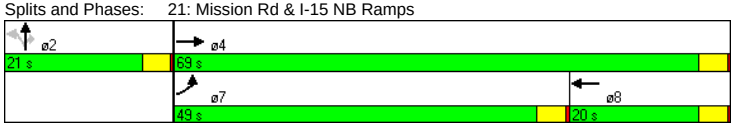
AM Existing + Project
21: Mission Rd & I-15 NB Ramps

Timings

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Configurations					
Volume (vph)	524	100	163	2	37
Turn Type	Prot				Perm
Protected Phases	7	4	8	2	
Permitted Phases					2
Detector Phases	7	4	8	2	2
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	20.0	20.0	20.0
Total Split (s)	49.0	69.0	20.0	21.0	21.0
Total Split (%)	54.4%	76.7%	22.2%	23.3%	23.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	24.7	36.1	10.7	10.4	10.4
Actuated g/C Ratio	0.44	0.64	0.18	0.18	0.18
v/c Ratio	0.80	0.09	0.51	0.38	0.13
Control Delay	24.3	3.3	31.7	30.4	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	24.3	3.3	31.7	30.4	11.8
LOS	C	A	C	C	B
Approach Delay		20.9	31.7	26.0	
Approach LOS		C	C	C	

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 56.5		
Natural Cycle: 70		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.80		
Intersection Signal Delay: 23.7	Intersection LOS: C	
Intersection Capacity Utilization 75.0%	ICU Level of Service D	
Analysis Period (min) 15		

Splits and Phases: 21: Mission Rd & I-15 NB Ramps



AM Existing + Project
21: Mission Rd & I-15 NB Ramps

Queues

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1700	1700	1900	1700	1700	1900	1700	1700	1900	1700
Storage Length (ft)	300		0	0		0	0		200	0		0
Storage Lanes	1		0	0		0	0		1	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
Leading Detector (ft)	50	50			50		50	50	50			
Trailing Detector (ft)	0	0			0		0	0	0			
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.997				0.850			
Flt Protected	0.950							0.953				
Satd. Flow (prot)	1583	1863	0	0	1857	0	0	1775	1417	0	0	0
Flt Permitted	0.950							0.953				
Satd. Flow (perm)	1583	1863	0	0	1857	0	0	1775	1417	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1				39			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		744			1271			1082			1005	
Travel Time (s)		16.9			28.9			24.6			22.8	
Volume (vph)	524	100	0	0	163	4	115	2	37	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	552	105	0	0	172	4	121	2	39	0	0	0
Lane Group Flow (vph)	552	105	0	0	176	0	0	123	39	0	0	0
v/c Ratio	0.80	0.09			0.51			0.38	0.13			
Control Delay	24.3	3.3			31.7			30.4	11.8			
Queue Delay	0.0	0.0			0.0			0.0	0.0			
Total Delay	24.3	3.3			31.7			30.4	11.8			
Queue Length 50th (ft)	152	9			52			37	0			
Queue Length 95th (ft)	345	26			155			114	27			
Internal Link Dist (ft)		664			1191			1002			925	
Turn Bay Length (ft)	300								200			
Base Capacity (vph)	960	1464			500			531	451			
Starvation Cap Reductn	0	0			0			0	0			
Spillback Cap Reductn	0	0			0			0	0			
Storage Cap Reductn	0	0			0			0	0			
Reduced v/c Ratio	0.57	0.07			0.35			0.23	0.09			

Intersection Summary

Area Type: Other

LOS Engineering

AM Existing + Project
21: Mission Rd & I-15 NB Ramps

HCM Signalized Intersection Capacity Analysis

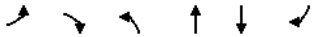
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1700	1700	1900	1700	1700	1900	1700	1700	1900	1700
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0			
Lane Util. Factor	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			1.00			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (prot)	1583	1863			1857			1775	1417			
Flt Permitted	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (perm)	1583	1863			1857			1775	1417			
Volume (vph)	524	100	0	0	163	4	115	2	37	0	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	552	105	0	0	172	4	121	2	39	0	0	0
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	32	0	0	0
Lane Group Flow (vph)	552	105	0	0	175	0	0	123	7	0	0	0
Turn Type	Prot						Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases							2		2			
Actuated Green, G (s)	24.7	37.1			8.4			10.4	10.4			
Effective Green, g (s)	24.7	37.1			8.4			10.4	10.4			
Actuated g/C Ratio	0.45	0.67			0.15			0.19	0.19			
Clearance Time (s)	4.0	4.0			4.0			4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)	705	1245			281			333	266			
v/s Ratio Prot	c0.35	0.06			c0.09							
v/s Ratio Perm								0.07	0.01			
v/c Ratio	0.78	0.08			0.62			0.37	0.03			
Uniform Delay, d1	13.1	3.2			22.1			19.7	18.4			
Progression Factor	1.00	1.00			1.00			1.00	1.00			
Incremental Delay, d2	5.7	0.0			4.3			0.7	0.0			
Delay (s)	18.8	3.3			26.3			20.4	18.5			
Level of Service	B	A			C			C	B			
Approach Delay (s)		16.3			26.3			19.9			0.0	
Approach LOS		B			C			B			A	

Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	55.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

LOS Engineering

AM Existing + Project

22: Stewart Canyon Rd & Horse Ranch Creek Rd — HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Yield			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	18	47	133	0	0	20
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	19	49	140	0	0	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	291	11	21			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	291	11	21			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	95	91			
cM capacity (veh/h)	639	1071	1595			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	68	140	21
Volume Left	19	140	0
Volume Right	49	0	21
cSH	902	1595	1700
Volume to Capacity	0.08	0.09	0.01
Queue Length 95th (ft)	6	7	0
Control Delay (s)	9.3	7.5	0.0
Lane LOS	A	A	
Approach Delay (s)	9.3	7.5	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		7.3	
Intersection Capacity Utilization		24.6%	ICU Level of Service A
Analysis Period (min)		15	

LOS Engineering

AM Existing + Project

23: Baltimore Oriole & Horse Ranch Creek Rd — HCM Unsignalized Intersection Capacity Analysis

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	32	10	119	22	5	38
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	34	11	125	23	5	40
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	187	137			148	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	187	137			148	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	99			100	
cM capacity (veh/h)	799	912			1433	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	44	148	45
Volume Left	34	0	5
Volume Right	11	23	0
cSH	823	1700	1433
Volume to Capacity	0.05	0.09	0.00
Queue Length 95th (ft)	4	0	0
Control Delay (s)	9.6	0.0	0.9
Lane LOS	A		A
Approach Delay (s)	9.6	0.0	0.9
Approach LOS	A		

Intersection Summary			
Average Delay		2.0	
Intersection Capacity Utilization		17.6%	ICU Level of Service A
Analysis Period (min)		15	

LOS Engineering

AM Existing + Project

25: Harvest Glen Ln & Horse Ranch Creek Rd — HCM Unsignalized Intersection Capacity Analysis

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	140	37	135	54	11	106
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	147	39	142	57	12	112
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	305	171			199	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	305	171			199	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	78	96			99	
cM capacity (veh/h)	681	873			1373	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	186	199	123
Volume Left	147	0	12
Volume Right	39	57	0
cSH	714	1700	1373
Volume to Capacity	0.26	0.12	0.01
Queue Length 95th (ft)	26	0	1
Control Delay (s)	11.8	0.0	0.8
Lane LOS	B		A
Approach Delay (s)	11.8	0.0	0.8
Approach LOS	B		

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	32.6%	ICU Level of Service	A
Analysis Period (min)	15		

LOS Engineering

AM Existing + Project

26: Pardee South Loop & Horse Ranch Creek Rd — HCM Unsignalized Intersection Capacity Analysis

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	201	54	135	86	18	228
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	212	57	142	91	19	240
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	465	187			233	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	465	187			233	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	61	93			99	
cM capacity (veh/h)	548	855			1335	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	268	233	259
Volume Left	212	0	19
Volume Right	57	91	0
cSH	593	1700	1335
Volume to Capacity	0.45	0.14	0.01
Queue Length 95th (ft)	59	0	1
Control Delay (s)	16.0	0.0	0.7
Lane LOS	C		A
Approach Delay (s)	16.0	0.0	0.7
Approach LOS	C		

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

LOS Engineering

AM Existing + Project

27: School/Park Access & Horse Ranch Creek Rd — HCM Unsignalized Intersection Capacity Analysis

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	22	122	113	32	183	268
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	23	128	119	34	193	282

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	152	153	475
Volume Left (vph)	23	0	193
Volume Right (vph)	128	34	0
Hadj (s)	-0.44	-0.10	0.12
Departure Headway (s)	4.9	4.8	4.6
Degree Utilization, x	0.21	0.20	0.61
Capacity (veh/h)	658	717	763
Control Delay (s)	9.2	8.9	14.4
Approach Delay (s)	9.2	8.9	14.4
Approach LOS	A	A	B

Intersection Summary			
Delay	12.3		
HCM Level of Service	B		
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		

AM Existing + Project

28: Connector Rd & Horse Ranch Creek Rd — HCM Unsignalized Intersection Capacity Analysis

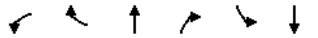
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	87	41	13	58	177	113
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	92	43	14	61	186	119
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	334	246	305			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	334	246	305			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	86	95	99			
cM capacity (veh/h)	654	793	1256			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	135	75	305
Volume Left	92	14	0
Volume Right	43	0	119
cSH	693	1256	1700
Volume to Capacity	0.19	0.01	0.18
Queue Length 95th (ft)	18	1	0
Control Delay (s)	11.4	1.5	0.0
Lane LOS	B	A	
Approach Delay (s)	11.4	1.5	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	31.1%	ICU Level of Service	A
Analysis Period (min)	15		

AM Existing + Project

29: Connector Rd & Pankey Rd — HCM Unsignalized Intersection Capacity Analysis



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	34	75	0	11	25	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	36	79	0	12	26	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	58	6			12	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	58	6			12	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	93			98	
cM capacity (veh/h)	933	1077			1607	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	115	12	26
Volume Left	36	0	26
Volume Right	79	12	0
cSH	1028	1700	1607
Volume to Capacity	0.11	0.01	0.02
Queue Length 95th (ft)	9	0	1
Control Delay (s)	8.9	0.0	7.3
Lane LOS	A		A
Approach Delay (s)	8.9	0.0	7.3
Approach LOS	A		

Intersection Summary			
Average Delay	8.0		
Intersection Capacity Utilization	22.1%	ICU Level of Service	A
Analysis Period (min)	15		

LOS Engineering

PM Existing + Project
1: Pala Rd (SR-76) & Via Monserate

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	22	982	821	53	41	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	23	1034	864	56	43	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	920				1972	892
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	920				1972	892
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				35	95
cM capacity (veh/h)	742				66	341

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	23	1034	920	59
Volume Left	23	0	0	43
Volume Right	0	0	56	16
cSH	742	1700	1700	85
Volume to Capacity	0.03	0.61	0.54	0.70
Queue Length 95th (ft)	2	0	0	84
Control Delay (s)	10.0	0.0	0.0	113.4
Lane LOS	B			F
Approach Delay (s)	0.2		0.0	113.4
Approach LOS				F

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

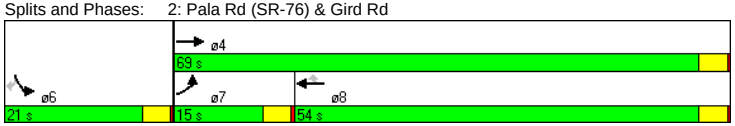
PM Existing + Project
2: Pala Rd (SR-76) & Gird Rd

Timings

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	111	929	808	68	44	56
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Detector Phases	7	4	8	8	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	15.0	69.0	54.0	54.0	21.0	21.0
Total Split (%)	16.7%	76.7%	60.0%	60.0%	23.3%	23.3%
Yellow Time (s)	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
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	None	None	None	Min	Min
Act Effct Green (s)	9.3	43.3	33.3	33.3	8.2	8.2
Actuated g/C Ratio	0.15	0.71	0.55	0.55	0.13	0.13
v/c Ratio	0.50	0.74	0.84	0.09	0.22	0.24
Control Delay	38.0	8.4	20.6	6.2	33.4	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.0	8.4	20.6	6.2	33.4	12.6
LOS	D	A	C	A	C	B
Approach Delay		11.6	19.5		21.7	
Approach LOS		B	B		C	

Intersection Summary			
Cycle Length: 90			
Actuated Cycle Length: 61			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 15.5		Intersection LOS: B	
Intersection Capacity Utilization 62.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Pala Rd (SR-76) & Gird Rd



PM Existing + Project
2: Pala Rd (SR-76) & Gird Rd

Queues

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1700	1900	1900	1700	1700	1700
Storage Length (ft)	450			20	0	180
Storage Lanes	1			1	1	1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0
Turning Speed (mph)	15			9	15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1583	1863	1863	1417	1583	1417
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1583	1863	1863	1417	1583	1417
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				14		59
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30	30		30	
Link Distance (ft)		3191	8309		1271	
Travel Time (s)		72.5	188.8		28.9	
Volume (vph)	111	929	808	68	44	56
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	117	978	851	72	46	59
Lane Group Flow (vph)	117	978	851	72	46	59
v/c Ratio	0.50	0.74	0.84	0.09	0.22	0.24
Control Delay	38.0	8.4	20.6	6.2	33.4	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.0	8.4	20.6	6.2	33.4	12.6
Queue Length 50th (ft)	44	134	257	10	17	0
Queue Length 95th (ft)	#115	288	463	29	53	34
Internal Link Dist (ft)		3111	8229		1191	
Turn Bay Length (ft)	450			20		180
Base Capacity (vph)	287	1503	1224	936	422	421
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.65	0.70	0.08	0.11	0.14

Intersection Summary
Area Type: Other
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

LOS Engineering

PM Existing + Project
2: Pala Rd (SR-76) & Gird Rd

HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1700	1900	1900	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1583	1863	1863	1417	1583	1417
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1583	1863	1863	1417	1583	1417
Volume (vph)	111	929	808	68	44	56
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	117	978	851	72	46	59
RTOR Reduction (vph)	0	0	0	6	0	51
Lane Group Flow (vph)	117	978	851	66	46	8
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	7.1	44.4	33.3	33.3	8.2	8.2
Effective Green, g (s)	7.1	44.4	33.3	33.3	8.2	8.2
Actuated g/C Ratio	0.12	0.73	0.55	0.55	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	185	1365	1024	779	214	192
v/s Ratio Prot	0.07	c0.53	c0.46		c0.03	
v/s Ratio Perm				0.05		0.01
v/c Ratio	0.63	0.72	0.83	0.08	0.21	0.04
Uniform Delay, d1	25.5	4.6	11.3	6.4	23.3	22.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.9	1.8	5.8	0.0	0.5	0.1
Delay (s)	32.4	6.4	17.2	6.5	23.8	22.9
Level of Service	C	A	B	A	C	C
Approach Delay (s)		9.2	16.3		23.3	
Approach LOS		A	B		C	

Intersection Summary				
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

LOS Engineering

PM Existing + Project
3: Pala Rd (SR-76) & Sage Rd — HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	8	967	878	4	6	9
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	8	1018	924	4	6	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	928				1961	926
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	928				1961	926
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				91	97
cM capacity (veh/h)	737				69	326

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	1026	928	16
Volume Left	8	0	6
Volume Right	0	4	9
cSH	737	1700	131
Volume to Capacity	0.01	0.55	0.12
Queue Length 95th (ft)	1	0	10
Control Delay (s)	0.4	0.0	36.3
Lane LOS	A		E
Approach Delay (s)	0.4	0.0	36.3
Approach LOS			E

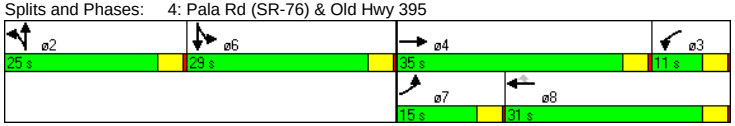
Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

PM Existing + Project
4: Pala Rd (SR-76) & Old Hwy 395 — Timings

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT
Lane Configurations							
Volume (vph)	110	796	60	606	236	115	76
Turn Type	Prot		Prot		Perm		
Protected Phases	7	4	3	8		2	6
Permitted Phases					8		
Detector Phases	7	4	3	8	8	2	6
Minimum Initial (s)	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	20.0	20.0
Total Split (s)	15.0	35.0	11.0	31.0	31.0	25.0	29.0
Total Split (%)	15.0%	35.0%	11.0%	31.0%	31.0%	25.0%	29.0%
Yellow Time (s)	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
Lead/Lag	Lead	Lead	Lag	Lag	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	Min	Min
Act Effct Green (s)	9.8	25.6	7.1	23.0	23.0	15.8	19.6
Actuated g/C Ratio	0.12	0.31	0.08	0.28	0.28	0.19	0.24
v/c Ratio	0.63	0.84	0.47	0.65	0.43	0.74	0.81
Control Delay	58.0	36.6	56.2	32.4	6.7	46.9	47.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.0	36.6	56.2	32.4	6.7	46.9	47.6
LOS	E	D	E	C	A	D	D
Approach Delay		39.0		27.2		46.9	47.6
Approach LOS		D		C		D	D

Intersection Summary			
Cycle Length: 100			
Actuated Cycle Length: 82.6			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 36.7		Intersection LOS: D	
Intersection Capacity Utilization 71.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Pala Rd (SR-76) & Old Hwy 395



PM Existing + Project
4: Pala Rd (SR-76) & Old Hwy 395 — Queues

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1700	1700	1900	1700	1700	1900	1700	1700	1900	1700
Storage Length (ft)	330		0	150		150	0		0	0		0
Storage Lanes	1		0	1		1	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
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987				0.850		0.967			0.970	
Flt Protected	0.950			0.950				0.985			0.973	
Satd. Flow (prot)	1583	3493	0	1583	3539	1417	0	1774	0	0	1758	0
Flt Permitted	0.950			0.950				0.985			0.973	
Satd. Flow (perm)	1583	3493	0	1583	3539	1417	0	1774	0	0	1758	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				248		14			13	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		652			462			899			4464	
Travel Time (s)		14.8			10.5			20.4			101.5	
Volume (vph)	110	796	75	60	606	236	73	115	60	181	76	72
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	116	838	79	63	638	248	77	121	63	191	80	76
Lane Group Flow (vph)	116	917	0	63	638	248	0	261	0	0	347	0
v/c Ratio	0.63	0.84		0.47	0.65	0.43		0.74			0.81	
Control Delay	58.0	36.6		56.2	32.4	6.7		46.9			47.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay	58.0	36.6		56.2	32.4	6.7		46.9			47.6	
Queue Length 50th (ft)	69	268		38	181	0		144			192	
Queue Length 95th (ft)	#151	#365		#96	252	58		234			#332	
Internal Link Dist (ft)		572			382			819			4384	
Turn Bay Length (ft)	330			150		150						
Base Capacity (vph)	215	1293		141	1164	633		464			538	
Starvation Cap Reductn	0	0		0	0	0		0			0	
Spillback Cap Reductn	0	0		0	0	0		0			0	
Storage Cap Reductn	0	0		0	0	0		0			0	
Reduced v/c Ratio	0.54	0.71		0.45	0.55	0.39		0.56			0.64	

Intersection Summary
Area Type: Other
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

LOS Engineering

PM Existing + Project
4: Pala Rd (SR-76) & Old Hwy 395 — HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1700	1700	1900	1700	1700	1900	1700	1700	1900	1700
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00			1.00	
Frt	1.00	0.99		1.00	1.00	0.85		0.97			0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.97	
Satd. Flow (prot)	1583	3493		1583	3539	1417		1776			1759	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.99			0.97	
Satd. Flow (perm)	1583	3493		1583	3539	1417		1776			1759	
Volume (vph)	110	796	75	60	606	236	73	115	60	181	76	72
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	116	838	79	63	638	248	77	121	63	191	80	76
RTOR Reduction (vph)	0	7	0	0	0	178	0	11	0	0	10	0
Lane Group Flow (vph)	116	910	0	63	638	70	0	250	0	0	337	0
Turn Type	Prot			Prot		Perm	Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	7.5	25.6		5.0	23.1	23.1		15.8			19.6	
Effective Green, g (s)	7.5	25.6		5.0	23.1	23.1		15.8			19.6	
Actuated g/C Ratio	0.09	0.31		0.06	0.28	0.28		0.19			0.24	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	145	1090		97	997	399		342			420	
v/s Ratio Prot	0.07	c0.26		0.04	c0.18			c0.14			c0.19	
v/s Ratio Perm						0.05						
v/c Ratio	0.80	0.83		0.65	0.64	0.18		0.73			0.80	
Uniform Delay, d1	36.5	26.2		37.6	25.8	22.3		31.1			29.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	26.2	5.7		14.0	1.4	0.2		7.8			10.6	
Delay (s)	62.7	31.9		51.7	27.2	22.5		38.9			40.0	
Level of Service	E	C		D	C	C		D			D	
Approach Delay (s)		35.3			27.6			38.9			40.0	
Approach LOS		D			C			D			D	

Intersection Summary				
HCM Average Control Delay	33.5	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.76			
Actuated Cycle Length (s)	82.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	71.2%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

LOS Engineering

PM Existing + Project
6: Pala Rd (SR-76) & I-15 SB Ramps

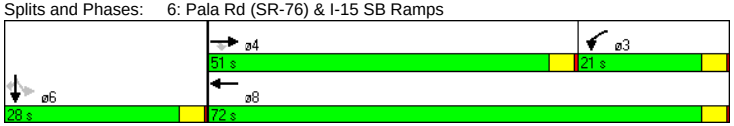
Timings

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Configurations						
Volume (vph)	733	273	193	563	5	433
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	6	
Permitted Phases		4				6
Detector Phases	4	4	3	8	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	8.0	20.0	20.0	20.0
Total Split (s)	51.0	51.0	21.0	72.0	28.0	28.0
Total Split (%)	51.0%	51.0%	21.0%	72.0%	28.0%	28.0%
Yellow Time (s)	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
Lead/Lag	Lead	Lead	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Min	C-Min
Act Effct Green (s)	45.3	45.3	15.8	65.1	26.9	26.9
Actuated g/C Ratio	0.45	0.45	0.16	0.65	0.27	0.27
v/c Ratio	0.92	0.36	0.81	0.49	0.31	0.71
Control Delay	42.1	3.5	32.7	6.4	33.6	16.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.1	3.5	32.7	6.4	33.6	16.0
LOS	D	A	C	A	C	B
Approach Delay	31.7			13.1	20.3	
Approach LOS	C			B	C	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 40 (40%), Referenced to phase 2: and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 22.9 Intersection LOS: C
Intersection Capacity Utilization 90.5% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 6: Pala Rd (SR-76) & I-15 SB Ramps



LOS Engineering

PM Existing + Project
6: Pala Rd (SR-76) & I-15 SB Ramps

Queues

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1700	1700	1900	1700	1700	1900	1700	1700	1900	1700
Storage Length (ft)	0		0	500		0	0		0	0		900
Storage Lanes	0		1	1		0	0		0	0		1
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
Leading Detector (ft)		50	50	50	50					50	50	50
Trailing Detector (ft)		0	0	0	0					0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850									0.850
Flt Protected				0.950							0.954	
Satd. Flow (prot)	0	1863	1417	1583	1863	0	0	0	0	0	1777	1417
Flt Permitted				0.950							0.954	
Satd. Flow (perm)	0	1863	1417	1583	1863	0	0	0	0	0	1777	1417
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			278									353
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		654			1271			961			1209	
Travel Time (s)		14.9			28.9			21.8			27.5	
Volume (vph)	0	733	273	193	563	0	0	0	0	134	5	433
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	772	287	203	593	0	0	0	0	141	5	456
Lane Group Flow (vph)	0	772	287	203	593	0	0	0	0	0	146	456
v/c Ratio		0.92	0.36	0.81	0.49						0.31	0.71
Control Delay		42.1	3.5	32.7	6.4						33.6	16.0
Queue Delay		0.0	0.0	0.0	0.0						0.0	0.0
Total Delay		42.1	3.5	32.7	6.4						33.6	16.0
Queue Length 50th (ft)		398	3	90	36						83	58
Queue Length 95th (ft)		#671	47	m104	m8						134	183
Internal Link Dist (ft)		574			1191			881			1129	
Turn Bay Length (ft)				500								900
Base Capacity (vph)		898	827	274	1295						504	655
Starvation Cap Reductn		0	0	0	0						0	0
Spillback Cap Reductn		0	0	0	0						0	0
Storage Cap Reductn		0	0	0	0						0	0
Reduced v/c Ratio		0.86	0.35	0.74	0.46						0.29	0.70

Intersection Summary

Area Type: Other
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

LOS Engineering

PM Existing + Project
6: Pala Rd (SR-76) & I-15 SB Ramps

HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1700	1700	1900	1700	1700	1900	1700	1700	1900	1700
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		1863	1417	1583	1863						1777	1417
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		1863	1417	1583	1863						1777	1417
Volume (vph)	0	733	273	193	563	0	0	0	0	134	5	433
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	772	287	203	593	0	0	0	0	141	5	456
RTOR Reduction (vph)	0	0	152	0	0	0	0	0	0	0	0	258
Lane Group Flow (vph)	0	772	135	203	593	0	0	0	0	0	146	198
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		4		3	8						6	
Permitted Phases			4							6		6
Actuated Green, G (s)		45.3	45.3	15.8	65.1						26.9	26.9
Effective Green, g (s)		45.3	45.3	15.8	65.1						26.9	26.9
Actuated g/C Ratio		0.45	0.45	0.16	0.65						0.27	0.27
Clearance Time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		844	642	250	1213						478	381
v/s Ratio Prot		c0.41		c0.13	0.32							
v/s Ratio Perm			0.10								0.08	c0.14
v/c Ratio		0.91	0.21	0.81	0.49						0.31	0.52
Uniform Delay, d1		25.5	16.5	40.7	8.9						29.1	31.1
Progression Factor		1.00	1.00	0.58	0.69						1.00	1.00
Incremental Delay, d2		14.3	0.2	5.6	0.1						1.6	5.0
Delay (s)		39.8	16.7	29.2	6.3						30.8	36.1
Level of Service		D	B	C	A						C	D
Approach Delay (s)		33.6			12.1			0.0			34.8	
Approach LOS		C			B			A			C	

Intersection Summary				
HCM Average Control Delay	26.9	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.78			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	90.5%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

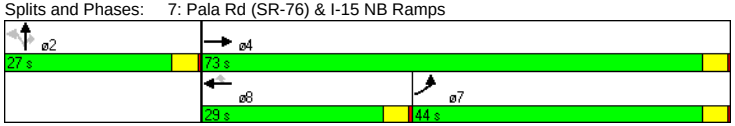
PM Existing + Project
7: Pala Rd (SR-76) & I-15 NB Ramps

Timings

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations						
Volume (vph)	594	292	426	77	4	280
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		2	
Permitted Phases				8		2
Detector Phases	7	4	8	8	2	2
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	44.0	73.0	29.0	29.0	27.0	27.0
Total Split (%)	44.0%	73.0%	29.0%	29.0%	27.0%	27.0%
Yellow Time (s)	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
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	None	None	None	C-Min	C-Min
Act Effct Green (s)	40.0	69.0	25.0	25.0	23.0	23.0
Actuated g/C Ratio	0.40	0.69	0.25	0.25	0.23	0.23
v/c Ratio	0.99	0.24	0.96	0.22	0.99	0.53
Control Delay	51.6	2.1	71.5	22.8	82.1	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.6	2.1	71.5	22.8	82.1	7.8
LOS	D	A	E	C	F	A
Approach Delay		35.3	64.1		50.7	
Approach LOS		D	E		D	

Intersection Summary		
Cycle Length: 100		
Actuated Cycle Length: 100		
Offset: 56 (56%), Referenced to phase 2:NBTL and 6:, Start of Green		
Natural Cycle: 90		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.99		
Intersection Signal Delay: 47.3	Intersection LOS: D	
Intersection Capacity Utilization 90.5%	ICU Level of Service E	
Analysis Period (min) 15		

Splits and Phases: 7: Pala Rd (SR-76) & I-15 NB Ramps



PM Existing + Project
7: Pala Rd (SR-76) & I-15 NB Ramps

Queues

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1700	1700	1900	1700	1700	1900	1700	1700	1900	1700
Storage Length (ft)	450		0	0		50	0		800	0		0
Storage Lanes	1		0	0		1	0		1	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
Leading Detector (ft)	50	50			50	50	50	50	50			
Trailing Detector (ft)	0	0			0	0	0	0	0			
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950							0.953				
Satd. Flow (prot)	1583	1863	0	0	1863	1417	0	1775	1417	0	0	0
Flt Permitted	0.950							0.953				
Satd. Flow (perm)	1583	1863	0	0	1863	1417	0	1775	1417	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						26			295			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1271			2232			991			1241	
Travel Time (s)		28.9			50.7			22.5			28.2	
Volume (vph)	594	292	0	0	426	77	380	4	280	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	625	307	0	0	448	81	400	4	295	0	0	0
Lane Group Flow (vph)	625	307	0	0	448	81	0	404	295	0	0	0
v/c Ratio	0.99	0.24			0.96	0.22		0.99	0.53			
Control Delay	51.6	2.1			71.5	22.8		82.1	7.8			
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			
Total Delay	51.6	2.1			71.5	22.8		82.1	7.8			
Queue Length 50th (ft)	434	32			283	27		258	0			
Queue Length 95th (ft)	m#531	m30			#478	67		#451	69			
Internal Link Dist (ft)		1191			2152			911			1161	
Turn Bay Length (ft)	450					50			800			
Base Capacity (vph)	633	1285			466	374		408	553			
Starvation Cap Reductn	0	0			0	0		0	0			
Spillback Cap Reductn	0	0			0	0		0	0			
Storage Cap Reductn	0	0			0	0		0	0			
Reduced v/c Ratio	0.99	0.24			0.96	0.22		0.99	0.53			

Intersection Summary

Area Type: Other

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

LOS Engineering

PM Existing + Project
7: Pala Rd (SR-76) & I-15 NB Ramps

HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1700	1700	1900	1700	1700	1900	1700	1700	1900	1700
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1583	1863			1863	1417		1775	1417			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1583	1863			1863	1417		1775	1417			
Volume (vph)	594	292	0	0	426	77	380	4	280	0	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	625	307	0	0	448	81	400	4	295	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	20	0	0	227	0	0	0
Lane Group Flow (vph)	625	307	0	0	448	62	0	404	68	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	40.0	69.0			25.0	25.0		23.0	23.0			
Effective Green, g (s)	40.0	69.0			25.0	25.0		23.0	23.0			
Actuated g/C Ratio	0.40	0.69			0.25	0.25		0.23	0.23			
Clearance Time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	633	1285			466	354		408	326			
v/s Ratio Prot	c0.39	0.16			c0.24							
v/s Ratio Perm						0.04		0.23	0.05			
v/c Ratio	0.99	0.24			0.96	0.17		0.99	0.21			
Uniform Delay, d1	29.7	5.8			37.0	29.4		38.4	31.1			
Progression Factor	0.86	0.31			1.00	1.00		1.00	1.00			
Incremental Delay, d2	23.6	0.1			31.8	0.2		42.2	1.4			
Delay (s)	49.2	1.9			68.8	29.6		80.6	32.6			
Level of Service	D	A			E	C		F	C			
Approach Delay (s)		33.6			62.8			60.3			0.0	
Approach LOS		C			E			E			A	

Intersection Summary			
HCM Average Control Delay	49.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

LOS Engineering

PM Existing + Project
8: Pala Rd (SR-76) & Pankey Rd

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	32	555	27	5	522	7	14	8	9	0	3	14
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	34	584	28	5	549	7	15	8	9	0	3	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	557			613			967	1233	306	937	1244	278
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	557			613			967	1233	306	937	1244	278
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			99			92	95	99	100	98	98
cM capacity (veh/h)	1010			963			195	169	690	202	166	719

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	34	389	223	5	366	191	33	18
Volume Left	34	0	0	5	0	0	15	0
Volume Right	0	0	28	0	0	7	9	15
cSH	1010	1700	1700	963	1700	1700	235	453
Volume to Capacity	0.03	0.23	0.13	0.01	0.22	0.11	0.14	0.04
Queue Length 95th (ft)	3	0	0	0	0	0	12	3
Control Delay (s)	8.7	0.0	0.0	8.8	0.0	0.0	22.8	13.3
Lane LOS	A			A			C	B
Approach Delay (s)	0.5			0.1			22.8	13.3
Approach LOS							C	B

Intersection Summary					
Average Delay	1.0				
Intersection Capacity Utilization	37.9%	ICU Level of Service		A	
Analysis Period (min)	15				

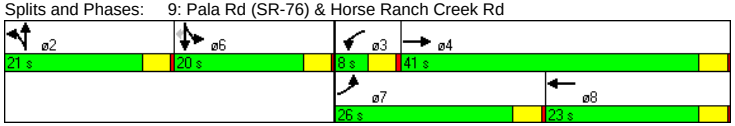
PM Existing + Project
9: Pala Rd (SR-76) & Horse Ranch Creek Rd

Timings

Lane Group	EBL	EBT	WBT	SBL	SBT	SBR	ø2	ø3
Lane Configurations								
Volume (vph)	214	350	442	17	0	92		
Turn Type	Prot			Split		Perm		
Protected Phases	7	4	8	6	6		2	3
Permitted Phases						6		
Detector Phases	7	4	8	6	6	6		
Minimum Initial (s)	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	20.0	20.0	20.0	20.0	8.0
Total Split (s)	26.0	41.0	23.0	20.0	20.0	20.0	21.0	8.0
Total Split (%)	28.9%	45.6%	25.6%	22.2%	22.2%	22.2%	23%	9%
Yellow Time (s)	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
Lead/Lag	Lead	Lag	Lag					Lead
Lead-Lag Optimize?	Yes	Yes	Yes					Yes
Recall Mode	None	None	None	Min	Min	Min	Min	None
Act Effct Green (s)	12.5	26.1	12.7	6.8	6.8	6.8		
Actuated g/C Ratio	0.23	0.50	0.25	0.13	0.13	0.13		
v/c Ratio	0.61	0.21	0.59	0.08	0.21	0.23		
Control Delay	26.8	6.3	21.4	26.1	12.6	12.0		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	26.8	6.3	21.4	26.1	12.6	12.0		
LOS	C	A	C	C	B	B		
Approach Delay		14.1	21.4		14.1			
Approach LOS		B	C		B			

Intersection Summary			
Cycle Length: 90			
Actuated Cycle Length: 51.8			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 17.2		Intersection LOS: B	
Intersection Capacity Utilization 40.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Pala Rd (SR-76) & Horse Ranch Creek Rd



PM Existing + Project
9: Pala Rd (SR-76) & Horse Ranch Creek Rd — Queues

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1700	1700	1900	1700	1700	1900	1700	1700	1900	1700
Storage Length (ft)	250		0	250		250	0		0	150		150
Storage Lanes	1		0	1		0	0		0	1		1
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
Leading Detector (ft)	50	50		50	50		50	50		50	50	50
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.91	0.95
Frt					0.988						0.859	0.850
Flt Protected	0.950									0.950	0.997	
Satd. Flow (prot)	1583	3539	0	1667	3497	0	0	1863	0	1504	1452	1346
Flt Permitted	0.950									0.950	0.997	
Satd. Flow (perm)	1583	3539	0	1667	3497	0	0	1863	0	1504	1452	1346
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					9						46	51
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2833			5160			734			1509	
Travel Time (s)		64.4			117.3			16.7			34.3	
Volume (vph)	214	350	0	0	442	40	0	0	0	17	0	92
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	225	368	0	0	465	42	0	0	0	18	0	97
Lane Group Flow (vph)	225	368	0	0	507	0	0	0	0	15	49	51
v/c Ratio	0.61	0.21			0.59					0.08	0.21	0.23
Control Delay	26.8	6.3			21.4					26.1	12.6	12.0
Queue Delay	0.0	0.0			0.0					0.0	0.0	0.0
Total Delay	26.8	6.3			21.4					26.1	12.6	12.0
Queue Length 50th (ft)	62	26			72					4	1	0
Queue Length 95th (ft)	141	46			141					23	31	30
Internal Link Dist (ft)		2753			5080			654			1429	
Turn Bay Length (ft)	250									150		150
Base Capacity (vph)	558	2176			1187					411	431	405
Starvation Cap Reductn	0	0			0					0	0	0
Spillback Cap Reductn	0	0			0					0	0	0
Storage Cap Reductn	0	0			0					0	0	0
Reduced v/c Ratio	0.40	0.17			0.43					0.04	0.11	0.13

Intersection Summary
Area Type: Other

LOS Engineering

PM Existing + Project
9: Pala Rd (SR-76) & Horse Ranch Creek Rd — HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1700	1700	1900	1700	1700	1900	1700	1700	1900	1700
Total Lost time (s)	4.0	4.0			4.0					4.0	4.0	4.0
Lane Util. Factor	1.00	0.95			0.95					0.95	0.91	0.95
Frt	1.00	1.00			0.99					1.00	0.86	0.85
Flt Protected	0.95	1.00			1.00					0.95	1.00	1.00
Satd. Flow (prot)	1583	3539			3495					1504	1452	1346
Flt Permitted	0.95	1.00			1.00					0.95	1.00	1.00
Satd. Flow (perm)	1583	3539			3495					1504	1452	1346
Volume (vph)	214	350	0	0	442	40	0	0	0	17	0	92
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	225	368	0	0	465	42	0	0	0	18	0	97
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	0	0	40	44
Lane Group Flow (vph)	225	368	0	0	500	0	0	0	0	15	9	7
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	10.4	27.1			12.7					6.7	6.7	6.7
Effective Green, g (s)	10.4	27.1			12.7					6.7	6.7	6.7
Actuated g/C Ratio	0.20	0.52			0.25					0.13	0.13	0.13
Clearance Time (s)	4.0	4.0			4.0					4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	318	1851			857					195	188	174
v/s Ratio Prot	c0.14	0.10			c0.14					c0.01	0.01	
v/s Ratio Perm												0.00
v/c Ratio	0.71	0.20			0.58					0.08	0.05	0.04
Uniform Delay, d1	19.3	6.6			17.2					19.8	19.8	19.7
Progression Factor	1.00	1.00			1.00					1.00	1.00	1.00
Incremental Delay, d2	7.0	0.1			1.0					0.2	0.1	0.1
Delay (s)	26.3	6.6			18.2					20.0	19.9	19.8
Level of Service	C	A			B					B	B	B
Approach Delay (s)		14.1			18.2			0.0			19.9	
Approach LOS		B			B			A			B	

Intersection Summary				
HCM Average Control Delay	16.4	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.51			
Actuated Cycle Length (s)	51.8	Sum of lost time (s)	22.0	
Intersection Capacity Utilization	40.1%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

LOS Engineering

PM Existing + Project
12: Pala Mesa Dr & Old Hwy 395 HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	13	16	24	27	7	3	46	329	62	8	165	27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	14	17	25	28	7	3	48	346	65	8	174	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	655	713	188	700	695	379	202			412		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	655	713	188	700	695	379	202			412		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	95	97	91	98	100	96			99		
cM capacity (veh/h)	360	342	854	320	350	668	1370			1147		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	56	28	11	48	412	8	202
Volume Left	14	28	0	48	0	8	0
Volume Right	25	0	3	0	65	0	28
cSH	477	320	409	1370	1700	1147	1700
Volume to Capacity	0.12	0.09	0.03	0.04	0.24	0.01	0.12
Queue Length 95th (ft)	10	7	2	3	0	1	0
Control Delay (s)	13.5	17.3	14.0	7.7	0.0	8.2	0.0
Lane LOS	B	C	B	A		A	
Approach Delay (s)	13.5	16.5		0.8		0.3	
Approach LOS	B	C					

Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	44.1%	ICU Level of Service	A	
Analysis Period (min)	15			

LOS Engineering

PM Existing + Project
14: Stewart Canyon Rd & Old Hwy 395 HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	8	3	18	22	1	90	21	259	20	155	168	19
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	8	3	19	23	1	95	22	273	21	163	177	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	925	851	187	851	851	283	197			294		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	925	851	187	851	851	283	197			294		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	99	98	90	100	87	98			87		
cM capacity (veh/h)	194	255	855	242	255	756	1376			1268		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	31	119	22	294	163	197
Volume Left	8	23	22	0	163	0
Volume Right	19	95	0	21	0	20
cSH	391	528	1376	1700	1268	1700
Volume to Capacity	0.08	0.23	0.02	0.17	0.13	0.12
Queue Length 95th (ft)	6	21	1	0	11	0
Control Delay (s)	15.0	13.8	7.7	0.0	8.3	0.0
Lane LOS	B	B	A		A	
Approach Delay (s)	15.0	13.8	0.5		3.7	
Approach LOS	B	B				

Intersection Summary				
Average Delay	4.4			
Intersection Capacity Utilization	42.6%	ICU Level of Service	A	
Analysis Period (min)	15			

LOS Engineering

PM Existing + Project
15: Reche Rd & Old Hwy 395 HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	205	208	224	127	164	152
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	216	219	236	134	173	160
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	858	253	333			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	858	253	333			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	18	72	81			
cM capacity (veh/h)	264	786	1227			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	435	236	134	333
Volume Left	216	236	0	0
Volume Right	219	0	0	160
cSH	397	1227	1700	1700
Volume to Capacity	1.09	0.19	0.08	0.20
Queue Length 95th (ft)	383	18	0	0
Control Delay (s)	105.5	8.6	0.0	0.0
Lane LOS	F	A		
Approach Delay (s)	105.5	5.5		0.0
Approach LOS	F			

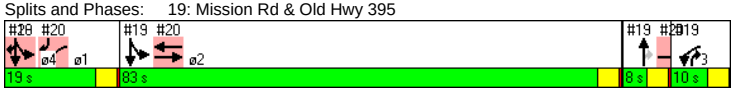
Intersection Summary			
Average Delay		42.1	
Intersection Capacity Utilization		68.7%	ICU Level of Service C
Analysis Period (min)		15	

PM Existing + Project
19: Mission Rd & Old Hwy 395 Timings

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø1	ø4
Lane Configurations								
Volume (vph)	284	688	35	262	970	28		
Turn Type		Free		pm+ov	Split			
Protected Phases	1 4		3	1 4	2	2	1	4
Permitted Phases		Free		3				
Detector Phases	1 4		3	1 4	2	2		
Minimum Initial (s)			4.0		4.0	4.0	4.0	4.0
Minimum Split (s)			20.0		20.0	20.0	8.0	20.0
Total Split (s)	29.0	0.0	8.0	29.0	83.0	83.0	19.0	10.0
Total Split (%)	24.2%	0.0%	6.7%	24.2%	69.2%	69.2%	16%	8%
Yellow Time (s)			3.5		3.5	3.5	3.5	3.5
All-Red Time (s)			0.5		0.5	0.5	0.5	0.5
Lead/Lag			Lead		Lag	Lag	Lead	Lag
Lead-Lag Optimize?			Yes					Yes
Recall Mode			None		None	None	None	None
Act Effct Green (s)	25.0	120.0	4.0	33.0	79.0	79.0		
Actuated g/C Ratio	0.21	1.00	0.03	0.28	0.66	0.66		
v/c Ratio	0.91	0.51	0.60	0.71	0.98	0.02		
Control Delay	74.9	1.2	93.7	50.5	44.2	7.2		
Queue Delay	0.0	0.0	0.0	0.0	39.0	0.0		
Total Delay	74.9	1.2	93.7	50.5	83.3	7.2		
LOS	E	A	F	D	F	A		
Approach Delay	22.7		55.6			81.2		
Approach LOS	C		E			F		

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
Natural Cycle: 150		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.98		
Intersection Signal Delay: 52.8	Intersection LOS: D	
Intersection Capacity Utilization 91.0%	ICU Level of Service E	
Analysis Period (min) 15		

Splits and Phases: 19: Mission Rd & Old Hwy 395



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1700	1700	1900	1700	1700	1900
Storage Length (ft)	0	130		210	100	
Storage Lanes	1	1		1	1	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0
Turning Speed (mph)	15	9		9	15	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1583	1417	1863	1417	1583	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1583	1417	1863	1417	1583	1863
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30		30			30
Link Distance (ft)	434		4960			1035
Travel Time (s)	9.9		112.7			23.5
Volume (vph)	284	688	35	262	970	28
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	299	724	37	276	1021	29
Lane Group Flow (vph)	299	724	37	276	1021	29
v/c Ratio	0.91	0.51	0.60	0.71	0.98	0.02
Control Delay	74.9	1.2	93.7	50.5	44.2	7.2
Queue Delay	0.0	0.0	0.0	0.0	39.0	0.0
Total Delay	74.9	1.2	93.7	50.5	83.3	7.2
Queue Length 50th (ft)	222	9	29	193	700	7
Queue Length 95th (ft) m	#310	m6	#84	295	#1059	18
Internal Link Dist (ft)	354		4880			955
Turn Bay Length (ft)		130		210	100	
Base Capacity (vph)	330	1417	62	390	1042	1226
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	113	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.51	0.60	0.71	1.10	0.02

Intersection Summary	
Area Type:	Other

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1700	1700	1900	1700	1700	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1583	1417	1863	1417	1583	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1583	1417	1863	1417	1583	1863
Volume (vph)	284	688	35	262	970	28
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	299	724	37	276	1021	29
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	299	724	37	276	1021	29
Turn Type		Free		pm+ov	Split	
Protected Phases	1 4		3	1 4	2	2
Permitted Phases		Free		3		
Actuated Green, G (s)	25.0	120.0	4.0	29.0	79.0	79.0
Effective Green, g (s)	25.0	120.0	4.0	29.0	79.0	79.0
Actuated g/C Ratio	0.21	1.00	0.03	0.24	0.66	0.66
Clearance Time (s)			4.0		4.0	4.0
Vehicle Extension (s)			3.0		3.0	3.0
Lane Grp Cap (vph)	330	1417	62	390	1042	1226
v/s Ratio Prot	c0.19		0.02	c0.15	c0.64	0.02
v/s Ratio Perm		c0.51		0.05		
v/c Ratio	0.91	0.51	0.60	0.71	0.98	0.02
Uniform Delay, d1	46.4	0.0	57.2	41.6	19.7	7.1
Progression Factor	1.09	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.9	0.9	14.5	5.8	22.8	0.0
Delay (s)	71.6	0.9	71.7	47.4	42.5	7.1
Level of Service	E	A	E	D	D	A
Approach Delay (s)	21.6		50.3			41.5
Approach LOS	C		D			D

Intersection Summary			
HCM Average Control Delay	34.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	91.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

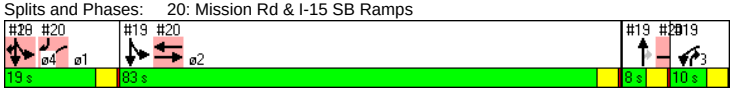
PM Existing + Project
20: Mission Rd & I-15 SB Ramps

Timings

Lane Group	EBT	WBL	WBT	SBT	SBR	ø3
Lane Configurations						
Volume (vph)	1141	44	322	2	652	
Turn Type		Prot			custom	
Protected Phases	2 3	1	2	4	1 4	3
Permitted Phases					4	
Detector Phases	2 3	1	2	4	1 4	
Minimum Initial (s)		4.0	4.0	4.0		4.0
Minimum Split (s)		8.0	20.0	20.0		20.0
Total Split (s)	91.0	19.0	83.0	10.0	29.0	8.0
Total Split (%)	75.8%	15.8%	69.2%	8.3%	24.2%	7%
Yellow Time (s)		3.5	3.5	3.5		3.5
All-Red Time (s)		0.5	0.5	0.5		0.5
Lead/Lag		Lead	Lag	Lag		Lead
Lead-Lag Optimize?				Yes		Yes
Recall Mode		None	None	None		None
Act Effct Green (s)	87.0	15.0	79.0	6.0	25.0	
Actuated g/C Ratio	0.72	0.12	0.66	0.05	0.21	
v/c Ratio	0.96	0.23	0.28	0.11	0.90	
Control Delay	19.1	50.8	9.3	57.3	23.9	
Queue Delay	32.1	0.0	0.0	0.7	0.0	
Total Delay	51.2	50.8	9.3	58.0	23.9	
LOS	D	D	A	E	C	
Approach Delay	51.2		14.2	24.4		
Approach LOS	D		B	C		

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 37.3		Intersection LOS: D	
Intersection Capacity Utilization 75.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 20: Mission Rd & I-15 SB Ramps



LOS Engineering

PM Existing + Project
20: Mission Rd & I-15 SB Ramps

Queues

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1700	1700	1900	1700	1700	1900	1700	1700	1900	1700
Storage Length (ft)	0		0	285		0	0		0	0		200
Storage Lanes	0		0	1		0	0		0	0		1
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
Leading Detector (ft)		50		50	50					50	50	50
Trailing Detector (ft)		0		0	0					0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991										0.850
Flt Protected				0.950							0.962	
Satd. Flow (prot)	0	1846	0	1583	1863	0	0	0	0	0	1792	1417
Flt Permitted				0.950							0.962	
Satd. Flow (perm)	0	1846	0	1583	1863	0	0	0	0	0	1792	1417
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8										589
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		434			744			972			897	
Travel Time (s)		9.9			16.9			22.1			20.4	
Volume (vph)	0	1141	85	44	322	0	0	0	0	8	2	652
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1201	89	46	339	0	0	0	0	8	2	686
Lane Group Flow (vph)	0	1290	0	46	339	0	0	0	0	0	10	686
v/c Ratio		0.96		0.23	0.28						0.11	0.90
Control Delay		19.1		50.8	9.3						57.3	23.9
Queue Delay		32.1		0.0	0.0						0.7	0.0
Total Delay		51.2		50.8	9.3						58.0	23.9
Queue Length 50th (ft)		455		33	101						8	69
Queue Length 95th (ft)		m#646		70	146						26	#337
Internal Link Dist (ft)		354			664			892			817	
Turn Bay Length (ft)				285								200
Base Capacity (vph)		1341		198	1226						90	762
Starvation Cap Reductn		141		0	0						0	0
Spillback Cap Reductn		139		0	0						24	0
Storage Cap Reductn		0		0	0						0	0
Reduced v/c Ratio		1.07		0.23	0.28						0.15	0.90

Intersection Summary	
Area Type:	Other
#	95th percentile volume exceeds capacity, queue may be longer.
	Queue shown is maximum after two cycles.
m	Volume for 95th percentile queue is metered by upstream signal.

LOS Engineering

PM Existing + Project
20: Mission Rd & I-15 SB Ramps

HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1700	1700	1900	1700	1700	1900	1700	1700	1900	1700
Total Lost time (s)		4.0		4.0	4.0						4.0	4.0
Lane Util. Factor		1.00		1.00	1.00						1.00	1.00
Frt		0.99		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.96	1.00
Satd. Flow (prot)		1845		1583	1863						1791	1417
Flt Permitted		1.00		0.95	1.00						0.96	1.00
Satd. Flow (perm)		1845		1583	1863						1791	1417
Volume (vph)	0	1141	85	44	322	0	0	0	0	8	2	652
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1201	89	46	339	0	0	0	0	8	2	686
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	0	466
Lane Group Flow (vph)	0	1288	0	46	339	0	0	0	0	0	10	220
Turn Type				Prot						Split		custom
Protected Phases		2 3		1	2					4	4	1 4
Permitted Phases												4
Actuated Green, G (s)		87.0		15.0	79.0						6.0	25.0
Effective Green, g (s)		87.0		15.0	79.0						6.0	25.0
Actuated g/C Ratio		0.72		0.12	0.66						0.05	0.21
Clearance Time (s)				4.0	4.0						4.0	
Vehicle Extension (s)				3.0	3.0						3.0	
Lane Grp Cap (vph)		1338		198	1226						90	295
v/s Ratio Prot		c0.70		0.03	0.18						0.01	c0.16
v/s Ratio Perm												
v/c Ratio		0.96		0.23	0.28						0.11	0.74
Uniform Delay, d1		15.0		47.3	8.6						54.5	44.5
Progression Factor		0.60		1.00	1.00						1.00	1.00
Incremental Delay, d2		8.2		0.6	0.1						0.5	9.8
Delay (s)		17.1		47.9	8.7						55.0	54.3
Level of Service		B		D	A						E	D
Approach Delay (s)		17.1			13.4			0.0			54.3	
Approach LOS		B			B			A			D	

Intersection Summary			
HCM Average Control Delay	27.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

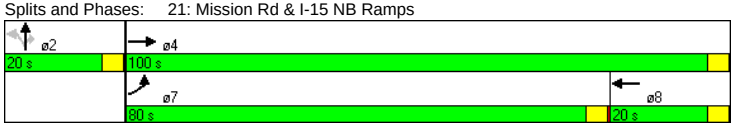
PM Existing + Project
21: Mission Rd & I-15 NB Ramps

Timings

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Configurations					
Volume (vph)	943	190	172	2	77
Turn Type	Prot				Perm
Protected Phases	7	4	8	2	
Permitted Phases					2
Detector Phases	7	4	8	2	2
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	20.0	20.0	20.0
Total Split (s)	80.0	100.0	20.0	20.0	20.0
Total Split (%)	66.7%	83.3%	16.7%	16.7%	16.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	73.5	91.9	14.4	14.4	14.4
Actuated g/C Ratio	0.64	0.80	0.13	0.13	0.13
v/c Ratio	0.98	0.13	0.78	0.79	0.33
Control Delay	44.5	2.8	72.4	74.4	13.9
Queue Delay	17.4	0.0	0.0	0.0	0.0
Total Delay	61.9	2.8	72.4	74.4	13.9
LOS	E	A	E	E	B
Approach Delay		52.0	72.4	55.4	
Approach LOS		D	E	E	

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 114.4		
Natural Cycle: 110		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.98		
Intersection Signal Delay: 54.8	Intersection LOS: D	
Intersection Capacity Utilization 86.9%	ICU Level of Service E	
Analysis Period (min) 15		

Splits and Phases: 21: Mission Rd & I-15 NB Ramps



PM Existing + Project
21: Mission Rd & I-15 NB Ramps

Queues

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1700	1700	1900	1700	1700	1900	1700	1700	1900	1700
Storage Length (ft)	300		0	0		0	0		200	0		0
Storage Lanes	1		0	0		0	0		1	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
Leading Detector (ft)	50	50			50		50	50	50			
Trailing Detector (ft)	0	0			0		0	0	0			
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.998				0.850			
Flt Protected	0.950							0.953				
Satd. Flow (prot)	1583	1863	0	0	1859	0	0	1775	1417	0	0	0
Flt Permitted	0.950							0.953				
Satd. Flow (perm)	1583	1863	0	0	1859	0	0	1775	1417	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1				81			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		744			1271			1082			1005	
Travel Time (s)		16.9			28.9			24.6			22.8	
Volume (vph)	943	190	0	0	172	3	166	2	77	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	993	200	0	0	181	3	175	2	81	0	0	0
Lane Group Flow (vph)	993	200	0	0	184	0	0	177	81	0	0	0
v/c Ratio	0.98	0.13			0.78			0.79	0.33			
Control Delay	44.5	2.8			72.4			74.4	13.9			
Queue Delay	17.4	0.0			0.0			0.0	0.0			
Total Delay	61.9	2.8			72.4			74.4	13.9			
Queue Length 50th (ft)	704	28			138			134	0			
Queue Length 95th (ft)	#1044	44			#243			#240	46			
Internal Link Dist (ft)		664			1191			1002			925	
Turn Bay Length (ft)	300								200			
Base Capacity (vph)	1030	1509			259			247	266			
Starvation Cap Reductn	72	0			0			0	0			
Spillback Cap Reductn	0	0			0			0	0			
Storage Cap Reductn	0	0			0			0	0			
Reduced v/c Ratio	1.04	0.13			0.71			0.72	0.30			

Intersection Summary

Area Type: Other

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

LOS Engineering

PM Existing + Project
21: Mission Rd & I-15 NB Ramps

HCM Signalized Intersection Capacity Analysis

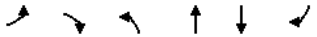
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1700	1900	1700	1700	1900	1700	1700	1900	1700	1700	1900	1700
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0			
Lane Util. Factor	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			1.00			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (prot)	1583	1863			1859			1775	1417			
Flt Permitted	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (perm)	1583	1863			1859			1775	1417			
Volume (vph)	943	190	0	0	172	3	166	2	77	0	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	993	200	0	0	181	3	175	2	81	0	0	0
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	71	0	0	0
Lane Group Flow (vph)	993	200	0	0	183	0	0	177	10	0	0	0
Turn Type	Prot						Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases							2		2			
Actuated Green, G (s)	73.5	91.9			14.4			14.4	14.4			
Effective Green, g (s)	73.5	91.9			14.4			14.4	14.4			
Actuated g/C Ratio	0.64	0.80			0.13			0.13	0.13			
Clearance Time (s)	4.0	4.0			4.0			4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)	1018	1498			234			224	179			
v/s Ratio Prot	c0.63	0.11			c0.10							
v/s Ratio Perm								0.10	0.01			
v/c Ratio	0.98	0.13			0.78			0.79	0.06			
Uniform Delay, d1	19.5	2.5			48.4			48.5	44.0			
Progression Factor	1.00	1.00			1.00			1.00	1.00			
Incremental Delay, d2	22.2	0.0			15.6			17.1	0.1			
Delay (s)	41.7	2.5			64.0			65.6	44.1			
Level of Service	D	A			E			E	D			
Approach Delay (s)		35.2			64.0			58.8			0.0	
Approach LOS		D			E			E			A	

Intersection Summary			
HCM Average Control Delay	42.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	114.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

LOS Engineering

PM Existing + Project

22: Stewart Canyon Rd & Horse Ranch Creek Rd — HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Yield			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	17	154	69	0	0	36
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	18	162	73	0	0	38
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	164	19	38			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	164	19	38			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	85	95			
cM capacity (veh/h)	788	1059	1572			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	180	73	38
Volume Left	18	73	0
Volume Right	162	0	38
cSH	1024	1572	1700
Volume to Capacity	0.18	0.05	0.02
Queue Length 95th (ft)	16	4	0
Control Delay (s)	9.3	7.4	0.0
Lane LOS	A	A	
Approach Delay (s)	9.3	7.4	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	7.6		
Intersection Capacity Utilization	27.6%	ICU Level of Service	A
Analysis Period (min)	15		

LOS Engineering

PM Existing + Project

23: Baltimore Oriole & Horse Ranch Creek Rd — HCM Unsignalized Intersection Capacity Analysis

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	7	5	60	9	10	141
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	7	5	63	9	11	148
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	237	68			73	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	237	68			73	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			99	
cM capacity (veh/h)	746	995			1527	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	13	73	159
Volume Left	7	0	11
Volume Right	5	9	0
cSH	833	1700	1527
Volume to Capacity	0.02	0.04	0.01
Queue Length 95th (ft)	1	0	1
Control Delay (s)	9.4	0.0	0.5
Lane LOS	A		A
Approach Delay (s)	9.4	0.0	0.5
Approach LOS	A		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	24.6%	ICU Level of Service	A
Analysis Period (min)	15		

LOS Engineering

PM Existing + Project

25: Harvest Glen Ln & Horse Ranch Creek Rd — HCM Unsignalized Intersection Capacity Analysis

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	63	19	64	143	46	111
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	66	20	67	151	48	117
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	356	143			218	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	356	143			218	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	89	98			96	
cM capacity (veh/h)	619	905			1352	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	86	218	165
Volume Left	66	0	48
Volume Right	20	151	0
cSH	668	1700	1352
Volume to Capacity	0.13	0.13	0.04
Queue Length 95th (ft)	11	0	3
Control Delay (s)	11.2	0.0	2.5
Lane LOS	B		A
Approach Delay (s)	11.2	0.0	2.5
Approach LOS	B		

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		

LOS Engineering

PM Existing + Project

26: Pardee South Loop & Horse Ranch Creek Rd — HCM Unsignalized Intersection Capacity Analysis

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	83	27	180	183	63	111
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	87	28	189	193	66	117
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	535	286			382	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	535	286			382	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	82	96			94	
cM capacity (veh/h)	477	753			1176	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	116	382	183
Volume Left	87	0	66
Volume Right	28	193	0
cSH	525	1700	1176
Volume to Capacity	0.22	0.22	0.06
Queue Length 95th (ft)	21	0	4
Control Delay (s)	13.8	0.0	3.3
Lane LOS	B		A
Approach Delay (s)	13.8	0.0	3.3
Approach LOS	B		

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

LOS Engineering

PM Existing + Project

27: School/Park Access & Horse Ranch Creek Rd — HCM Unsignalized Intersection Capacity Analysis

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	9	53	316	6	37	161
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	9	56	333	6	39	169

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	65	339	208
Volume Left (vph)	9	0	39
Volume Right (vph)	56	6	0
Hadj (s)	-0.45	0.02	0.07
Departure Headway (s)	4.7	4.3	4.5
Degree Utilization, x	0.08	0.41	0.26
Capacity (veh/h)	691	817	775
Control Delay (s)	8.1	10.2	9.1
Approach Delay (s)	8.1	10.2	9.1
Approach LOS	A	B	A

Intersection Summary				
Delay		9.6		
HCM Level of Service		A		
Intersection Capacity Utilization		41.7%	ICU Level of Service	A
Analysis Period (min)		15		

LOS Engineering

PM Existing + Project

28: Connector Rd & Horse Ranch Creek Rd — HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	116	21	48	206	88	82
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	122	22	51	217	93	86
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	454	136	179			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	454	136	179			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	78	98	96			
cM capacity (veh/h)	544	913	1397			

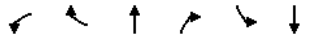
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	144	267	179
Volume Left	122	51	0
Volume Right	22	0	86
cSH	580	1397	1700
Volume to Capacity	0.25	0.04	0.11
Queue Length 95th (ft)	24	3	0
Control Delay (s)	13.3	1.7	0.0
Lane LOS	B	A	
Approach Delay (s)	13.3	1.7	0.0
Approach LOS	B		

Intersection Summary				
Average Delay		4.0		
Intersection Capacity Utilization		41.8%	ICU Level of Service	A
Analysis Period (min)		15		

LOS Engineering

PM Existing + Project

29: Connector Rd & Pankey Rd — HCM Unsignalized Intersection Capacity Analysis



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	17	37	0	40	86	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	18	39	0	42	91	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	202	21			42	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	202	21			42	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	96			94	
cM capacity (veh/h)	741	1056			1567	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	57	42	91
Volume Left	18	0	91
Volume Right	39	42	0
cSH	932	1700	1567
Volume to Capacity	0.06	0.02	0.06
Queue Length 95th (ft)	5	0	5
Control Delay (s)	9.1	0.0	7.4
Lane LOS	A		A
Approach Delay (s)	9.1	0.0	7.4
Approach LOS	A		

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	22.3%	ICU Level of Service	A
Analysis Period (min)	15		

LOS Engineering

Appendix L

SANDAG Series 10 Year 2030 Cumulative Volumes and List

County of San Diego
GP Update EIR

2030 CUMULATIVE
LOS and Volume Plot

FALLBROOK & BONSALL Area

2030 Proposed Network
Model Rerun 12/09/08
With Updated Land Uses

Levels of Service:

- A - C
- D
- E
- F

- Non-Circulation Element
- Zone Connector
- Traffic Analysis Zones

Forecasted Volumes:

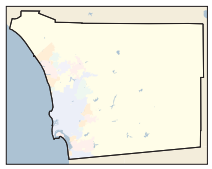
- # Adjusted Volume

Level of Service Calculations

Peak Hour Standards for State Facilities
New County Daily ADT LOS Standards for non-State:

6.1	84	38000	54000	70000	86000	108000	
6.2	75	22200	37000	44500	50000	57000	
4.1A	74	14800	24700	29600	33400	37000	
4.1B	86	13700	22800	27400	30800	34200	
4.1C	69	14800	24700	29600	33400	37000	
4.1D	81	13700	22800	27400	30800	34200	
4.2A	63	14800	24700	29600	33400	37000	
4.3A	98	5700	12500	19000	27000	32500	
4.3B	71	5000	10800	17200	25000	30000	
4.3C	41	2500	5450	8600	12500	15000	
2.1A	56	2800	6500	10300	15000	20500	
2.1B	64	3000	6000	9500	13500	18000	
2.1C	64	3000	6000	9500	13500	19000	
2.1D	52	3000	6000	9500	13500	18000	
2.1E	48	1900	4100	7100	10800	16200	
2.2A	55	3000	6000	9500	13500	18000	
2.2B	65	3000	6000	9500	13500	18000	
2.2C	65	3000	6000	9500	13500	18000	
2.2D	50	3000	6000	9500	13500	19000	
2.2E	45	1900	4100	7100	10800	16200	
2.2F	45	1550	3300	5600	8700	16200	
2.3A	54	1400	3000	5100	8000	12500	
2.3B	66	1400	3000	5100	8000	12500	
2.3C	42	1350	2700	4500	7000	11300	
LPR	39	1350	2700	4500	7000	11300	
LPR	34	1350	2700	4500	7000	11300	

This traffic forecast is based on proprietary information of the County of San Diego and was produced to test the County's proposed DRAFT and BOARD land use assumptions. These data do not reflect SANDAG's 2030 Mobility Emphasis Cities/County Forecast.

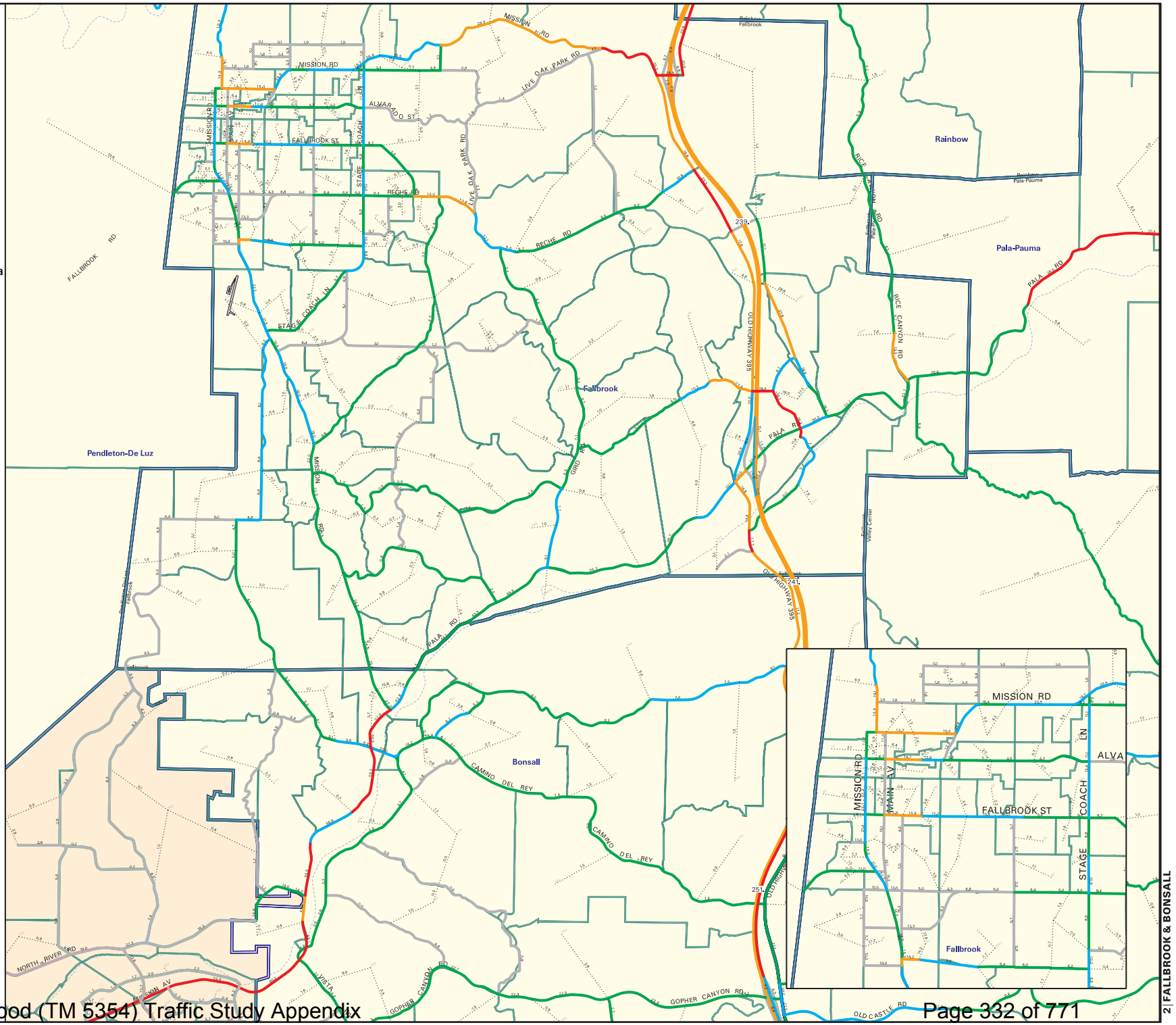


San Diego Region

Feet 0 1,200 2,400
Meters 144 432 720

SANDAG
San Diego's Regional Planning Agency

December 10, 2008



2|FALLBROOK & BONSALL

CUMULATIVE IMPACTS PROJECTS
SAN DIEGO COUNTY

Project Name	Community	GPA	SP/SPA	TM/TPM	Dwelling Units	Non-Residential Land Uses	Acres
PROJECTS INCONSISTENT WITH THE GENERAL PLAN UPDATE							
Brook Forest	**VALLEY CENTER**	**03-008**	**SP 00-001**	5177	84		225.56
MERRIAM MOUNTAINS, GPA, SP, REZ, TM, STP	**BONSALL**	**04-006**	**SP 04-006**	5381	2700	10.1 Acres General Commercial	321.16
FALLBROOK OAKS, GPA, REZ, TM, STP	**FALLBROOK**	**05-006**	**-**	5449	18		26.40
STAR RANCH	**MOUNTAIN EMPIRE**	**05-008**	**SP 05-002**	5459	460	Project proposes charter High School, Historic Ranch and Equestrian Facility	2160.00
PACIFIC SCENE GPA, SP, TM, REZ, OSV	**JAMUL-DULZURA**	**06-002**	**SP 06-001**	5445	55		85.97
WARNER RANCH, GPA, SP, REZ, TM, MUP, AD	**PALA-PAUMA**	**06-009**	**SP 06-002**	5508	900		430.00
CASTLE CREEK CONDOMINIUMS, GPA, SPA, REZ	**VALLEY CENTER**	**06-011**	**SPA 06-007**	5514	63		57.79
MAGNOLIA COURTS(GPA, TM, REZ, STP)	**LAKESIDE**	**07-009**	**-**	5541	38		5.19
PINE VALLEY PARK ESTATES	**CENTRAL MOUNTAIN**	**XX-X2**	**SP 03-001**	5318	22		38.00
SINGING HILLS, SP, TM, REZ, MUP	**CREST-DEHESA**	**XX-XX3**	**SP 04-005**	5380	See Note		526.14
MESQUITE TRAILS RANCH	**DESERT**		**SPA 01-001; SP 04-004**	5373	480		309.51
SPITSBERGER SUBDIVISION	**RAMONA**		**SPA 03-004**	5294	21		137.50
HARMONY GROVE MEADOWS	**NORTH COUNTY METRO**	**05-004**	**SP 05-001**	5430	207		111.09
PASSERELLE, CAMPUS PARK	**FALLBROOK**	**03-004**	**SPA 03-008**	5338	1088	10.81 Ac Office Professional, 8.3 Acres Town Center Mixed Use, 8.3 acres sports complex	500.00
MEADOWOOD	**FALLBROOK**	**04-002**	**SP 04-001**	5354	900		390.00
FUERTE RANCH ESTATES	**VALLE DE ORO**	**03-006**	**-**	5343	40		26.86
RANCHO LILAC	**VALLEY CENTER**	**04-008**	**SP 04-007**	5385	360		693.49
CAMPUS PARK WEST	**FALLBROOK**	**05-003**	**SPA 05-001**	5424	369	50,000 sf General Commercial, 8 ac Office Professional Use, 10 ac Highway Commercial	116.46
JACUMBA VALLEY RANCH GPA, SP, TM	**MOUNTAIN EMPIRE**	**06-014**	**SP 06-003**	5524	2125	37.5 Acres of General Commercial	1216.00
PALA MESA RESORT	**FALLBROOK**	**-**	**SPA 03-005**	5534	143		8.83

CUMULATIVE IMPACTS PROJECTS
SAN DIEGO COUNTY

Project Name	Community	GPA	SP/SPA	TM/TPM	Dwelling Units	Non-Residential Land Uses	Acres
CONSISTENT GPS'S							
PEACEFUL VALLEY RANCH	JAMUL-DULZURA	03-005	-	5341	51		152.76
Montecito Ranch	RAMONA	04-013	SP 01-001	5250	417		935.00
CUMMINGS RANCH, 805 PROPERTIES	RAMONA	03-007	SP 03-005	5344	9		682.02
PEPPERTREE PARK TM 4713	BONSALL	03-XX		4713	48		43.20
OTAY VILLAGE 13, GPA, SP, REZ, TM	OTAY	04-003; 06-019	SP 04-002	5361	2217		525.00
LAKE JENNINGS VILLAGE	LAKESIDE	05-005	-	5444	192		12
Sugarbush	NORTH COUNTY METRO	05-010	SP 03-003	5295	53		115.50
STONEMARSTONEMARK, GPA, REZ, TM	NORTH COUNTY METRO	06-001	-	5479	33		25.77
5853 LINNEA DEL CIELO, GPA, REZ, BC	SAN DIEGUITO	06-003	-				22.84
BONSALL TOWN CENTER, GPA, REZ, TM, STP	BONSALL	06-004	-	5490	61		25.85
HIGHWAY LOS COCHES, GPA, REZ,	LAKESIDE	06-006	-				2.97
ALTI, GPA, REZ,	VALLEY CENTER	06-007	-		N/A		288
FAABORG LOT SPLIT & REZONE REZ; TPM; GPA	RAMONA	07-005	-	21056	2		3.99
ORCHARD HILLS TM 27 LOT SUBDIVISION	NORTH COUNTY METRO	07-006	-	5533	27		9.83
EMBLY REZ	NORTH COUNTY METRO	07-007	-	21062	4		9.79
FLOIT (GPA, Rez, TM, STP)	LAKESIDE	07-008	-	5536	27		2.30
LAZY A RANCH, GPA, SP, TM, REZ, MUP	ALPINE	07-010	SP 07-002	5546	186		70.80
CHOCOLATE MOUNTAIN RANCH	ALPINE	99-05	-	5144	117		242.00
PETERSON	ALPINE	99-06	-	5210	25		63.42
ALPINE RANCH TM 5322	ALPINE	99-08	-	5322	29		254.00
ALPINE OAKS ESTATES	ALPINE	99-09	-	5330	9		38.68
SP AND 51 LOT SUB	VALLEY CENTER		SP 01-003	5263	51		273.00
Whitehall	SPRING VALLEY		SP 02-002	5299	211		176.58

CUMULATIVE IMPACTS PROJECTS
SAN DIEGO COUNTY

Project Name	Community	GPA	SP/SPA	TM/TPM	Dwelling Units	Non-Residential Land Uses	Acres
BORREGO WEST, SPA, REZ,TM, 178 LOTS	**DESERT**		**SP 92-001; SPA 05-002**	5319	177		166.27
The Bridges HCC Investors	**SAN DIEGUITO**		**SPA 01-004; SPA 03-006**	5270	216		445.00
THE BRIDGES	**SAN DIEGUITO**		**SPA 01-004; SPA 03-006**	5239	36		99.30
JUDD AND DILLARD,OTAY CROSSING	**OTAY**		**SPA 04-006**	5405	31	Commercial/Indsutrial Project	311.00
Borrego Spring Country Club	**DESERT**		**SPA 05-002**	5309	255		330.00
RANCHO CIELO	**SAN DIEGUITO**		**SPA 05-004**	5440	29		23.06
THE HIGHLANDS AT WARNER SPRINGS	**NORTH MOUNTAIN**		**SPA 06-001**	5450	28		149.00
VISTA RIDGE TM	**SAN DIEGUITO**		**SPA 06-002**	5418	8		20.00
VISTA HILLS, TM, REZ , STP, 8 LOTS	**SAN DIEGUITO**		**SPA 06-002**	5415	8		26.17
LAKE RANCHO VIEJO UNIT 3 SPA REMOVE RV PARKING	**FALLBROOK**		**SPA 07-001**				3.20
SUNROAD OTAY PARTNERS(SPA/TM)	**OTAY**		**SPA 07-003**	5538	60	Commercial/Indsutrial Project	179.00
SAN DIEGO CORRECTIONAL FACILITY	**OTAY**		**SPA 06-005**				39.09

Table 3-5. Projects Inconsistent with the Proposed General Plan Update

Project No.	Project Name	Required Approvals	Community	Dwelling Units	Acres
1	Park Alpine (TM 5433)	TMAlpine	41	117.54	
2	Rancho Nuevo (TM 5475)	TM	Alpine	18	60.14
3	Mckany (TPM 21044)	TPM	Alpine	4	1.53
4	Daoud Subdivision (TPM 20832)	TPM	Alpine	3	23.91
5	West Lilac Farms I & II (TM 5276)	TM	Bonsall	34	92.00
6	Dabbs (TM 5346)	TM	Bonsall	9	38.37
7	Merriam Mountains (GPA 04-006)	GPA/SP/TM/REZ	Bonsall	1200	321.16
8	Brisa Del Mar (TM 5492)	TM/	Bonsall	27	206.00
9	Tabata (TPM 20729)	TPM	Bonsall	4	33.75
10	Cunningham (TPM 20788)	TPM	Bonsall	3	26.11
11	Stehly Caminito Quieto (TPM 20799)	TPM	Bonsall	4	11.69
12	Tran (TPM 20835)	TPM	Bonsall	5	16.86
13	Northcutt, (TPM 20860)	TPM	Bonsall	2	11.77
14	Pfaff (TPM 21016)	TPM	Bonsall	2	7.79
15	Dienhart (TPM 20664)	TPM	Bonsall	3	28.36
16	Marquart Ranch (TM 5410)	TM	Bonsall	9	44.20
17	Twin Oaks 4 (TPM 20954)	TPM	Bonsall	4	37.93
18	Palisades Estates (TM 5158)	TM	Bonsall	38	408.40
19	Kendall Family Trust (TPM 20849)	TPM	Bonsall	2	5.01
20	Pine Creek Ranch (TM 5236)	TM	Central Mountain	19	109.08
21	Pine Valley Park Estates (SP 03-001)	GPA/SP/REZ/TM	Central Mountain	22	38.30
22	The Slope (TPM 20765)	TPM	Central Mountain	4	35.00
23	Kenyon (TPM 20857)	TPM	Central Mountain	3	15.88
24	Shellstrom, (TPM 21094)	TPM	Central Mountain	4	23.04
25	4740 Dehesa Road/Sloan Canyon Road (TM 5485)	TM	Crest-Dehesa	10	31.89
26	Kemerko (TPM 20716)	TPM	Crest-Dehesa	5	93.10
27	Price (TPM 20762)	TPM	Crest-Dehesa	3	24.30
28	Walls (TPM 21008)	TPM	Crest-Dehesa	5	72.00
29	Kearney (TPM 20715)	TPM	Crest-Dehesa	3	13.30
30	Williams (TPM 20875)	TPM	Crest-Dehesa	2	9.00
31	Bursztyn (TPM 20840)	TPM	Crest-Dehesa	4	23.52
32	Woodhead (TPM 20541)	TPM	Crest-Dehesa	4	24.00
33	Mesquite Trails Ranch (SP 04-004)	SP/TM/MUP	Desert	480	309.51
34	Borrego Country Club Estates (TM 5487)	TM	Desert	148	172.07
35	Borrego 50 (TM 5511)	TM	Desert	34	50.09
36	Borrego Springs Senior Condominiums (TM 5512)	TM	Desert	122	5.24
37	Yaqui Pass (TPM 5513)	TPM	Desert	72	33.10
38	Inland Land Development (TM 5528)	TM	Desert	331	136.67
39	Desert Diamond (TPM 21017)	TPM	Desert	5	169.84
40	Bowen/Jonas (TPM 21027)	TPM	Desert	5	80.00
41	Henderson Canyon (TPM 21058)	TPM	Desert	4	114.90
42	Chaffin (TM 5217)	TM	Fallbrook	31	455.86
43	Chaffin (TM 5227)	TM	Fallbrook	4	46.50
44	Chandler (TM 5284)	TM	Fallbrook	12	80.00
45	Passerelle, Campus Park (SP 03-004)	GPA/SPA/REZ/TM	Fallbrook	950	500.00
46	Meadowood (GPA 04-002)	GPA/SP/REZ/TM	Fallbrook	1248	390.00
47	Fallbrook Oaks (GPA 05-006)	GPA/TM/REZ	Fallbrook	18	26.40
48	Fallbrook Ranch (TM 5532)	TM	Fallbrook	11	41.00
49	Kern Property (TPM 20952)	TPM	Fallbrook	4	19.56
50	Campus Park West (GPA 05-003)	GPA/SPA/REZ/TM	Fallbrook	369	116
51	Hoskings Ranch, Genesee Properties	TM	Jamul-Dulzura	33	1417.40

Project No.	Project Name	Required Approvals	Community	Dwelling Units	Acres
	(TM 5312)				
52	Pacific Scene (GPA 06-002)	GPA/SP/TM/REZ	Jamul-Dulzura	55	85.97
53	Preski/Gonya (TPM 20720)	TPM	Jamul-Dulzura	4	40.33
54	Pijnenburg (TPM 20778)	TPM	Jamul-Dulzura	5	76.40
55	Jamul (TPM 20786)	TPM	Jamul-Dulzura	1	43.69
56	Hoskings Ranch Road (TPM 20863)	TPM	Jamul-Dulzura	3	150.27
57	Swift (TPM 20903)	TPM	Jamul-Dulzura	1	16.42
58	Skyline Truck Trail (TPM 21028)	TPM	Jamul-Dulzura	5	47.78
59	Ava Loma III (TPM 21039)	TPM	Jamul-Dulzura	4	87.90
60	Allen (TPM 21045)	TPM	Jamul-Dulzura	2	24.14
61	Hamilton (TPM 21060)	TPM	Jamul-Dulzura	2	24.29
62	Renteria (TPM 21107)	TPM	Jamul-Dulzura	4	60.38
63	Tibbot (TPM 20686)	TPM	Jamul-Dulzura	4	35.51
64	Robnett TPM 20726	TPM	Jamul-Dulzura	5	85.95
65	Titus Project (TPM 20965)	TPM	Jamul-Dulzura	3	11.10
66	Los Coches Development LLC (TM 5306)	TM	Lakeside	73	78.80
67	Schmidt Project (TM 5434)	TM	Lakeside	4	114.94
68	Magnolia Courts (GPA 07-009)	GPA/TM/REZ	Lakeside	38	5.19
69	Hiel (TPM 20925)	TPM	Lakeside	2	0.71
70	Parkside Villa (TPM 21048)	TPM	Lakeside	3	0.00
71	Bradley Avenue (TM 5422)	TM	Lakeside	30	1.25
72	Lakeside (TPM 20916)	TPM	Lakeside	3	1.21
73	Harvest Glen (TM 5366)	TM	Mountain Empire	40	284.43
74	Vaughan (TM 5417)	TM	Mountain Empire	13	81.15
75	Star Ranch (GPA 05-008)	GPA/SP/REZ/TM	Mountain Empire	460	2160.00
76	Potrero Valley Road (TM 5484)	TM	Mountain Empire	8	73.50
77	Arellano (TPM 20756)	TPM	Mountain Empire	3	17.27
78	Garza (TPM 20777)	TPM	Mountain Empire	5	53.33
79	Bennett (TPM 20784)	TPM	Mountain Empire	5	47.53
80	Powell Subdivision (TPM 20798)	TPM	Mountain Empire	4	40.00
81	Volli (TPM 20889)	TPM	Mountain Empire	4	40.00
82	Elder (TPM 20981)	TPM	Mountain Empire	5	109.25
84	Heald Development (TPM 21014)	TPM	Mountain Empire	5	36
85	Davis-Inman (TPM 21081)	TPM	Mountain Empire	4	97.00
86	Grizzle (TPM 20719)	TPM	Mountain Empire	5	245.00
87	Bartlett (TPM 20754)	TPM	Mountain Empire	4	164.70
88	Sugarbush (GPA 05-010)	GPA/SP/REZ/TM	N. County Metro	53	115.50
89	Merriam Mountains (04-006)	GPA/SP/TM/REZ	N. County Metro	1200	321.16
90	Kawano Subdivision (TM 5401)	TM	N. County Metro	9	10.27
91	Tai Estates (TM 5409)	TM	N. County Metro	11	46.88
92	Harmony Grove Meadows (GPA 05-004)	GPA/SP/REZ/TM	N. County Metro	207	111.09
93	Pizzuto Property (TPM 20846)	TPM	N. County Metro	3	40.00
94	Montiel Road Townhomes (GPA 04-007)	GPA/TM	N. County Metro	70	4.86
95	Rimsa TPM (TPM 21095)	TPM	N. County Metro	2	12.5
96	Ranchita Subdivision (TM 5516)	TM	North Mountain	13	147.88
97	Los Robles Ranch (TM 5526)	TM	North Mountain	15	646.00
98	Shadow Run Ranch LLC (TM 5223)	TM	Pala-Pauma	46	263.17
99	The Prominence at Pala (TM 5321)	TM	Pala-Pauma	37	413.93
100	Pala 114 (TM 5497)	TM	Pala-Pauma	11	113.89
101	Pauma Ranches (TM 5506)	TM	Pala-Pauma	22	99.83
102	Warner Ranch (GPA 06-009)	GPA/SP/TM/REZ/MUP	Pala-Pauma	900	430.00
103	Ruffin/Johnson (TPM 20725)	TPM	Pala-Pauma	5	73.11
104	Donald Jenkins (TPM 21023)	TPM	Pala-Pauma	2	10.35
105	Jay Long (TPM 21066)	TPM	Pala-Pauma	2	17.75

Project No.	Project Name	Required Approvals	Community	Dwelling Units	Acres
106	Pala Pauma (TPM 20611)	TPM	Pala-Pauma	4	54.66
107	Wexler (TPM 20913)	TPM	Pala-Pauma	4	4.80
108	Townsend (TPM 20736)	TPM	Pendleton-De Luz	4	20.00
109	Tenaja (TPM 21049)	TPM	Pendleton-De Luz	2	27.75
110	Oswald (TPM 20533)	TPM	Rainbow	4	47.20
111	Brown (TPM 20717)	TPM	Rainbow	4	31.18
112	Silvola (TPM 20658)	TPM	Rainbow	3	26.16
113	M.D.S. Dev. Corp./Deca (TM 4962)	TM	Ramona	30	75.00
114	Ramona Ridge Estates (TM 5008)	TM	Ramona	25	219.35
115	Rancho Esquilago (TM 5198)	TM	Ramona	38	147.68
116	Development Venture (TM 5254)	TM	Ramona	67	327.00
117	Spitsbergen Subdivision (03-004)	SPA/TM	Ramona	21	137.50
118	Lakeside Ventures (TM 5307)	TM	Ramona	8	202.00
119	Valley Park Condominiums (TM 5480)	TM	Ramona	62	2.87
120	McCandless (TPM 20564)	TPM	Ramona	5	41.00
121	Kvaas (TPM 20747)	TPM	Ramona	5	60.00
122	Edbell Parcel Map (TPM 20900)	TPM	Ramona	1	96.42
123	Harman (TPM 20907)	TPM	Ramona	4	195.35
124	Neuman (TPM 20962)	TPM	Ramona	4	39.40
125	Spitsbergen (TPM 21042)	TPM	Ramona	3	137.53
126	Filippini Parcel Map (TPM 20926)	TPM	Ramona	2	9.35
127	Sunset Vista (TM 5257)	TM	Ramona	7	9.57
128	Roberts (TM 5267)	TM	Ramona	8	50.62
129	Ramona (TPM 20466)	TPM	Ramona	2	19.82
130	Teyssier (TM 5194)	TM	Ramona	37	289.00
131	Highland Valley (TPM 21051)	TPM	Ramona	3	38
132	Victoria Shangrila (TM 5261)	TM	San Dieguito	38	79.67
133	Little Creek (TPM 20834)	TPM	San Dieguito	3	15.81
134	Oakrose Ranch (TM 5204)	TM	San Dieguito	10	39.66
135	Fuerte Ranch Estates (GPA 03-006)	GPA/REZ/TM	Valle De Oro	40	26.89
136	Spanish Trails (Formally Loranda) (TM 5173)	TM	Valley Center	175	435.39
138	Brook Forest (GPA 03-008)	GPA/SP/TM	Valley Center	84	225.56
139	Beauvais/Old Castle (TM 5315)	TM	Valley Center	11	23.16
140	Rancho Lilac (GPA 04-008)	GPA/SP/REZ/TM/MUP	Valley Center	360	693.49
141	Orchard Vista (TM 5507)	TM	Valley Center	11	25.24
142	Castle Creek Condominiums (GPA 06-011)	GPA/SPA/TM/REZ	Valley Center	63	57.79
143	McNally Road Parcel Map (TPM 21004)	TPM	Valley Center	4	78.30
144	Sukup (TM 5184)	TM	Valley Center	9	24.62
145	Garcia T.S.M. (TM 5458)	TM	Valley Center	8	17.40
146	Calle De Encinas (TPM 20780)	TPM	Valley Center	3	14.39
147	S.R. Polito Family Partnership LTD (TM 5001)	TM	Valley Center	18	69.2
148	Crews Development Valley Center Road (TPM 20828)	TPM	Valley Center	4	9.71
149	Fitzpatrick (TPM 20842)	TPM	Valley Center	4	10.72
150	Robinson (21105)	TPM	Valley Center	4	11
151	Goodnight Ranchos (TPM 21101)	TPM	Valley Center	2	5
152	Hancey TPM (TPM 20999)	TPM	Valley Center	4	14.75

GPA = General Plan Amendment
MUP = Major Use Permit
REZ = Rezone
SP = Specific Plan
SPA = Specific Plan Amendment

Project No.	Project Name	Required Approvals	Community	Dwelling Units	Acres

TM = Tentative Map
TPM = Tentative Parcel Map

Notes: 1- Communities with active projects having a total increase of less than 10 units were not included in the Cumulative Impacts Traffic Model.
2- This table includes both approved and active projects that are inconsistent with the General Plan Update

Source: County of San Diego 2008

CUMULATIVE Tribal Gaming Facilities - Trip Generation Estimates
County of San Diego – General Plan Update

BARONA RESERVATION – (CUMULATIVE YEAR 2030)			
LAND USE TYPE	**LAND USE UNITS**	**TRIP RATE FACTOR**	**DAILY TRIPS**
GAMING AREA	300,000 sq. ft. (1)	100 trips/1000 square feet	30,000
RESORT HOTEL	400 rooms (1)	3 trips/room	1,200
GAS STATION w/FOOD MART	24 VFS (vehicle fueling station)	75 trips/VFS	1,800
GOLF COURSE	18-hole course (1)	700 trips/course	700
EVENT CENTER	20,000 sq. ft. (1)	40 trips/1000 square feet	800
CONVENTION CENTER	100,000 sq. ft.(1)	609.8 trips/acre	1,200 (2)
TOTAL DAILY TRIPS GENERATED			**35,700**

(1) Draft Chronology of Gaming Projects in San Diego dated June 28, 2006.
(2) Applied SANDAG rate per acre and assumed two acres

CAMPO RESERVATION (CUMULATIVE YEAR 2030)			
LAND USE TYPE	**LAND USE UNITS**	**TRIP RATE FACTOR**	**DAILY TRIPS**
GAMING AREA	42,800 sq. ft. (1)	100 trips/1000 square feet	4,280
GAS STATION w/ FOOD MART	12 VFS (vehicle fueling station)	75 trips/VFS or 150 trips/pump	1,800
FUEL DEPOT	1 fuel depot	40 trips/day	40
HOTEL	150 rooms (1)	3 trips/room	450
HOTEL (PH III EXPANSION)	50,000 sq. ft. 100 rooms (2)	3 trips/room	300
RV PARKING	80 spaces (1)	4 trips/RV space	320
BOWLING CENTER	16 lanes (1)	10 trips/lane (4)	160
ENTERTAINMENT HALL	20,000 sq. ft. (1)	40 trips/1000 square feet (3)	800
CASINO ADMIN OFFICE	4,250 sq. ft. (1)	Auxiliary casino use	0
RESTAURANT	2,500 sq. ft.	Auxiliary casino use	0
TOTAL DAILY TRIPS GENERATED			**8,150**

(1) Environmental Evaluation dated July 11, 2007 prepared by Tierra Environmental
(2) County review comments for Environmental Evaluation for Campo Golden Acorn Hotel and Amenities project dated August 16, 2007
(3) Based on trip generation rate used for Barona Event Center.
(4) Due to rural location and co-location with casino, assumes one-third of the SANDAG rate of 30 trips/lane.

EWIIAAPAAYP RESERVATION (CUMULATIVE YEAR 2030) (3)			
LAND USE TYPE	**LAND USE UNITS**	**TRIP RATE FACTOR**	**DAILY TRIPS**
GAMING AREA	80,500 sq. ft. (1)	100 trips/1000 square feet	8,050
HEALTH CLINIC	26,500 sq.ft (2)	20 trips/1000 square feet	530
TOTAL DAILY TRIPS GENERATED			**8,580 (4)**

(1) Total square footage of the Ewiiaapaap casino is 237,300 square feet (Environmental Assessment dated May 2003).
(2) Information based on Environmental Assessment dated August 2001
(3) Proposing a jointly managed casino with Viejas tribe – August 18, 2004 UT article
(4) Trip generation estimate may need to be adjusted depending on proximity to and relationship with Viejas casino

JAMUL RESERVATION (CUMULATIVE YEAR 2030)			
LAND USE TYPE	**LAND USE UNITS**	**TRIP RATE FACTOR**	**DAILY TRIPS**
GAMING AREA	73,469 sq. ft. (1)	100 trips/1000 square feet	7,347
HOTEL	400 rooms (1)	3 trips/room	1,200
EVENT CENTER	1,200 seats (2)	0.606/seat (3)	828
TOTAL DAILY TRIPS GENERATED			**9,375**

(1) Chronology of Gaming and Tribal Enterprises in San Diego dated January 25, 2008.
(2) Based on information in project's Environmental Assessment dated September 2003
(3) Based on trip rate in project's Environmental Assessment (EA) dated September 2003. EA only identified seating and not square footage.

LA JOLLA RESERVATION (CUMULATIVE YEAR 2030) (1)			
LAND USE TYPE	**LAND USE UNITS**	**TRIP RATE FACTOR**	**DAILY TRIPS**
CASINO	35,000 sq. ft. (1)	100 trips/1000 square feet	3,500
HOTEL	150 rooms (2)	3 trips/room	450
TOTAL DAILY TRIPS GENERATED			**3,950**

(1) Environmental Assessment dated December 2, 2005, prepared by Tierra Environmental
(2) Chronology of Gaming and Tribal Enterprises in San Diego dated January 25, 2008.

LA POSTA RESERVATION (CUMULATIVE YEAR 2030)			
LAND USE TYPE	**LAND USE UNITS**	**TRIP RATE FACTOR**	**DAILY TRIPS**
GAMING AREA	10,000 sq. ft (1)	100 trips/1000 square feet	1,000
TOTAL DAILY TRIPS GENERATED			**1,000**

(1) Based on Traffic Impact Analysis (TIA) prepared by Linscott, Law, and Greenspan Engineers dated April 13, 2004.

PALA RESERVATION (CUMULATIVE YEAR 2030)			
LAND USE TYPE	**LAND USE UNITS**	**TRIP RATE FACTOR**	**DAILY TRIPS**
GAMING AREA	123,000 sq. ft.(1)	100 trips/1000 square feet	12,300
HOTEL	557 rooms (2)	3 trips/room	1,671
MOTORCROSS RACEWAY	Unknown	Unknown	400 (3)
TOTAL DAILY TRIPS GENERATED			**14,371**

(1) Final Environmental Impact Report dated March 28, 2007 prepared by Tierra Environmental
(2) Chronology of Gaming and Tribal Enterprises in San Diego dated January 25, 2008.
(3) Place-holder assumption until more specific information becomes available

PAUMA RESERVATION (CUMULATIVE YEAR 2030)			
LAND USE TYPE	**LAND USE UNITS**	**TRIP RATE FACTOR**	**DAILY TRIPS**
GAMING AREA(1)	83,100 sq. ft (1)	100 trips/1000 square feet	8,310
HOTEL	400 rooms (1)	3 trips/room	1,200
RETAIL SHOPS	4,000 sq. ft.	27 trips/1000 square feet (2)	108
EVENT CENTER	34,000 sq. ft. (1)	40 trips/1000 square feet (3)	1,360
TOTAL DAILY TRIPS GENERATED			**10,978**

(1) Draft Environmental Impact Report dated July 27, 2007 prepared by Tierra Environmental
(2) Based on trip generation rate used for Viejas Outlet Center.
(3) Based on trip generation rate used for Barona Event Center.

RINCON RESERVATION (CUMULATIVE YEAR 2030)			
LAND USE TYPE	**LAND USE UNITS**	**TRIP RATE FACTOR**	**DAILY TRIPS**
GAMING AREA	63,165 sq. ft (1)	100 trips/1000 square feet	6,317
RESORT HOTEL	700 rooms (1)	3 trips/room	2,100
TOTAL DAILY TRIPS GENERATED			**8,417**

(1) Chronology of Gaming and Tribal Enterprises in San Diego dated January 25, 2008.

SAN PASQUAL RESERVATION (CUMULATIVE YEAR 2030)			
LAND USE TYPE	**LAND USE UNITS**	**TRIP RATE FACTOR**	**DAILY TRIPS**
GAMING AREA	62,000 sq.ft	100 trips/1000 square feet	6,200
RESTAURANT / LOUNGE	1,500 sq. ft.(2)	Auxiliary casino use	0
BUFFET RESTAURANT	350 seats (1)	Auxiliary casino use	0
HOTEL	161 rooms (3)	3 trips/room	483
OUTDOOR CONCERT VENUE	2,000 seats (4)	0.606/seat (5)	1,212
TOTAL DAILY TRIPS GENERATED			**7,895**

(1) Based on information from the project's Environmental Assessment dated June 2, 2003.
(2) Size unknown; assumption provided for planning purposes.
(3) Chronology of Gaming and Tribal Enterprises in San Diego dated January 25, 2008.
(4) Scope of work for traffic consultant dated December 18, 2007.
(5) Trip Generation assumption based on Jamul Event Center

SANTA YSABEL RESERVATION (CUMULATIVE YEAR 2030)			
LAND USE TYPE	**LAND USE UNITS**	**TRIP RATE FACTOR**	**DAILY TRIPS**
GAMING AREA	19,000 sq. ft (1)	100 trips/1000 square feet	1,900
RESTAURANT/ BAR	unknown	Auxiliary casino use	0
TOTAL DAILY TRIPS GENERATED			**1,900**

(1) Based on Environmental Evaluation/Traffic Impact Analysis dated June 2004

SYCUAN RESERVATION (CUMULATIVE YEAR 2030)			
LAND USE TYPE	**LAND USE UNITS**	**TRIP RATE FACTOR**	**DAILY TRIPS**
GAMING AREA	93,890 sq. ft (1)	100 trips/1000 square feet	9,389
THEATER	460 seats	0.606/seat (2)	279
RESERVATION TOTAL DAILY TRIPS GENERATED			**9,668**
SYCUAN RESERVATION – SINGING HILLS/SLOAN CANYON AREA (TAZ 2908)			
GAMING AREA EXPANSION	300 slots (3) (140,835 sq. ft.)	100 trips/1000 square feet	14,084
SINGING HILLS HOTEL	557 rooms (4)	3 trips/room	1,671
SINGLE FAMILY HOMES	74 units (5)	12 trips/unit (6)	888
EQUESTRIAN CENTER	1	--	100 (5)
RV PARK	85 spaces (5)	4 trips/space (5)	340
SINGING HILLS TOTAL DAILY TRIPS GENERATED			**17,083**
TOTAL DAILY TRIPS GENERATED			**26,751**

(1) Chronology of Gaming and Tribal Enterprises in San Diego dated January 25, 2008.
(2) Trip Generation assumption based on Jamul Event Center
(3) Expansion of 3,000 slot machines allowed by Sycuan Compact (SB 175)
(4) Size unknown. Assumed same size as Pala Hotel/Casino
(5) County response to comments Crestlake Estates EIR (July 2007)

VIEJAS RESERVATION (CUMULATIVE YEAR 2030)			
LAND USE TYPE	**LAND USE UNITS**	**TRIP RATE FACTOR**	**DAILY TRIPS**
GAMING AREA	133,000 sq. ft (1)	100 trips/1000 square feet	13,300
OUTLET CENTER	255,000 sq. ft.(1)	27 trips/1000 square feet (2)	6,885
NEW CASINO (3)	100,000 sq. ft.(4)	100 trips/1000 square feet	10,000
HOTEL	600 rooms (3)	3 trips/room	1,800
MULTIPLEX MOVIE THEATER (3)	1,000 seats (4)	0.606/seat (5)	606
CONCERT VENUE	12,000 seats (3)	0.606/seat (5)	7,272
TOTAL DAILY TRIPS GENERATED			**39,863**

(1) Draft Viejas TEIR dated August 2005. Includes a 18,000 SF expansion of the gaming area. Outlet Center square footage includes 83,000 square foot expansion (increase from 35 to 57 stores).
(2) Based on data from ITE Trip Generation Report
(3) Based on UT article dated January 9, 2008.
(4) Size / number of units are currently unknown. Assumption used solely for planning purposes.
(5) Trip Generation assumption based on Jamul Event Center