

**CITY OF DEL MAR VILLAGE
SPECIFIC PLAN
TRAFFIC IMPACT STUDY**

February 2012



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Prepared for:
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CHAPTER 1

THE PROJECT

INTRODUCTION

The City of Del Mar is an affluent beach community that is located in the north coastal area of the County of San Diego. The City covers two square miles of coastal land with a population of 4,161 according to the 2010 United States Census. The Del Mar Village is comprised of a six block area on Camino del Mar between 9th Street and 15th Street, which includes the City Hall property. 15th Street west of Camino del Mar includes commercial properties, post office, City's Library. The Village, which corresponds with the City's commercial zone, occupies approximately 40 acres and 68 properties.

The City of Del Mar, similar to other coastal communities in the County of the San Diego, has evolved over the years from a small beach community with small retail shops to now having numerous office buildings and commercial properties. The regional population growth and increase in traffic congestion along adjacent roadways and neighboring freeways, coupled with the physical characteristics of Camino del Mar, conflict with the vision outlined in the City's Community Plan.

The Del Mar Village Specific Plan goal is to guide both private and public development in the village in accordance with the City's Community Plan adopted in March 1976 and amended in 1985. The main objectives in the Community Plan are to "focus major retail and office activities into one economically viable, pedestrian oriented and attractive area that serves the needs of both residents and visitors and is well integrated into the residential fabric of the community". Furthermore, it sets to "minimize the impact of automobile on the character of the City of Del Mar and emphasize a more pedestrian oriented environment, safe sidewalks, landscaped buffer zones and alternate means of transportation".

Currently, Camino Del Mar is a four lane roadway that runs through the heart of the City providing two travel lanes in each direction with a mix of both signalized and stop controlled intersections. The design roadway capacity of Camino Del Mar is 15,500 average daily trips (ADT). This roadway is currently congested and exceeds its operation capacity by approximately 3,200 ADT. In addition, the latest surveys have shown the vehicular speed along this corridor is increasing and posing a risk to both pedestrians and cyclists.

Camino Del Mar pedestrian crossing distance varies between 70 and 80 feet which makes it a challenge for pedestrians to cross from one side of the road to the other given the roadway congestion and recorded speeds. The latest accident data shows 17% of the accidents within the Village area involve pedestrians and cyclists.

Over the years, Camino del Mar has given priority to automobiles, which resulted in narrow sidewalks within the Village area. The current pedestrian system within the Village area is discontinuous and interrupted by parking stalls resulting in an unfriendly pedestrian environment.

The Community Plan (1985) describes nine provisions for the Village Center Specific Plan to improve the appearance and function of the Village Area. These provisions are as follows:

- Continuity of landscaping theme, street furniture, lighting, public signing, sidewalk pavers and other design features as required to identify and enhance the village area;

- Methods to allow safe and convenient pedestrian crossings across Camino del Mar;
- Location of common satellite parking areas which will serve the downtown businesses;
- Land use allocations which will help to provide economic and functional vitality to the retail portion of the downtown district;
- Right-of-way improvement to enhance the appearance of the village and which assists in its identification as the village center;
- Coordination with the Plaza-Hotel Specific Plan;
- Special provisions for the use and development of public lands including the City Hall site and/or the Del Mar Shores school grounds;
- An economic analysis of the Specific Plan's recommendations; and
- An implementing mechanism to implement all of the above provisions.

On behalf of the City of Del Mar, KOA Corporation in collaboration with RECON has prepared this traffic study for the City of Del Mar Village Specific Plan. This report analyzes three different circulation alternatives along Camino Del Mar between 9th Street and 15th Street. This analysis will allow the City to evaluate the traffic associated with the proposed circulation alternatives. Furthermore, it will provide the City and the Community, the tools to better achieve the vision and goals set in the Community Plan.

PROJECT DESCRIPTION

The proposed City of Del Mar Village Specific Plan introduces “new public streetscape improvements; new mixed-use zone development standards and design guidelines for private properties; and infrastructure to support future development.” Based on the Notice of Preparation (NOP), the proposed project consists of a new Specific Plan that is designed to implement the vision of the Community Plan including the following goals:

- increase the development potential within the Del Mar Village;
- raise the height limit to 26'-0” on the western side of Camino del Mar to match the allowed height limit on the eastern side;
- create a mixed-use zone for the commercial properties that also allows residential development at a density of 20 dwelling units per acre;
- permit parking structures in both the mixed-use and public facilities zones;
- redesign sidewalks and on-street parking to be continuous and aligned within the public right-of-way.

All commercial zoned properties within the Village area are considered mixed-use.

The intended goal of the project is to “maintain the Village character, create a pedestrian oriented Village, provide economic and functional vitality to the village, increase public open space, and provide a mix of residential and non-residential uses”. In order to accomplish these goals, the following three alternatives for Camino Del Mar between 9th Street and 15th Street were analyzed:

**Table 1-1
Camino Del Mar Circulation Alternatives**

Alternatives	Number of Lanes	Intersection control	Intersection control affected	Roadway Capacity
No Circulation Changes	4	Stop signs	-	15,500
Four Lane Collector with Signals	4	Signals	13 th Street 11 th Street	30,000
Two Lane collector with Roundabouts	2	Roundabouts	15 th Street 13 th Street 11 th Street 9 th Street	25,000

Figure 1-1 depicts the Intersection Controls for the three circulation alternatives proposed and analyzed in this report.

It should be noted that under the proposed alternatives, the speed limits will change on certain roads affected by the proposed circulation modifications. While the speed limits on Camino del Mar will remain the same as in the current conditions for the No Circulation Changes alternative, they will change under the other two alternatives. Table 1-2 describes the speed limits on Camino del Mar, for each alternative.

**Table 1-2
Camino Del Mar Speed Limits**

Roadway Segment	With Project 4 Lane Collector With Stops	With Project 4 Lane Collector With Signals	With Project 2 Lane Collector With Roundabouts
Camino Del Mar			
North Jimmy Durante to 15 th Street	-	-	-
15 th St to 9 th Street	25	30	25
9 th St to Del Mar Heights Road	40	30	30
South of Del Mar Heights Rd	-	-	-

Note: Speed limits expressed in miles per hour

The speed limit inside the roundabout will be 15 miles per hour.

STUDY AREA

The project study area includes Camino Del Mar from Via de la Valle to Carmel Valley Road, 15th Street from Coast Boulevard to Camino del Mar, Stratford Court from 15th Street to 12th Street, Del Mar Heights Road from Camino del Mar to El Camino Real, and Via de la Valle from Camino del Mar to South Sierra Avenue.

Figure 1-2 shows the project vicinity and study area. Figure 1-3 shows the Del Mar Village Specific Plan.

The following roadway segments and intersections are analyzed in this report:

Roadway Segments

Highway 101

- North of Lomas Santa Fe Drive
- North of Via de la Valle

Camino Del Mar

- North of Jimmy Durante Boulevard
- North of Jimmy Durante Boulevard 15th Street
- 15th Street to 13th Street
- 13th Street to 12th Street
- 12th Street to 11th Street
- 11th Street to 9th Street
- 9th Street to Del Mar Heights Road
- Del Mar Heights Road to Carmel Valley Road
- South of Carmel Valle Road

Lomas Santa Fe Drive

- Solana Hills Drive to I-5 Southbound Ramps

Via de la Valle

- Del Mar Downs Road to Jimmy Durante Boulevard
- Jimmy Durante Boulevard to I-5 Southbound Ramps
- East of I-5 Northbound Ramps

Jimmy Durante Boulevard

- Via de la Valle to San Dieguito Drive
- San Dieguito Drive to Camino del Mar

Del Mar Heights Road

- I-5 Northbound Ramps to High Bluff Drive
- I-5 Southbound Ramps to Mango Drive
- Camino Del Mar to Crest Way

Carmel Valley Road

- East of South Camino del Mar

15th Street

- Coast Boulevard to Camino del Mar
- Camino Del Mar to Luneta Drive

Crest Road

- Del Mar Heights Road to 15th Street

Coast Boulevard

- North of 15th Street

Stratford Court

- 15th Street to 13th Street

Intersections

1. Via De La Valle / Camino Del Mar
2. Via De La Valle / Jimmy Durante Boulevard
3. Via De La Valle / I-5 Southbound Ramps
4. Via De La Valle / I-5 Northbound Ramps
5. Via De La Valle / San Andres Drive
6. Coast Boulevard / Camino Del Mar
7. 15th Street / Stratford Court
8. 12th Street / Stratford Court

9. 15th Street / Camino Del Mar
10. 13th Street / Camino Del Mar
11. 12th Street / Camino Del Mar
12. 11th Street / Camino Del Mar
13. 9th Street / Camino Del Mar
14. 4th Street / Del Mar Heights Road / Camino Del Mar
15. Camino Del Mar / Carmel Valley Road
16. Del Mar Heights Road / Crest Way
17. Del Mar Heights Road / I-5 Southbound Ramps
18. Del Mar Heights Road / I-5 Northbound Ramps
19. Del Mar Heights Road / High Bluff Drive
20. Del Mar Heights Road / El Camino Real
21. 15th Street / Ocean Avenue

Freeway Mainline

- Lomas Santa Fe Drive to Via de la Valle
- Via de la Valle to Del Mar Heights Road
- Del Mar Heights Road to Carmel Valley Road

Freeway Ramp Meter

- Via de la Valle Eastbound to Interstate 5 Northbound
- Via de la Valle Westbound to Interstate 5 Northbound
- Via de la Valle Westbound to Interstate 5 Northbound (HOV)
- Via de la Valle Eastbound to Interstate 5 Southbound
- Via de la Valle Eastbound to Interstate 5 Southbound (HOV)
- Via de la Valle Westbound to Interstate 5 Southbound
- Del Mar Heights Road to Interstate 5 Northbound
- Del Mar Heights Road Eastbound to Interstate 5 Southbound
- Del Mar Heights Road Eastbound to Interstate 5 Southbound (HOV)
- Del Mar Heights Road Westbound to Interstate 5 Southbound

PROJECT TRIP GENERATION

Trip generation is a measure or forecast of the number of trips that begin or end at the project site. The traffic generated is a function of the extent and type of development proposed for the site. These trips will result in some traffic increases on the streets where they occur. In general, vehicular traffic generation characteristics for projects are estimated based on established rates. These rates identify the probable traffic generation of various land uses based studies of developments in comparable settings.

In order to determine the trip generation for the project, an inventory of the existing parcels in the redevelopment area was provided by the City of Del Mar. The new Specific Plan would allow building parcels to increase their maximum development potential from the existing .45 Floor Area Ratio (FAR). The projected buildout of the proposed Village Specific Plan is anticipated to be a total of 600,000 square feet of mixed-use development. The proposed project, net increase is 320,733 square feet of mixed use.

The project net increase in traffic was derived from the difference between the future total trip generation and the trip generation of the existing land uses based on *SANDAG's (Not So) Brief Guide*

of *Vehicular Traffic Generation Rates* for the San Diego Region. The following table shows the trip generation rates used for this study.

**Table 1-3
Project Trip Generation Rates**

Land Use	Units	Daily Trips/ Unit	AM Total	AM In	AM Out	PM Total	PM In	PM Out
Hotel	Rooms	9	8%	40%	60%	9%	60%	40%
Housing	DU's	8	8%	20%	80%	10%	70%	30%
Office	1000 SF	20	14%	90%	10%	13%	20%	80%
Restaurant	1000 SF	160	8%	50%	50%	8%	60%	40%
Civic	1000 SF	30	9%	90%	10%	12%	30%	70%
Retail/Personal Services	1000 SF	40	3%	60%	40%	9%	50%	50%

All commercial areas of the projects are classified as mixed-use so a 10% reduction was applied to the trip generation in addition to a 5% transit reduction due to the project proximity to transit, in accordance with conventional SANDAG rates.

To evaluate the potential trip reduction due to interaction between uses, Mixed-Use Development (MXD) Method of Trip Generation was used to calculate the external project trips. The MXD Model was commissioned by the US EPA and San Diego Association of Governments (SANDAG). This model is based on a comprehensive study of household travel from over 200 mixed use developments across the nation, providing a more accurate prediction of traffic for mixed-use development projects.

For this project, the MXD Model Trip Generation was customized with the specific project information that reflects the future land uses proposed and local serving retail specific parameters were determined at a 30% factor. The resulting trip reduction with the MXD Model method is lower than the reduction calculated using the conventional SANDAG rates.

After considering both the conventional SANDAG and MXD Model trip reduction factors, the MXD Model results were used because it accounts for the interaction between land uses and the surrounding built environment.

Based on this project description and the estimated trip generation rates provided above, we estimate that the project will conservatively generate an additional 6,887 daily trips externally and 9,497 daily trips internally.

**Table 1-4
Project Trip Generation Summary**

Driveway Trip Generation	SF	Units	Daily	AM Peak Hour			PM Peak Hour		
				AM Total	AM In	AM Out	PM Total	PM In	PM Out
Existing									
Residential (multi-family units)	2,010	2	16	1	0	1	2	1	0
Boutique Hotel (rooms)	4,940	17	162	13	5	8	15	9	6
Retail/Personal Services/Cafes	41,811		1,672	50	30	20	151	75	75
Restaurant	32,394		5,183	415	207	207	415	249	166
Office	169,646		3,393	475	428	48	441	88	353
Civic	28,466		854	77	69	8	102	31	72
<i>Total Existing</i>	<i>279,267</i>		<i>11,280</i>	<i>1,031</i>	<i>740</i>	<i>291</i>	<i>1,125</i>	<i>453</i>	<i>672</i>
Village Specific Plan Additional									
Residential (multi-family units)	165,490	140	1,120	90	18	72	112	78	34
Boutique Hotel (rooms)	18,060	60	540	43	17	26	49	29	19
Retail/Personal Services/Cafes	96,689		3,868	116	70	46	348	174	174
Restaurant	33,606		5,377	430	215	215	430	258	172
Office	354		7	1	1	0	1	0	1
Civic	6,534		196	18	16	2	24	7	16
<i>Net Increase from Existing</i>	<i>320,733</i>		<i>11,108</i>	<i>698</i>	<i>337</i>	<i>361</i>	<i>963</i>	<i>547</i>	<i>416</i>
Transit Reduction									
5% Reduction			(555)	(35)	(17)	(18)	(48)	(27)	(21)
Subtotal with Transit Reduction			10,552	663	320	343	915	520	396
Mixed Use Reduction (Internal Trips)									
10% Reduction			(1,055)	(66)	(32)	(34)	(92)	(52)	(40)
Subtotal with Mixed Use & Transit Reduction			9,497	596	288	309	824	468	356
MXD Model Trip Generation (External Trips)									
			6,887	450	199	251	581	342	239

TRIP DISTRIBUTION AND ASSIGNMENT

Trip distribution and assignment is the process of identifying the probable destinations, directions and traffic routes that project related traffic will likely affect. Trip distribution and assignment information can be estimated from observed traffic patterns, experience or through use of a computerized travel forecast model. Once the proposed project trips have been estimated, they are assigned to the study area network.

The trip distribution and assignment for this project is based on SANDAG's computerized travel forecast model (Series 12 Select Zone Analysis). Appendix A contains the select zone model, illustrations of any model adjustments and traffic analysis zone (TAZ) land use information for the land uses.

PROJECT TRAFFIC

The proposed project will affect the existing vehicular traffic system in by increasing peak hour and daily traffic volumes.

It should be noted that the project demand is the same for all proposed alternatives, as a result both freeway ramp meter and freeway mainline analysis remain the same.

The trip distribution and assignment for the project-related trips is shown in Figure 1-4. Figure 1-5 shows the daily project trips and Figures 1-6 and 1-7 show the peak hour project trips.



LEGEND





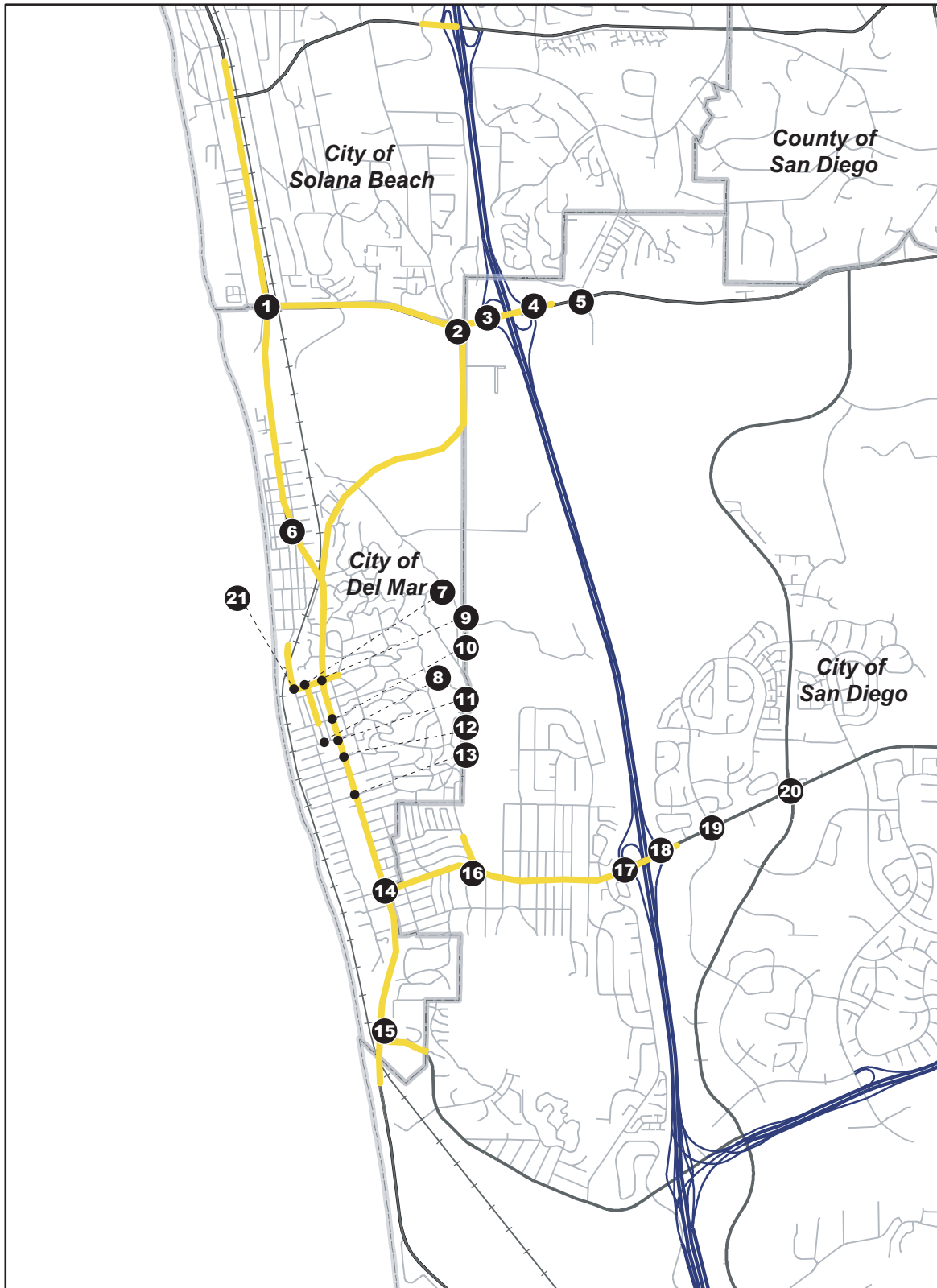
-  Traffic Signal
-  Side Stop
-  All Way Stop
-  Roundabout

Figure 1-1
Project Alternatives Intersection Controls

N
Not To Scale
February 2012



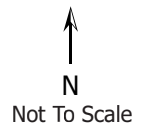
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①	Study Intersection Locations
—	Study Segment Locations

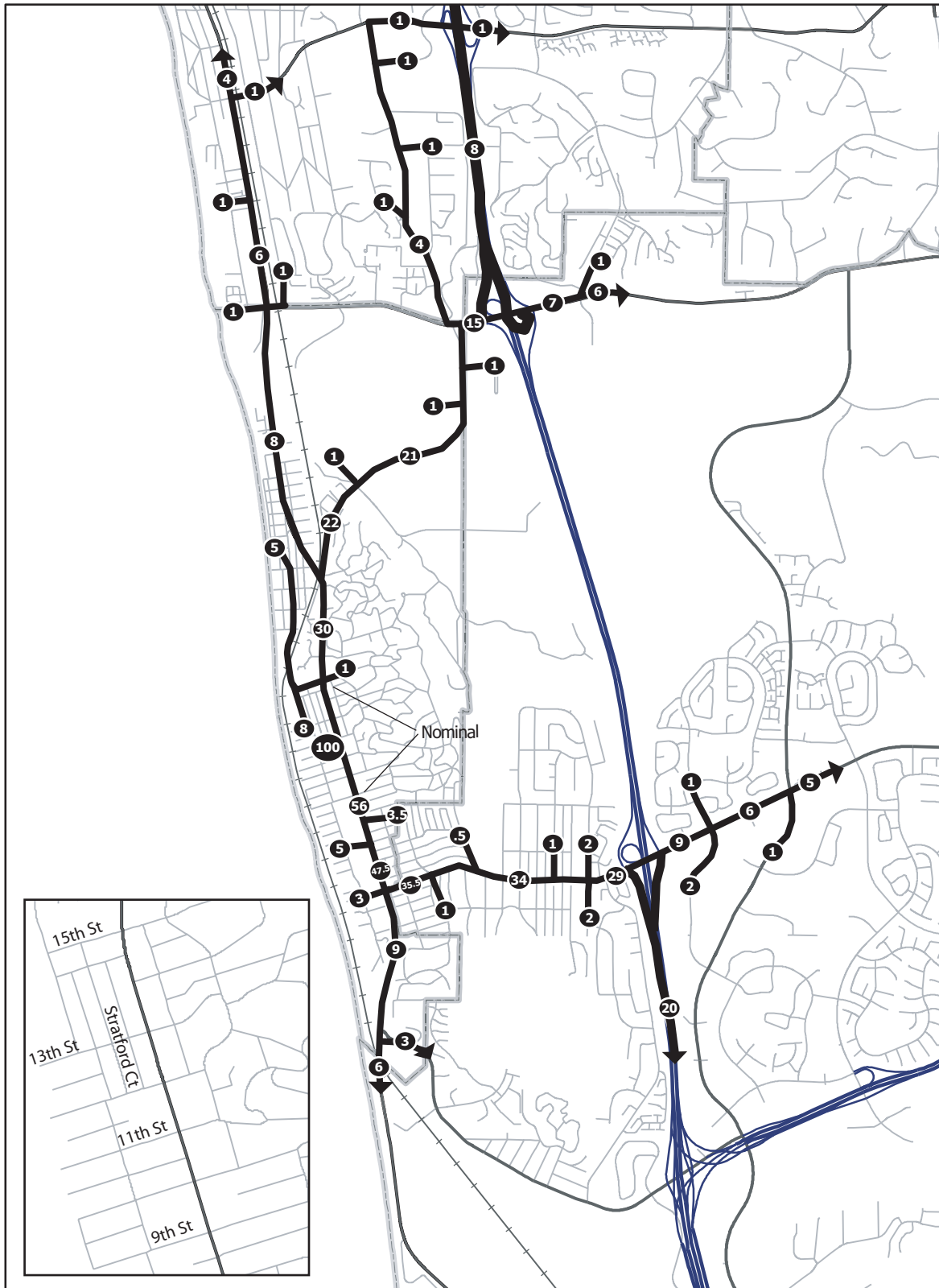
Figure 1-2
Project Study Area



LEGEND
--- Specific Plan Boundary

Figure 1-3
Del Mar Village Specific Plan

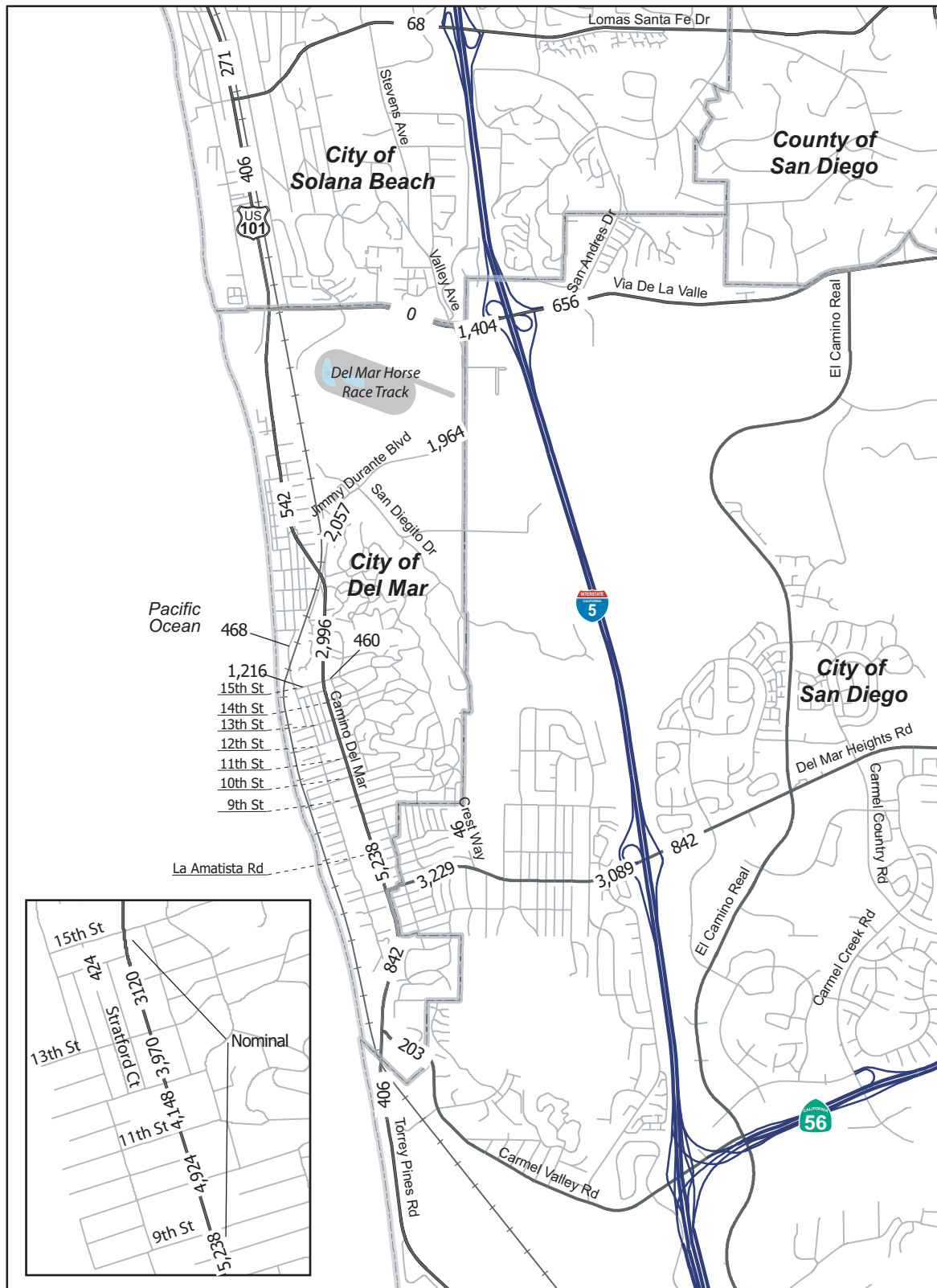




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1 Distribution Percentage

Figure 1-4
Project Trip Distribution



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—15—	Daily Project Trips

Figure 1-5
Daily Project Trips

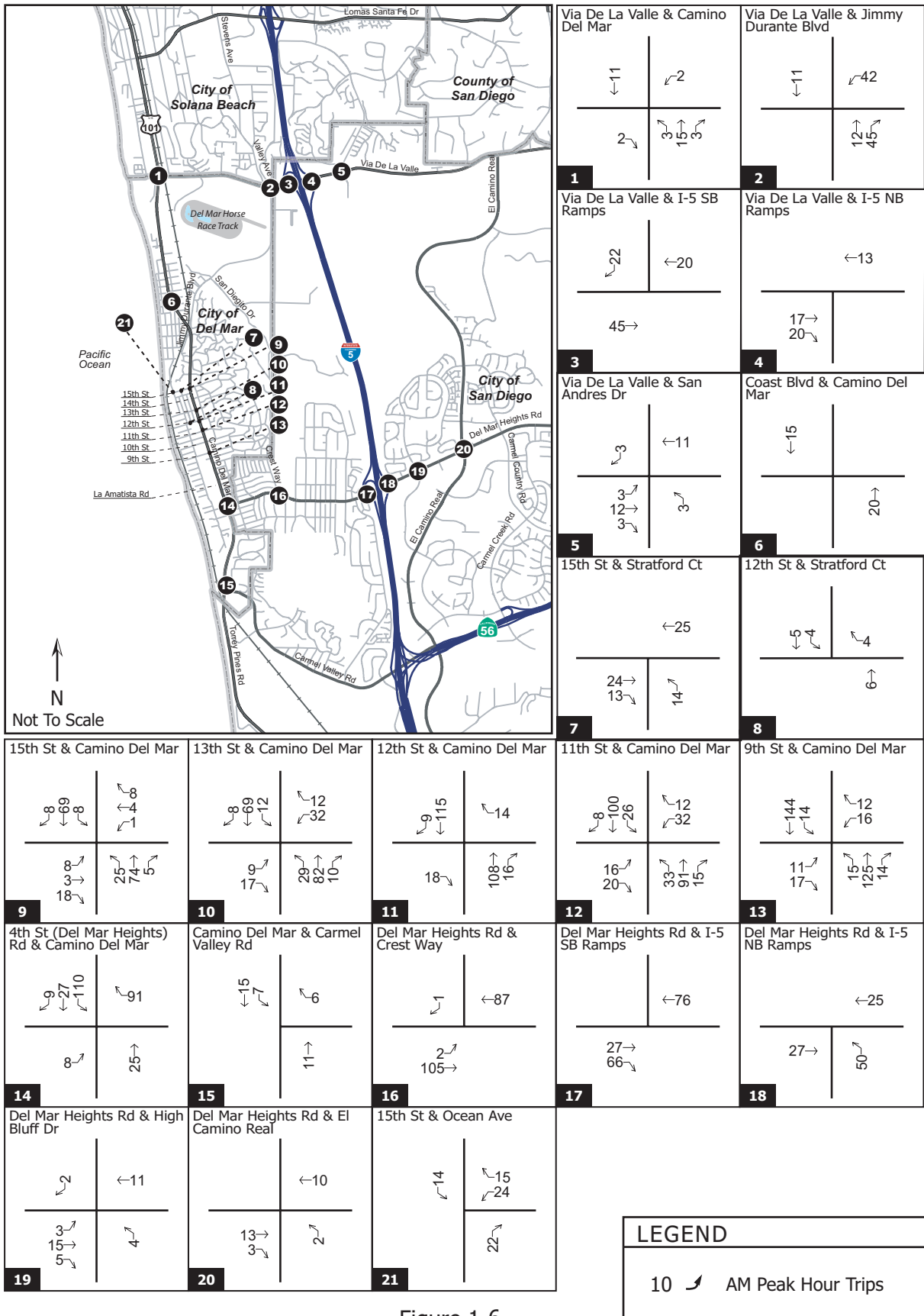


Figure 1-6 AM Peak Hour Project Trips

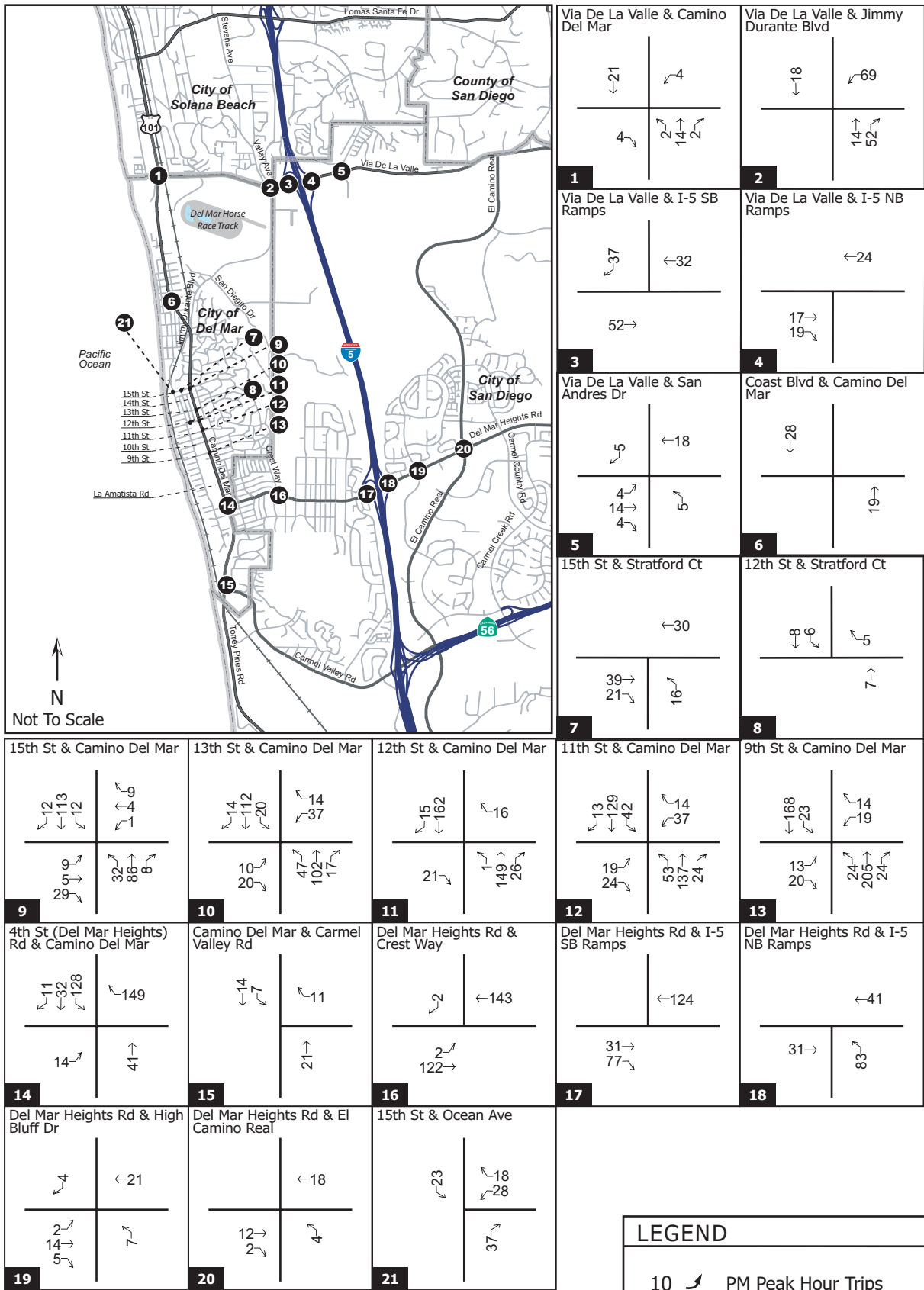


Figure 1-7
PM Peak Hour Project Trips

CHAPTER 2 METHODOLOGIES

This chapter documents the methodologies and assumptions used to conduct the traffic impact analysis for the improvement alternatives. The study methodology and analysis is conducted in accordance with the *SANTEC/ITE Guidelines for Preparing Traffic Impact Studies*. These guidelines are used to determine the project's potential significant impacts. This section contains the following background information:

- Study scenarios
- Study time periods
- Capacity analysis methodologies

STUDY SCENARIOS

This report presents an analysis of the following analysis scenario:

- Existing Conditions (2011)
- Existing Plus Project Conditions (2011)
- Long Term (2035)
- Long Term Plus Project Conditions (2035)

ANALYSIS METHODOLOGIES

Street system operating conditions are typically described in terms of “level of service.” Level of service is a report-card scale used to indicate the quality of traffic flow on roadway segments and at intersections. Level of service (LOS) ranges from LOS A (free flow, little congestion) to LOS F (forced flow, extreme congestion). A more detailed description of the concepts described in this section is provided in Appendix B of this document. The following methods are outlined in this publication and used in this study.

Intersection Capacity Analysis

The analysis of peak hour intersection performance was conducted using the Traffix analysis software program, which uses methodologies defined in the 2000 Highway Capacity Manual (HCM) to calculate results. Level of service (LOS) for intersections is determined by control delay. Control delay is defined as the total elapsed time from when a vehicle stops at the end of a queue to the time the vehicle departs from the stop line. The total elapsed time includes the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position, including deceleration of vehicles from free-flow speed to the speed of vehicles in the queue. The software calculates the average expected delay per vehicle at an intersection, measured in seconds. The reported delay then correlates to a resulting LOS. Appendix B lists the HCM delay/LOS criteria for both signalized and unsignalized intersections.

Signalized Intersections

The HCM analysis methodology for evaluating signalized intersections is based on the “operational analysis” procedure. This technique uses 1,900 passenger cars per hour of green per lane (pcphgpl) as the maximum saturation flow of a single lane at an intersection. This saturation flow rate is adjusted to account for lane width, on-street parking, conflicting pedestrian flow, traffic composition, (e.g., the percentage of vehicles that are trucks) and shared lane movements (e.g., through and right-turn

movements from the same lane). Average control delay is calculated by taking a volume-weighted average of all the delays for all vehicles entering the intersection.

All-way Stop-controlled (AWSC) Intersections

The HCM analysis methodology for evaluating All-Way Stop-controlled intersections is based on the degree of conflict for each independent approach created by the opposing approach and each conflicting approach. Level of Service for AWSC intersections is also based on the average control delay. However, AWSC intersections have different threshold values than those applied to signalized intersections. This is based on the rationale that drivers expect AWSC intersections to carry lower traffic volumes than at signalized intersections. Therefore, a higher level of delay is acceptable at a signalized intersection for the same LOS.

Two-way Stop-controlled (TWSC) Intersections

The HCM analysis methodology for evaluating Two-Way Stop-controlled (TWSC) intersections is based on gap acceptance and conflicting traffic for vehicles stopped on the minor-street approaches. The critical gap (or minimum gap that would be acceptable) is defined as the minimum time interval in the major-street traffic stream that allows intersection entry for one minor-street vehicle. Average control delay and LOS for the “worst approach” are reported. Level of service is not defined for the intersection as a whole.

Roundabouts

For this analysis, Sidra intersection software Version 5.1 was used. Sidra is a software package developed to specifically to analyze roundabouts operations. Version 5.1 uses the roundabout capacity model described in the HCM 2010, based on research on US roundabouts described in NCHRP Report 572. The NCHRP Report 572 also showed that the capacity model using exponential regression and using the model parameters derived from average field values of the gap-acceptance parameters are very close. Thus modeling capacity by a gap-acceptance method (using parameters determined in the field in a "theoretical" gap-acceptance equation) and modeling capacity by direct regression using field capacities give very close results. This confirms the validity of gap-acceptance methodology for roundabout capacity modeling.

Roadway Segment Capacity Analysis

SANDAG's SANTEC Guidelines includes daily traffic volume standards for roadways. To determine service levels on study area roadway segments, we compared the appropriate average daily traffic thresholds for level of service to the daily capacity of the study area roadway segments, and the existing and future volumes in the study area. By dividing the volumes by the capacities we get a volume over capacity ratio (V/C) that correlates to a specific level of service (LOS). The thresholds for determining level of service used in this analysis are summarized in Appendix B.

Analysis of Significance

To determine project impacts, SANTEC/ITE guidelines include a series of thresholds based on allowable increases in volume-to-capacity ratios that become more stringent as level of service worsens. For intersections, it is measured by the increment in delay due to the project. SANTEC significance thresholds are implemented in this report. Where roadway segments and intersections operate at LOS D or better impacts are not considered significant.

For Roundabouts, SIDRA INTERSECTION output gives capacity, performance and level of service results for the US HCM 2010 model. The roundabout capacity model uses the Delay & v/c (HCM 2010) method for Level of Service definitions based on delay and v/c ratio.

The thresholds for determining level of service used in this analysis are summarized in Appendix B.

CHAPTER 3 EXISTING CONDITIONS (2011)

ROADWAY NETWORK

The principal roadways in the study area are described briefly below. The description includes the physical characteristics, adjacent land uses, and classification of these roadways.

Camino Del Mar runs north/south connecting the community of La Jolla in the City of San Diego to Solana Beach. It is part of the Scenic Highway that extends from Oceanside to the Northern communities in the City of San Diego. The roadway functions as a 4-lane collector with two lanes in each direction. The roadway has a paved roadway width varying from 70 feet to 80 feet with a raised median (6 feet to 14 feet) in some sections. Through the study area, the roadway has a Class II bike lane of 5 to 12 feet on both sides of the road. Through the study area the roadway has sidewalks of 5 feet to 12 feet in width in certain areas. Bus stops are provided on both sides of the road and as well as parallel and Town and Country diagonal parking. The roadway provides driveway access to commercial properties through out the study area. The posted speed limit of Camino del Mar between Del Mar Heights Road and 9th Street is 40 miles per hour, between 9th Street and 15th Street it is 25 miles per hour, and north of 15th Street it is 40 miles per hour.

15th Street runs east/west within the study area. It functions as a 2-lane Collector with one lane in each direction with a roadway width of approximately 60 feet within the study area. The roadway has a raised median to the east of Camino Del Mar and a painted centerline to the west of Camino Del Mar. The roadway has sidewalks and no parking to the east of Camino Del Mar and sidewalks and diagonal parking to the west of Camino Del Mar. The road provides driveway access to fronting commercial properties.

12th Street runs east/west within the study area. The roadway functions as a 2-lane Collector with no painted median and has a roadway width of approximately 35 feet within the study area. The road has sidewalks on both sides with parallel parking. The roadway provides driveway access to fronting commercial and residential properties.

Stratford Court runs north/south within the study area. The roadway functions as a 2-lane Sub-Collector with paved roadway width of approximately 35 feet within the study area. The road offers minimal sidewalks and parallel parking on both sides within the study area. The roadway provides driveway access to fronting commercial and residential properties. Numerous speed humps are in place for traffic calming purposes.

Via de la Valle is classified as a Major. Via de la Valle is a 5-lane roadway, east of Interstate 5, with a posted speed limit of 40 miles per hour and bike lines on both sides. It also provides discontinued sidewalks. Between Highway 101 and Jimmy Durante, Via de la Valle is a 2-lane divided (Two Way Left Turn Lane) roadway with a posted speed limit of 45 miles per hour.

Jimmy Durante is a 4-lane collector undivided roadway with a Two Way Left Turn Lane (TWLTL) from Via de la Valle to the San Dieguito River. The posted speed limit is 45 miles per hour. South of the San Dieguito River, Jimmy Durante Boulevard narrows to two-lane divided roadway with a raised median and a posted speed limit of 40 miles per hour. Bike lanes are provided on both sides of the roadway. Parking is prohibited.

Lomas Santa Fe Drive is a four lane divided road with a combination of raised median and a two way left turn lanes from Highway 101 to Interstate 5. Bike lanes are provided on both sides of the road. Lomas Santa Fe Drive is classified as a 4-lane collector with a posted speed limit of 35 miles per hour. Parking is not allowed.

Del Mar Heights Road is classified as a 6-lane collector east of Interstate 5 with a posted speed limit of 40 miles per hour. Curbside parking is not allowed. Between Interstate 5 and Crest Way the roadway is classified as 4-lane Major Arterial with a posted speed limit of 40 miles per hour. Parking is not allowed on this section of Del Mar Heights Road. Del Mar Heights Road is classified as a 4-lane collector between Crest Way and Camino del Mar with a posted speed of 40 miles per hour. Parking is allowed in some areas on both sides of the roadway. Bike lanes are provided on most of the study area.

Carmel Valley Road is classified as a 2-lane Collector and provides 2-lane undivided roadway. Parking is not allowed from Camino del Mar to Via Mar Valle. Bike lanes are provided on both sides of the roadway. The posted speed limit is 30 miles per hour.

Crest Way is classified as a two lane Sub-Collector with a posted speed of 15 miles per hour. Crest Way does not provide bike lanes. Curbside parking is not allowed.

Coast Boulevard is classified as a two lane Collector with a posted speed limit of 25 miles per hour. Bike lanes are provided and parking is allowed.

Coast Highway 101 is classified as a Scenic Highway, according to the Solana Beach Circulation Element. For this study, it was analyzed as a Major Arterial roadway. Highway 101 provides four-lanes of divided travel along the coastline with bike lanes on both sides, within the study area. Curbside parking is permitted on the Westside of the road and the posted speed limit is 45 mph.

Figures 3-1 and 3-2 illustrate the existing circulation network and the intersection geometric configuration.

EXISTING TRAFFIC VOLUMES

The intersection turning movement counts were conducted during the weekday morning peak period from 7:00 AM to 9:00 AM, during the weekday evening peak period from 4:00 PM to 6:00 PM in October 2011 and November 2011. Average daily traffic volumes were obtained through machine data collection during the months of April 2011, October 2011 and November 2011. Mainline volumes were obtained from the Caltrans Performance Measurement System. The resultant existing weekday daily, morning and evening peak hour intersection volumes are shown in Figures 3-3 through 3-5. Appendix C includes existing traffic count data.

EXISTING ANALYSIS

Roadway Segment Conditions

The existing roadway segment analysis is summarized in Table 3-1. It should be noted that the segments on Camino del Mar were analyzed directionally given the unique characteristics of the roadway. As shown in Table 3-1, all roadway segments in the study area are calculated to operate at an acceptable LOS D or better based on regional guidelines, except for the following:

- Highway 101 –North of Lomas Santa Fe Drive, LOS E

- Camino del Mar – North of Jimmy Durante (SB), LOS E
- Camino del Mar – 15th Street to 13th Street (NB and SB), LOS F
- Camino del Mar – 13th Street to 12th Street (NB and SB), LOS F
- Camino del Mar – 12th Street to 11th Street (NB and SB), LOS F
- Camino del Mar – 11th Street to 9th Street (NB and SB), LOS F
- Camino del Mar – Del Mar Heights Road to Carmel Valley Road (SB), LOS E
- Camino del Mar – South of Carmel Valley Road (NB and SB), LOS E
- Via de la Valle – Del Mar Downs Road to Jimmy Durante Boulevard, LOS F
- Del Mar Heights Road – I-5 Northbound Ramps to High Bluff Drive, LOS E

Intersection Conditions

The existing intersection analysis is summarized in Table 3-2. As shown in Table 3-2, all intersections in the study area are calculated to operate at an acceptable LOS D or better.

As explained in Chapter 2 of this study, the software used to analyze the intersections in the study area uses methodologies defined in the 2000 Highway Capacity Manual (HCM) to calculate results. As such, each stop-controlled intersection in an isolated state under the existing conditions operates at an acceptable level of services. However, the close spacing, development of queues and slow traffic speeds result in a stop and go condition along the Camino del Mar corridor as it is reflected on the roadway segment analysis results described above.

Freeway Mainline Conditions

The existing freeway analysis is summarized in Table 3-3. As shown in Table 3-3, currently, the following freeway segment does not operate at LOS D or better:

- I-5 – Via de la Valle to Del Mar Heights Road (SB), LOS E

Freeway Ramp Meter Conditions

Ramp meter analysis was conducted at Via de la Valle EB to I-5 NB and I-5 ramps, Via de la Valle WB to I-5 NB and I-5 ramps, Del Mar Heights Road EB to I-5 NB and I-5 SB ramps, and Del Mar Heights Road WB to I-5 NB and I-5 SB ramps. Ramp meter rates were provided by Caltrans on January 4th, 2012. Maximum delay method is based on the most restrictive ramp meter rate. Table 3-4 presents the results using the maximum delay method.

Appendix C contains the ramp meter rates.

As shown in Table 3-4, under existing conditions, all ramps are calculated to operate with less than 15 minutes of delay under worst-case conditions except for the following:

- Del Mar Heights Road WB to I-5 SB (AM peak hour)
- Via de la Valle EB to I-5 SB (PM peak hour)

Appendix D includes existing peak hour intersection analysis worksheets.

**Table 3-1A
Existing Roadway Segment Conditions**

Roadway Segment	Lanes/ Class	LOS E Capacity	Existing Conditions		
			ADT	V/C	LOS
Highway 101					
North of Lomas Santa Fe Dr	4C	30,000	28,378	0.946	E
North of Via De La Valle	4C	30,000	21,870	0.729	D
Camino Del Mar					
North of Jimmy Durante Blvd (NB)	1C	7,500	6,003	0.800	D
North of Jimmy Durante Blvd (SB)	1C	7,500	6,298	0.840	E
Jimmy Durante Blvd to 15th St (NB)	2C	15,000	10,750	0.717	D
Jimmy Durante Blvd to 15th St (SB)	2C	15,000	10,750	0.717	D
15th St to 13th St (NB)	2C-S	7,750	10,367	1.338	F
15th St to 13th St (SB)	2C-S	7,750	8,389	1.082	F
13th St to 12th St (NB)	2C-S	7,750	10,367	1.338	F
13th St to 12th St (SB)	2C-S	7,750	8,389	1.082	F
12th St to 11th St (NB)	2C-S	7,750	10,367	1.338	F
12th St to 11th St (SB)	2C-S	7,750	8,389	1.082	F
11th St to 9th St (NB)	2C-S	7,750	10,367	1.338	F
11th St to 9th St (SB)	2C-S	7,750	8,389	1.082	F
9th St to Del Mar Heights Rd (NB)	2C	15,000	10,367	0.691	D
9th St to Del Mar Heights Rd (SB)	2C	15,000	8,389	0.559	C
Del Mar Heights Rd to Carmel Valley Rd (NB)	2C	15,000	6,349	0.423	B
Del Mar Heights Rd to Carmel Valley Rd (SB)	1C	7,500	7,285	0.971	E
South of Carmel Valley Rd (NB)	1C	7,500	6,349	0.847	E
South of Carmel Valley Rd (SB)	1C	7,500	7,285	0.971	E
Lomas Santa Fe Dr					
Solana Hills Dr to I-5 SB Ramps	4C	30,000	23,843	0.795	D
Via De La Valle					
Del Mar Downs Rd to Jimmy Durante Blvd	2C CL	15,000	19,500	1.300	F
Jimmy Durante Blvd to I-5 SB Ramps	5MA	50,000	36,324	0.726	D
East of I-5 NB Ramps	5MA	50,000	32,699	0.654	D
Jimmy Durante Blvd					
Via De La Valle to San Diegito Dr	4C	30,000	9,873	0.329	A
San Dieguito Dr to Camino Del Mar	2C CL	15,000	6,713	0.448	B
Del Mar Heights Rd					
I-5 NB Ramps to High Bluff Drive	5MA	50,000	47,068	0.941	E
I-5 SB Ramps to Mango Drive	5MA	50,000	33,727	0.675	D
Camino Del Mar to Crest Way	4C	30,000	17,003	0.567	C
Carmel Valley Rd					
East of S. Camino Del Mar	2C CL	15,000	10,775	0.718	D
15th St					
Coast Blvd to Camino Del Mar	2C CIF	8,000	5,112	0.639	D
Camino Del Mar to Luneta Dr	2C CIF	8,000	2,955	0.369	B
Crest Rd					
North of Del Mar Heights Rd	2SC	2,200	1,638	0.745	Less than C
Coast Blvd					
North of 15th St	2C	15,000	3,776	0.252	A
Stratford Ct					
15th St to 13th St	2SC	2,200	2,156	0.980	Less than C

Abbreviations: 1C: 1 lane Collector with commercial and industrial fronting property. 2C: 2 lane Collector with multi-family residential fronting property. 2C-S: 2 lane collector with stop signs. 2C CL: 2 lane Collector with a continuous left-turn lane. 2C CIF: 2 lane collector with no fronting property. 2SC: 2 lane Sub-Collector with single-family fronting property. 4C: 4 lane Collector. 4MA: 4 lane Major Arterial. 5MA: 5 lane Major Arterial.

**Table 3-2
Existing Intersection Conditions**

Intersection		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
1	Via De La Valle / Camino Del Mar	14.7	B	18.3	B
2	Via De La Valle / Jimmy Durante Blvd	27.2	C	21.6	C
3	Via De La Valle / I-5 SB Ramps	4.3	A	7.3	A
4	Via De La Valle / I-5 NB Ramps	9.0	A	9.1	A
5	Via De La Valle / San Andres Dr	19.1	B	23.9	C
6	Coast Blvd / Camino Del Mar ¹	19.7	C	14.0	B
7	15th St / Stratford Ct ³	9.3	A	10.3	B
8	12th St / Stratford Ct ³	8.6	A	8.7	A
9	15th St / Camino Del Mar	13.4	B	15.8	B
10	13th St / Camino Del Mar ¹	12.9	B	16.9	C
11	12th St / Camino Del Mar ²	12.2	B	12.6	B
12	11th St / Camino Del Mar ¹	13.1	B	16.9	C
13	9th St / Camino Del Mar	7.3	A	7.1	A
14	4th St / Del Mar Heights Rd / Camino Del Mar	22.4	C	24.5	C
15	Camino Del Mar / Carmel Valley Rd	30.6	C	20.1	C
16	Del Mar Heights Rd / Crest Way	5.6	A	6.8	A
17	Del Mar Heights Rd / I-5 SB Ramps	7.7	A	9.6	A
18	Del Mar Heights Rd / I-5 NB Ramps	21.6	C	18.8	B
19	Del Mar Heights Rd / High Bluff Dr	22.2	C	25.3	C
20	Del Mar Heights Rd / El Camino Real	32.4	C	27.0	C
21	15th St / Ocean Ave ¹	7.7	A	8.3	A

Footnotes: All intersections are signalized unless otherwise noted

¹ All - Way Stop Control

² Two - Way Stop Control

³ One - Way Stop Control

Note: LOS for All Way Stop Control intersections is based on the average control delay. Therefore, the resulting LOS might not be representative of the delay experienced on the critical approach.

**Table 3-3
Existing Freeway Mainline Conditions**

Freeway Segment	Direction	Number of Lanes ¹	Hourly Capacity	ADT ²	AM Peak Hour			PM Peak Hour		
					Volume	V/C	LOS	Volume	V/C	LOS
Interstate 5 Freeway										
Lomas Santa Fe to Via de la Valle	NB	4M + 1A + 1HOV	10,400	232,257	6,681	0.642	C	8,284	0.797	C
	SB	4M + 1A + 1HOV	10,400		9,069	0.872	D	8,068	0.776	C
Via de la Valle to Del Mar Heights Road	NB	4M + 1A + 1HOV	10,400	247,998	7,683	0.739	C	8,422	0.810	D
	SB	4M + 1A + 1HOV	10,400		9,814	0.944	E	8,346	0.803	D
Del Mar Heights Road to Carmel Valley Road	NB	5M + 1A + 1HOV	12,400	252,088	7,959	0.642	C	7,812	0.630	C
	SB	5M + 1A + 1HOV	12,400		10,721	0.865	D	8,237	0.664	C

Footnotes:

¹ M: Mainline, A: Auxiliary, HOV: High Occupancy Vehicle Lane.

² Existing ADT Volumes from CALTRANS PeMS (2011)

LOS	V/C
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46

**Table 3-4
Existing Freeway Ramp Meter Conditions**

Location	Most Restrictive Meter Rate (veh/hr/lane)	Demand (veh/hr/lane)	Excess Demand	Delay (Min)	Queue (ft)
AM Peak Hour					
Via de la Valle EB to I - 5 NB	372	134	0	0.0	0
Via de la Valle WB to I - 5 NB	473	341	0	0.0	0
Via de la Valle WB to I - 5 NB (HOV)	473	38	0	0.0	0
Via de la Valle EB to I - 5 SB	996	837	0	0.0	0
Via de la Valle EB to I - 5 SB (HOV)	996	93	0	0.0	0
Via de la Valle WB to I - 5 SB	424	297	0	0.0	0
Del Mar Heights Road to I - 5 NB	593	522	0	0.0	0
Del Mar Heights Road EB to I - 5 SB	996	628	0	0.0	0
Del Mar Heights Road EB to I - 5 SB (HOV)	996	70	0	0.0	0
Del Mar Heights Road WB to I - 5 SB	352	483	131	22.2	3,263
PM Peak Hour					
Via de la Valle EB to I - 5 NB	372	210	0	0.0	0
Via de la Valle WB to I - 5 NB	473	335	0	0.0	0
Via de la Valle WB to I - 5 NB (HOV)	473	37	0	0.0	0
Via de la Valle EB to I - 5 SB	424	606	182	25.7	4,543
Via de la Valle EB to I - 5 SB (HOV)	424	67	0	0.0	0
Via de la Valle WB to I - 5 SB	352	178	0	0.0	0
Del Mar Heights Road to I - 5 NB	593	388	0	0.0	0
Del Mar Heights Road EB to I - 5 SB	996	337	0	0.0	0
Del Mar Heights Road EB to I - 5 SB (HOV)	996	37	0	0.0	0
Del Mar Heights Road WB to I - 5 SB	368	279	0	0.0	0

Note:

Excess demand = Demand - Meter Rate

Delay = (Excess Demand/Meter Rate)*60 minutes

Queue = Excess Demand*29 feet/vehicle

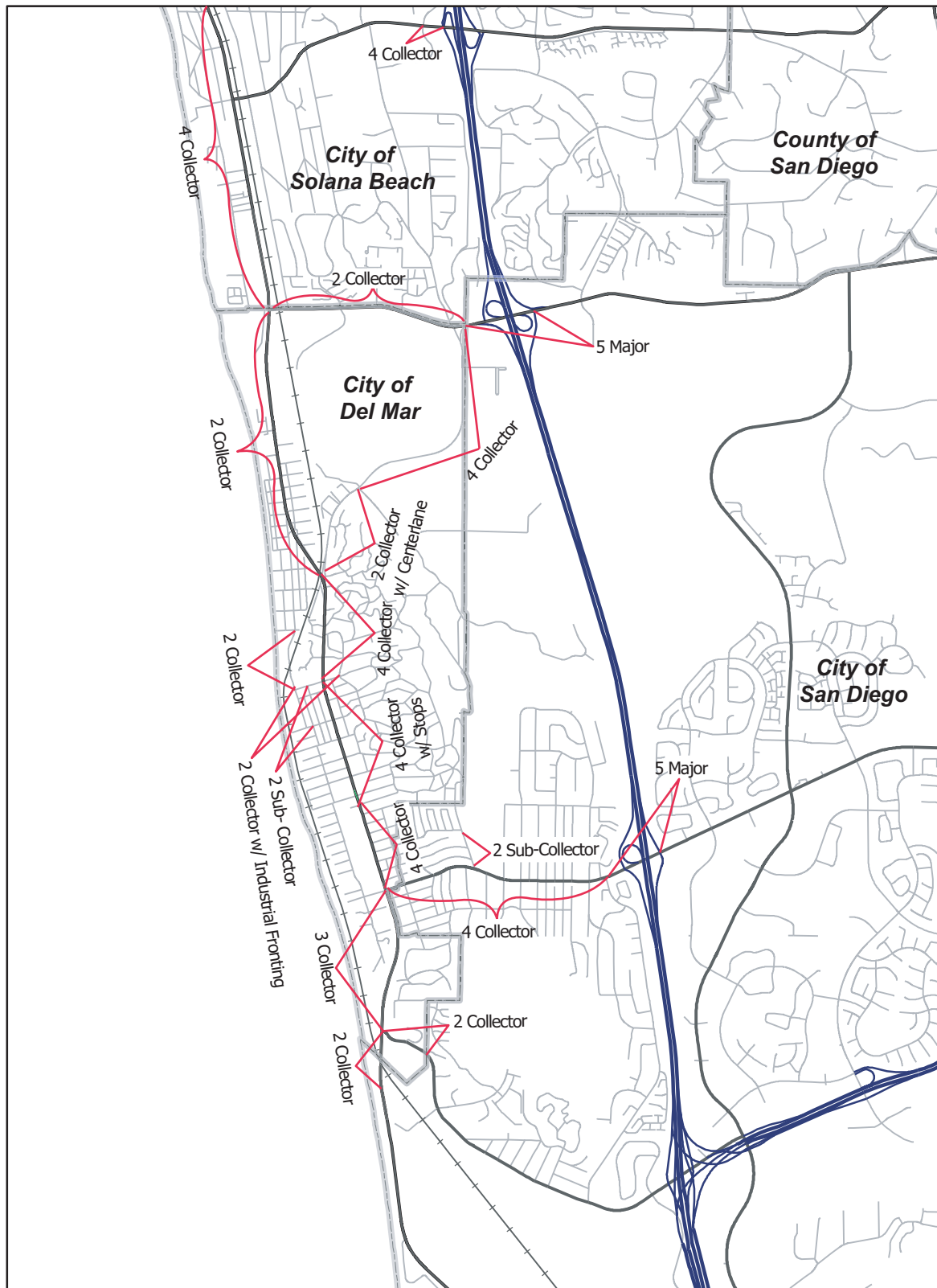


Figure 3-1
Existing Circulation Network

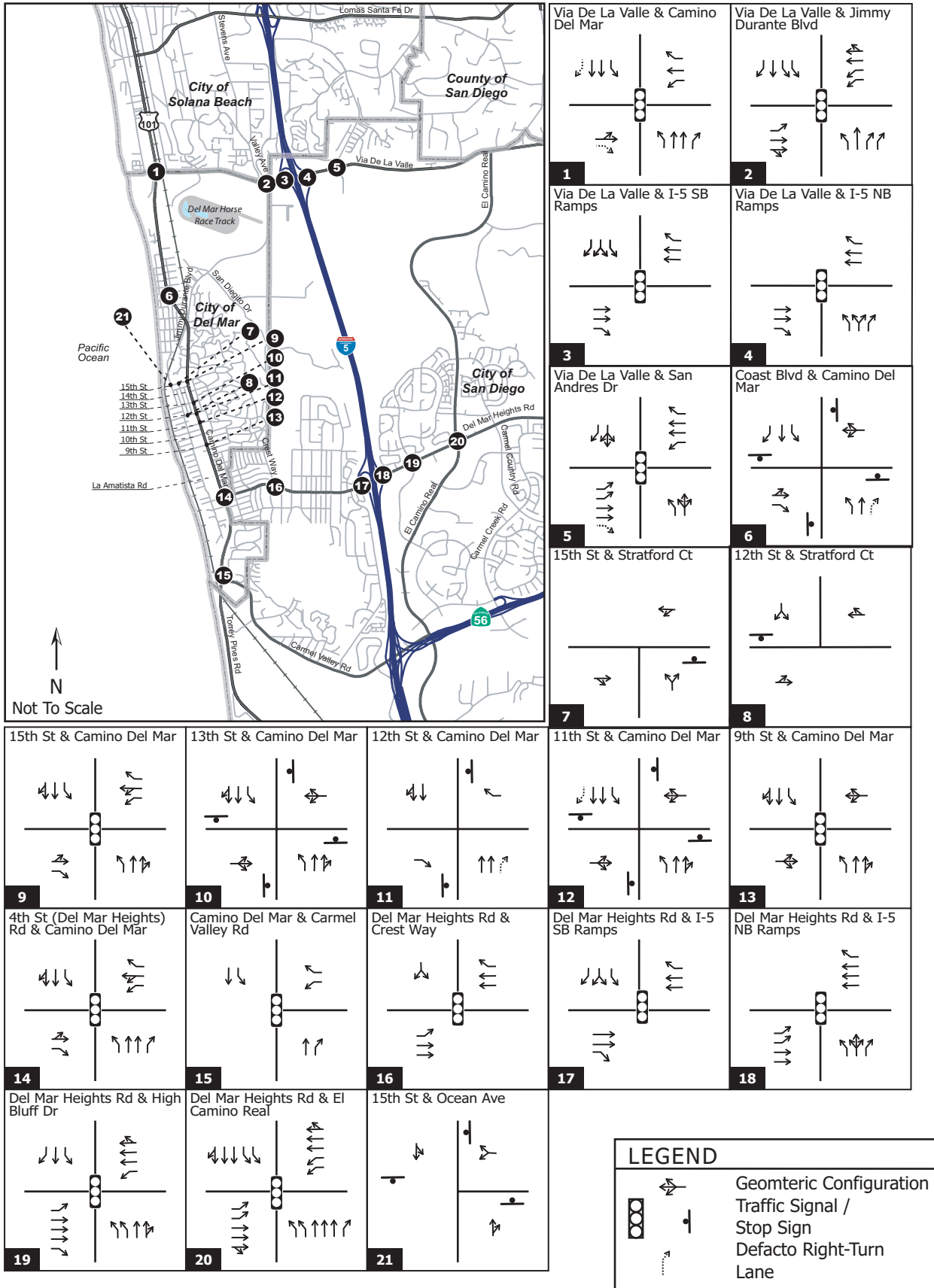
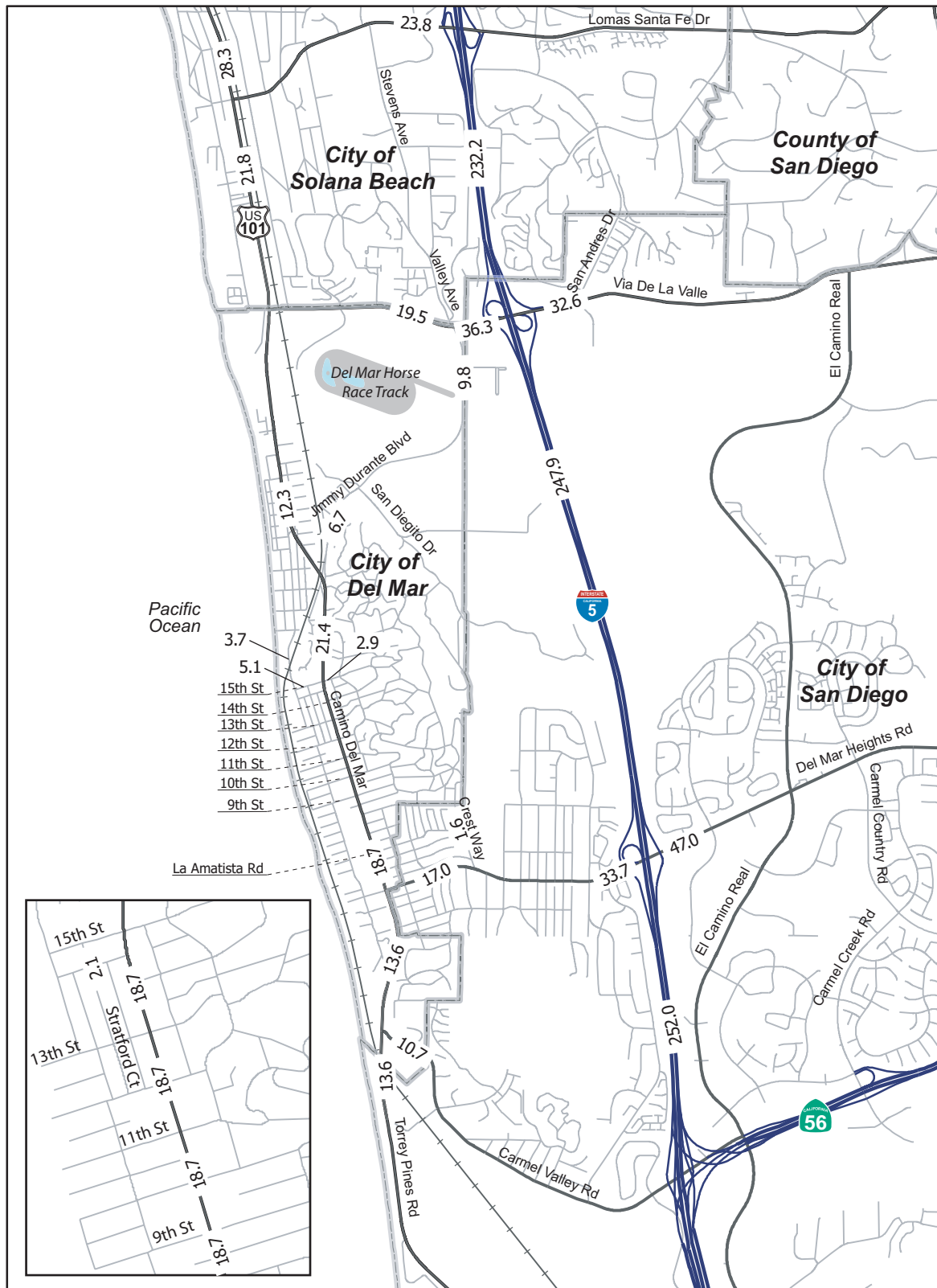


Figure 3-2
Existing Geometric Configurations



LEGEND	
—15—	Average Daily Traffic (1000s)

Figure 3-3
Existing Daily Roadway Segment Volumes

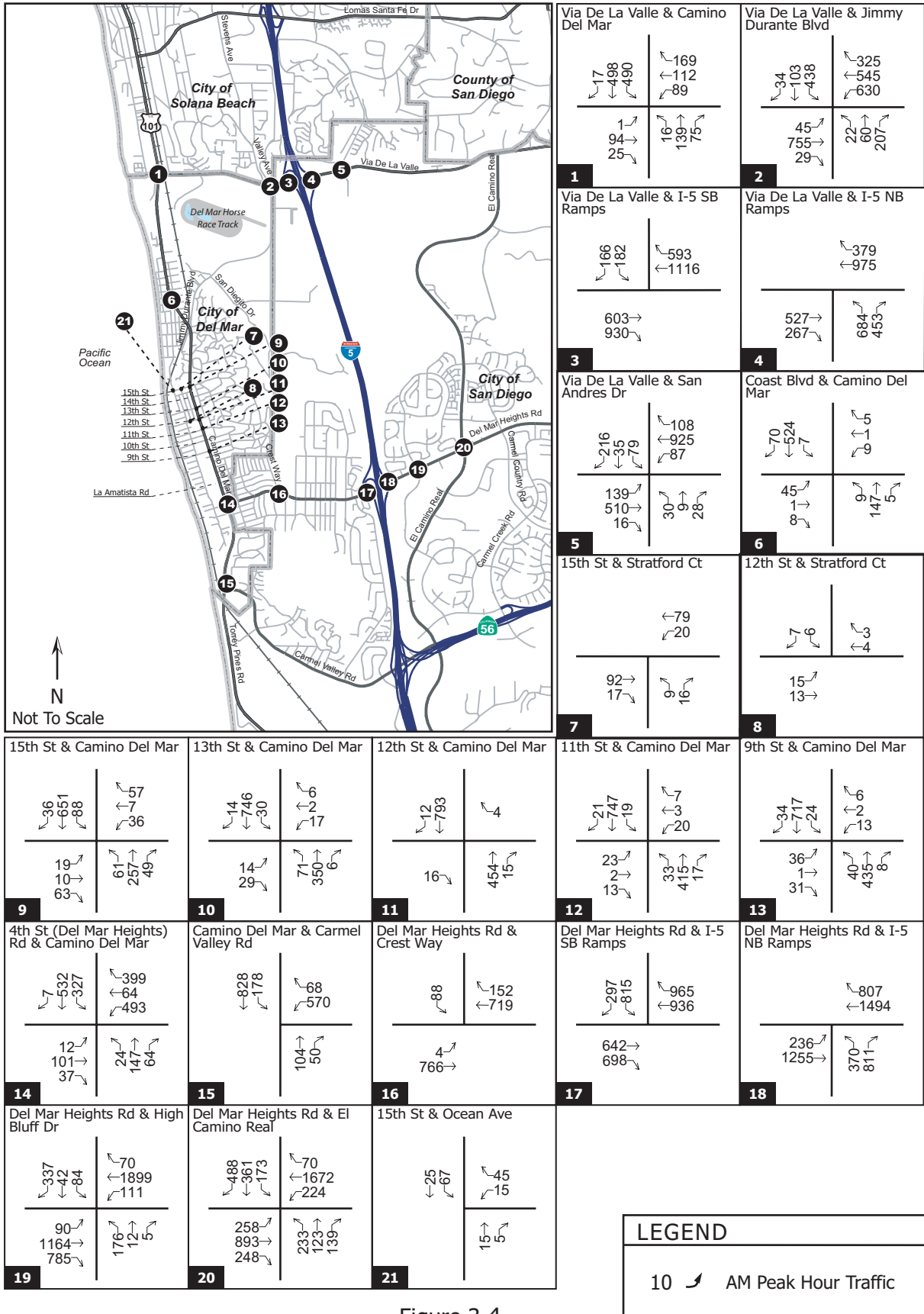


Figure 3-4
Existing AM Peak Hour Intersection Volumes

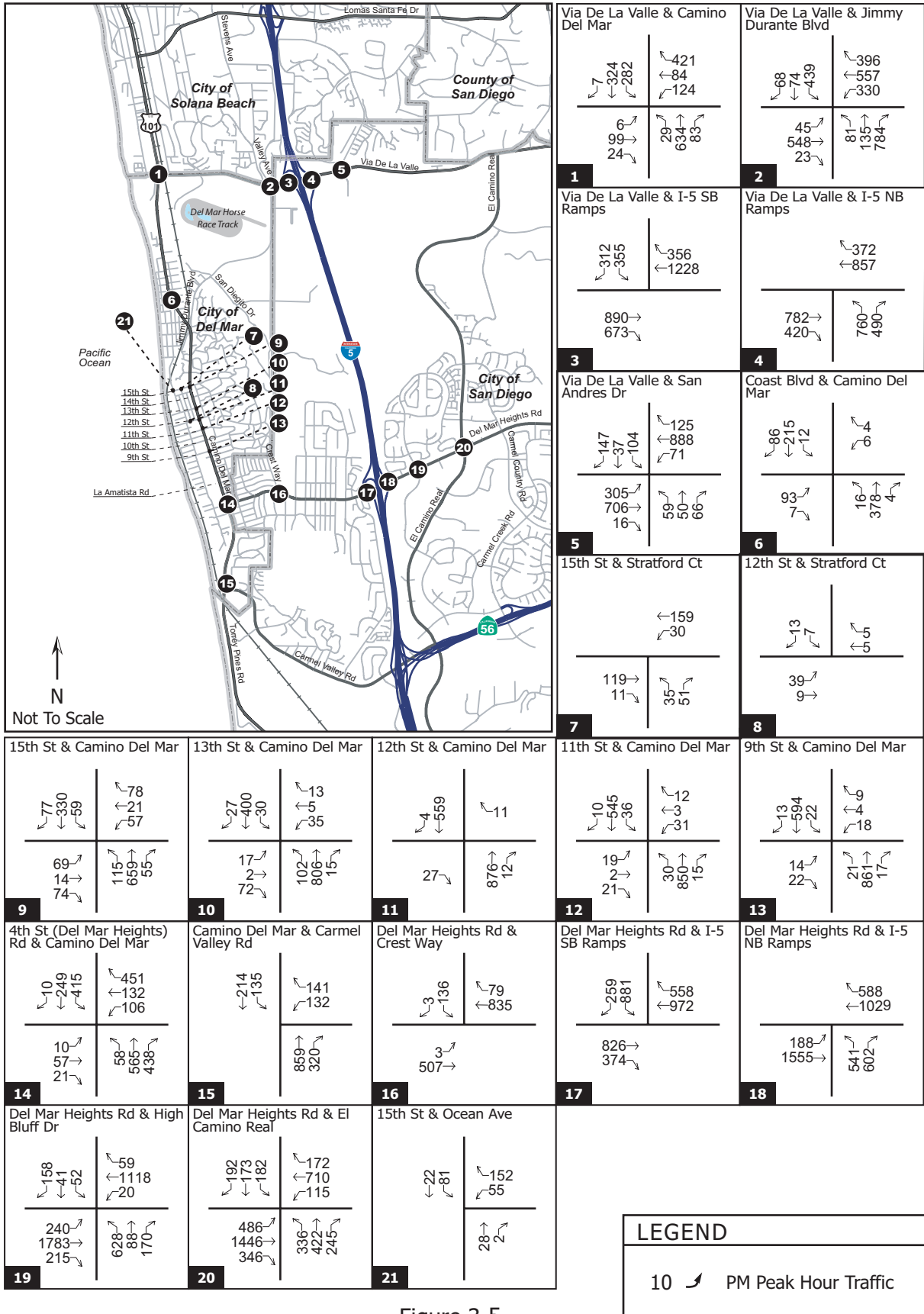


Figure 3-5
Existing PM Peak Hour Intersection Volumes

CHAPTER 4 EXISTING PLUS PROJECT CONDITIONS (2011)

ROADWAY NETWORK

The existing plus project conditions represent opening day of the proposed project using the traffic counts that were also used in the existing conditions (2011). While the majority of the roadway network conditions described in Chapter 3 remains unaltered, Camino del Mar between 9th Street and 15th Street will experience certain changes under both the *Four-lane Collector with Signals* and the *Two-lane Collector with Roundabout* alternatives. It should be noted that no changes will occur to Camino del Mar on the *No Circulation Changes* alternative. Camino del Mar roadway for the three proposed circulation alternatives is described briefly below.

NO CIRCULATION CHANGES ALTERNATIVE

Camino Del Mar runs north/south-connecting the community of La Jolla in the City of San Diego to Solana Beach. It functions as a 4-lane collector with two lanes in each direction. The roadway has a paved roadway width of approximately 75 feet with a raised median in places. Through the study area, the roadway has a bike lane on both sides of the road. Through the study area the roadway has sidewalks, bus stops on both sides and parallel parking on both sides of the road. Some head-in diagonal parking spaces also exist. The roadway provides driveway access to commercial properties through out the study area.

Currently, Camino del Mar & 15th Street is a signalized intersection, Camino del Mar & 13th Street is an all way stop controlled intersection, Camino del Mar & 11th Street is an all-way stop controlled intersection, and Camino del Mar & 9th Street is a signalized intersection. Bicycle lanes, parking and sidewalks remain unchanged from the existing conditions

FOUR LANE -COLLECTOR WITH SIGNALS ALTERNATIVE

Camino Del Mar presents the same existing physical characteristics but under this alternative both Camino del Mar & 13th Street and Camino del Mar & 11th Street are assumed to be signalized intersection.

TWO LANE -COLLECTOR WITH ROUNDABOUTS ALTERNATIVE

For this alternative Camino Del Mar is assumed to function as a 2-lane collector with one lane in each direction between 9th Street and 15th Street. Under this alternative, roundabouts were assumed at the following intersections:

- Camino del Mar & 15th Street
- Camino del Mar & 13th Street
- Camino del Mar & 11th Street
- Camino del Mar & 9th Street

Throughout the study area, Camino Del Mar provides bike lanes, sidewalks, diagonal parking, and bus stops on both sides of the street.

The roundabouts alternative configurations are shown in Figures 4-1.

NO CIRCULATION CHANGES ALTERNATIVE

OPERATIONAL ANALYSIS:

Roadway Segment Conditions

The existing with project segment analysis for the “No Circulation Changes” alternative is summarized in Table 4-1A and 4-1B. As shown in Table 4-1A and 4-1B, the following roadway segments are operating at unacceptable LOS:

- Highway 101 – North of Lomas Santa Fe Drive, LOS E
- Camino del Mar - North of Jimmy Durante Boulevard (NB and SB), LOS E
- Camino del Mar - 15th Street to 13th Street (NB and SB), LOS F
- Camino del Mar – 13th Street to 12th Street (NB and SB), LOS F
- Camino del Mar – 12th Street to 11th Street (NB and SB), LOS F
- Camino del Mar – 11th Street to 9th Street (NB and SB), LOS F
- Camino del Mar - 9th Street to Del Mar Heights Road (NB), LOS E
- Camino del Mar - Del Mar Heights Road to Carmel Valley Road (SB), LOS F
- Camino del Mar - South of Carmel Valley Road (NB and SB), LOS E
- Via de la Valle – Del Mar Downs Road to Jimmy Durante Boulevard, LOS F
- Del Mar Heights Road – I-5 NB Ramps to High Bluff Drive, LOS E
- Stratford Court – 15th Street to 13th Street, greater than C

Potentially significant impact locations are listed below:

- Camino del Mar - North of Jimmy Durante Boulevard (NB and SB), LOS E
- Camino del Mar - 15th Street to 13th Street (NB and SB), LOS F
- Camino del Mar – 13th Street to 12th Street (NB and SB), LOS F
- Camino del Mar – 12th Street to 11th Street (NB and SB), LOS F
- Camino del Mar – 11th Street to 9th Street (NB and SB), LOS F
- Camino del Mar - 9th Street to Del Mar Heights Road (NB), LOS E
- Camino del Mar - Del Mar Heights Road to Carmel Valley Road (SB), LOS F
- Camino del Mar - South of Carmel Valley Road (NB and SB), LOS E
- Stratford Court – 15th Street to 13th Street, greater than C

Intersection Conditions

The existing with project intersection analysis for the “No Circulation Changes” alternative is summarized in Table 4-2A and 4-2B. As shown in Table 4-2A and 4-2B, all intersections in the study area are calculated to operate at an acceptable LOS D.

Freeway Mainline Conditions

The existing with project freeway mainline analysis is summarized in Table 4-3. As shown in Table 4-3, the following freeway segment does not operate at LOS D or better.

- I-5 - Via de la Valle to Del Mar Heights Road (SB), LOS E (AM Peak Hour)

Freeway Ramp Meter Conditions

The existing with project freeway ramp meter analysis is summarized in Table 4-4. As shown in Table 4-4, the project contribution represents no potential significant impacts.

The resultant existing daily, weekday morning and evening peak hour intersection volumes with project are shown in Figures 4-2 through 4-4.

Appendix E includes existing with project peak hour intersection analysis worksheets for the no circulation changes alternative.

**Table 4-1A
Existing Plus Project Daily Roadway Segment Conditions – No Circulations Changes**

Roadway Segment	Existing Conditions					Project Traffic	Existing Conditions With Project					Comparison	
	Lanes/Class	LOS E Capacity	ADT	V/C	LOS		Lanes/Class	LOS E Capacity	ADT	V/C	LOS	Δ V/C	Potentially Significant?
Highway 101													
North of Lomas Santa Fe Dr	4C	30,000	28,378	0.946	E	271	4C	30,000	28,649	0.955	E	0.009	No
North of Via De La Valle	4C	30,000	21,870	0.729	D	406	4C	30,000	22,276	0.743	D	0.014	No
Camino Del Mar													
North of Jimmy Durante Blvd (NB)	1C	7,500	6,003	0.800	D	271	1C	7,500	6,274	0.837	E	0.036	Yes
North of Jimmy Durante Blvd (SB)	1C	7,500	6,298	0.840	E	271	1C	7,500	6,569	0.876	E	0.036	Yes
Jimmy Durante Blvd to 15th St (NB)	2C	15,000	10,750	0.717	D	1,498	2C	15,000	12,248	0.817	D	0.100	No
Jimmy Durante Blvd to 15th St (SB)	2C	15,000	10,750	0.717	D	1,498	2C	15,000	12,248	0.817	D	0.100	No
15th St to 13th St (NB)	2C-S	7,750	10,367	1.338	F	1,560	2C-S	7,750	11,927	1.539	F	0.201	Yes
15th St to 13th St (SB)	2C-S	7,750	8,389	1.082	F	1,560	2C-S	7,750	9,949	1.284	F	0.201	Yes
13th St to 12th St (NB)	2C-S	7,750	10,367	1.338	F	1,985	2C-S	7,750	12,352	1.594	F	0.256	Yes
13th St to 12th St (SB)	2C-S	7,750	8,389	1.082	F	1,985	2C-S	7,750	10,374	1.339	F	0.256	Yes
12th St to 11th St (NB)	2C-S	7,750	10,367	1.338	F	2,074	2C-S	7,750	12,441	1.605	F	0.268	Yes
12th St to 11th St (SB)	2C-S	7,750	8,389	1.082	F	2,074	2C-S	7,750	10,463	1.350	F	0.268	Yes
11th St to 9th St (NB)	2C-S	7,750	10,367	1.338	F	2,462	2C-S	7,750	12,829	1.655	F	0.318	Yes
11th St to 9th St (SB)	2C-S	7,750	8,389	1.082	F	2,462	2C-S	7,750	10,851	1.400	F	0.318	Yes
9th St to Del Mar Heights Rd (NB)	2C	15,000	10,367	0.691	D	2,619	2C	15,000	12,986	0.866	E	0.175	Yes
9th St to Del Mar Heights Rd (SB)	2C	15,000	8,389	0.559	C	2,619	2C	15,000	11,008	0.734	D	0.175	No
Del Mar Heights Rd to Carmel Valley Rd (NB)	2C	15,000	6,349	0.423	B	421	2C	15,000	6,770	0.451	B	0.028	No
Del Mar Heights Rd to Carmel Valley Rd (SB)	1C	7,500	7,285	0.971	E	421	1C	7,500	7,706	1.027	F	0.056	Yes
South of Carmel Valley Rd (NB)	1C	7,500	6,349	0.847	E	203	1C	7,500	6,552	0.874	E	0.027	Yes
South of Carmel Valley Rd (SB)	1C	7,500	7,285	0.971	E	203	1C	7,500	7,488	0.998	E	0.027	Yes
Lomas Santa Fe Dr													
Solana Hills Dr to I-5 SB Ramps	4C	30,000	23,843	0.795	D	68	4C	30,000	23,911	0.797	D	0.002	No
Via De La Valle													
Del Mar Downs Rd to Jimmy Durante Blvd	2C CL	15,000	19,500	1.300	F	0	2C CL	15,000	19,500	1.300	F	0.000	No
Jimmy Durante Blvd to I-5 SB Ramps	5MA	50,000	36,324	0.726	D	1,404	5MA	50,000	37,728	0.755	D	0.028	No
East of I-5 NB Ramps	5MA	50,000	32,699	0.654	D	656	5MA	50,000	33,355	0.667	D	0.013	No
Jimmy Durante Blvd													
Via De La Valle to San Diegito Dr	4C	30,000	9,873	0.329	A	1,964	4C	30,000	11,837	0.395	B	0.065	No
San Dieguito Dr to Camino Del Mar	2C CL	15,000	6,713	0.448	B	2,057	2C CL	15,000	8,770	0.585	C	0.137	No

Note: 1 Lanes/Class and Capacity change only for With Project conditions, Baseline Conditions do not change

Abbreviations: 1C: 1 lane Collector with a continuous left-turn lane. 2C: 2 lane Collector. 2C-S: 2 lane collector with stop signs. 2C CL: 2 lane Collector with a continuous left-turn lane. 2C CIF: 2 lane Collector with commercial and industrial fronting property. 2SC: 2 lane Sub-Collector with single-family fronting property. 4C: 4 lane Collector. 4MA: 4 lane Major Arterial. 5MA: 5 lane Major Arterial.

**Table 4-1B
Existing Plus Project Daily Roadway Segment Conditions – No Circulations Changes**

Roadway Segment	Existing Conditions					Project Traffic	Existing Conditions With Project					Comparison	
	Lanes/Class	LOS E Capacity	ADT	V/C	LOS		Lanes/Class	LOS E Capacity	ADT	V/C	LOS	Δ V/C	Potentially Significant?
Del Mar Heights Rd													
I-5 NB Ramps to High Bluff Drive	5MA	50,000	47,068	0.941	E	842	5MA	50,000	47,910	0.958	E	0.017	No
I-5 SB Ramps to Mango Drive	5MA	50,000	33,727	0.675	D	3,089	5MA	50,000	36,816	0.736	D	0.062	No
Camino Del Mar to Crest Way	4C	30,000	17,003	0.567	C	3,229	4C	30,000	20,232	0.674	D	0.108	No
Carmel Valley Rd													
East of S. Camino Del Mar	2C CL	15,000	10,775	0.718	D	203	2C CL	15,000	10,978	0.732	D	0.014	No
15th St													
Coast Blvd to Camino Del Mar	2C CIF	8,000	5,112	0.639	D	1,216	2C CIF	8,000	6,328	0.791	D	0.152	No
Camino Del Mar to Luneta Dr	2C CIF	8,000	2,955	0.369	B	460	2C CIF	8,000	3,415	0.427	B	0.058	No
Crest Rd													
North of Del Mar Heights Rd	2SC	2,200	1,638	0.745	Less than C	46	2SC	2,200	1,684	0.765	Less than C	0.021	No
Coast Blvd													
North of 15th St	2C	15,000	3,776	0.252	A	468	2C	15,000	4,244	0.283	A	0.031	No
Stratford Ct													
15th St to 13th St	2SC	2,200	2,156	0.980	Less than C	424	2SC	2,200	2,580	1.173	Greater than C	0.193	Yes

Note: ¹ Lanes/Class and Capacity change only for With Project conditions, Baseline Conditions do not change

Abbreviations: 1C: 1 lane Collector with a continuous left-turn lane. 2C: 2 lane Collector. 2C-S: 2 lane collector with stop signs. 2C CL: 2 lane Collector with a continuous left-turn lane. 2C CIF: 2 lane Collector with commercial and industrial fronting property. 2SC: 2 lane Sub-Collector with single-family fronting property. 4C: 4 lane Collector. 4MA: 4 lane Major Arterial. 5MA: 5 lane Major Arterial.

Table 4-2A
Existing Plus Project AM Peak Hour Intersection Conditions – No Circulation Changes

Intersection	Existing Conditions		Existing Conditions With Project		Δ Delay	Potentially Significant?
	Delay	LOS	Delay	LOS		
AM Peak Hour						
1. Via De La Valle / Camino Del Mar	14.7	B	14.9	B	0.2	No
2. Via De La Valle / Jimmy Durante Blvd	27.2	C	28.2	C	1.0	No
3. Via De La Valle / I-5 SB Ramps	4.3	A	4.5	A	0.2	No
4. Via De La Valle / I-5 NB Ramps	9.0	A	9.0	A	0.0	No
5. Via De La Valle / San Andres Dr	19.1	B	19.3	B	0.2	No
6. Coast Blvd / Camino Del Mar	19.7	C	21.6	C	1.9	No
7. 15th St / Stratford Ct	9.3	A	9.9	A	0.6	No
8. 12th St / Stratford Ct	8.6	A	8.7	A	0.1	No
9. 15th St / Camino Del Mar ¹	13.4	B	15.7	B	2.3	No
10. 13th St / Camino Del Mar ¹	12.9	B	16.4	C	3.5	No
11. 12th St / Camino Del Mar ¹	12.2	B	13.3	B	1.1	No
12. 11th St / Camino Del Mar ¹	13.1	B	17.9	C	4.8	No
13. 9th St / Camino Del Mar ¹	7.3	A	8.7	A	1.4	No
14. 4th St / Camino Del Mar	22.4	C	32.0	C	9.6	No
15. Camino Del Mar / Carmel Valley Rd	30.6	C	31.6	C	1.0	No
16. Del Mar Heights Rd / Crest Way	5.6	A	5.7	A	0.1	No
17. Del Mar Heights Rd / I-5 SB Ramps	7.7	A	8.0	A	0.3	No
18. Del Mar Heights Rd / I-5 NB Ramps	21.6	C	22.4	C	0.8	No
19. Del Mar Heights Rd / High Bluff Dr	22.2	C	22.7	C	0.5	No
20. Del Mar Heights Rd / El Camino Real	32.4	C	32.8	C	0.4	No
21. 15th St / Ocean Ave	7.7	A	8.0	A	0.3	No

Footnote: ¹Geometry change only for With Project conditions. Baseline Conditions are the same as Existing Conditions and do not change.

Note: LOS for All Way Stop Control intersections is based on the average control delay. Therefore, the resulting LOS might not be representative of the delay experienced on the critical approach.

Table 4-2B
Existing Plus Project PM Peak Hour Intersection Conditions – No Circulation Changes

Intersection	Existing Conditions		Existing Conditions With Project		Δ Delay	Potentially Significant?
	Delay	LOS	Delay	LOS		
PM Peak Hour						
1. Via De La Valle / Camino Del Mar	18.3	B	18.3	B	0.0	No
2. Via De La Valle / Jimmy Durante Blvd	21.6	C	22.5	C	0.9	No
3. Via De La Valle / I-5 SB Ramps	7.3	A	7.7	A	0.4	No
4. Via De La Valle / I-5 NB Ramps	9.1	A	9.2	A	0.1	No
5. Via De La Valle / San Andres Dr	23.9	C	24.1	C	0.2	No
6. Coast Blvd / Camino Del Mar	14.0	B	15.1	C	1.1	No
7. 15th St / Stratford Ct	10.3	B	11.3	B	1.0	No
8. 12th St / Stratford Ct	8.7	A	8.8	A	0.1	No
9. 15th St / Camino Del Mar ¹	15.8	B	17.2	B	1.4	No
10. 13th St / Camino Del Mar ¹	16.9	C	29.1	D	12.2	No
11. 12th St / Camino Del Mar ¹	12.6	B	12.8	B	0.2	No
12. 11th St / Camino Del Mar ¹	16.9	C	34.2	D	17.3	No
13. 9th St / Camino Del Mar ¹	7.1	A	8.8	A	1.7	No
14. 4th St / Camino Del Mar	24.5	C	30.0	C	5.5	No
15. Camino Del Mar / Carmel Valley Rd	20.1	C	21.4	C	1.3	No
16. Del Mar Heights Rd / Crest Way	6.8	A	7.6	A	0.8	No
17. Del Mar Heights Rd / I-5 SB Ramps	9.6	A	10.4	B	0.8	No
18. Del Mar Heights Rd / I-5 NB Ramps	18.8	B	20.3	C	1.5	No
19. Del Mar Heights Rd / High Bluff Dr	25.3	C	25.7	C	0.4	No
20. Del Mar Heights Rd / El Camino Real	27.0	C	27.1	C	0.1	No
21. 15th St / Ocean Ave	8.3	A	8.8	A	0.5	No

Footnote: ¹Geometry change only for With Project conditions. Baseline Conditions are the same as Existing Conditions and do not change.

Note: LOS for All Way Stop Control intersections is based on the average control delay. Therefore, the resulting LOS might not be representative of the delay experienced on the critical approach.

**Table 4-3
Existing Plus Project Freeway Mainline Conditions – No Circulation Changes**

Freeway Segment	Direction	Number of Lanes ¹	Hourly Capacity	ADT ²	Existing Conditions						Existing Conditions with Project						Comparison		Potentially Significant?
					AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			Increase V/C		
					Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	
Interstate 5 Freeway																			
Lomas Santa Fe to Via de la Valle	NB	4M + 1A + 1HOV	10,400	232,257	6,681	0.642	C	8,284	0.797	C	6,701	0.644	C	8,321	0.800	D	0.002	0.004	No
	SB	4M + 1A + 1HOV	10,400		9,069	0.872	D	8,068	0.776	C	9,091	0.874	D	8,087	0.778	C	0.002	0.002	No
Via de la Valle to Del Mar Heights Road	NB	4M + 1A + 1HOV	10,400	247,998	7,683	0.739	C	8,422	0.810	D	7,683	0.739	C	8,422	0.810	D	0.000	0.000	No
	SB	5M + 1A + 1HOV	10,400		9,814	0.944	E	8,346	0.803	D	9,814	0.944	E	8,346	0.803	D	0.000	0.000	No
Del Mar Heights Road to Carmel Valley Road	NB	5M + 1A + 1HOV	12,400	252,088	7,959	0.642	C	7,812	0.630	C	8,009	0.646	C	7,889	0.636	C	0.004	0.006	No
	SB	5M + 1A + 1HOV	12,400		10,721	0.865	D	8,237	0.664	C	10,787	0.870	D	8,320	0.671	C	0.005	0.007	No

Notes:

¹ M: Mainline, A: Auxiliary, HOV: High Occupancy Vehicle Lane.

² Existing ADT Volumes from CALTRANS (2011)

³ The three circulation alternatives do not affect the freeway mainline

LOS	V/C
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46

**Table 4-4
Existing Plus Project Freeway Ramp Meter Conditions - No Circulation Changes**

Location	Existing Conditions					Existing Conditions with Project					Comparison	
	Meter Rate (veh/hr/lane)	Demand (veh/hr/lane)	Excess Demand	Delay (Min)	Queue (ft)	Meter Rate (veh/hr/lane)	Demand (veh/hr/lane)	Excess Demand	Delay (Min)	Queue (ft)	Δ Delay (Min)	Potentially Significant?
AM Peak Hour												
Via de la Valle EB to I - 5 NB	372	134	0	0.0	0	372	146	0	0.0	0	0.0	No
Via de la Valle WB to I - 5 NB	473	341	0	0.0	0	473	341	0	0.0	0	0.0	No
Via de la Valle WB to I - 5 NB (HOV)	473	38	0	0.0	0	473	38	0	0.0	0	0.0	No
Via de la Valle EB to I - 5 SB	996	837	0	0.0	0	996	848	0	0.0	0	0.0	No
Via de la Valle EB to I - 5 SB (HOV)	996	93	0	0.0	0	996	94	0	0.0	0	0.0	No
Via de la Valle WB to I - 5 SB	424	297	0	0.0	0	424	297	0	0.0	0	0.0	No
Del Mar Heights Road to I - 5 NB	593	522	0	0.0	0	593	522	0	0.0	0	0.0	No
Del Mar Heights Road EB to I - 5 SB	996	628	0	0.0	0	996	658	0	0.0	0	0.0	No
Del Mar Heights Road EB to I - 5 SB (HOV)	996	70	0	0.0	0	996	73	0	0.0	0	0.0	No
Del Mar Heights Road WB to I - 5 SB	352	483	131	22.2	3,785	352	483	131	22.2	3,785	0.0	No
PM Peak Hour												
Via de la Valle EB to I - 5 NB	372	210	0	0.0	0	372	224	0	0.0	0	0.0	No
Via de la Valle WB to I - 5 NB	473	335	0	0.0	0	473	335	0	0.0	0	0.0	No
Via de la Valle WB to I - 5 NB (HOV)	473	37	0	0.0	0	473	37	0	0.0	0	0.0	No
Via de la Valle EB to I - 5 SB	424	606	182	25.7	5,269	424	618	194	27.5	5,636	1.8	No
Via de la Valle EB to I - 5 SB (HOV)	424	67	0	0.0	0	424	69	0	0.0	0	0.0	No
Via de la Valle WB to I - 5 SB	352	178	0	0.0	0	352	178	0	0.0	0	0.0	No
Del Mar Heights Road to I - 5 NB	593	388	0	0.0	0	593	388	0	0.0	0	0.0	No
Del Mar Heights Road EB to I - 5 SB	996	337	0	0.0	0	996	371	0	0.0	0	0.0	No
Del Mar Heights Road EB to I - 5 SB (HOV)	996	37	0	0.0	0	996	41	0	0.0	0	0.0	No
Del Mar Heights Road WB to I - 5 SB	368	279	0	0.0	0	368	279	0	0.0	0	0.0	No

Note:

Excess demand = Demand - Meter Rate

Delay = (Excess Demand/Meter Rate)*60 minutes

Queue = Excess Demand*29 feet/vehicle

The three circulation alternatives do not affect the freeway mainline

FOUR-LANES WITH SIGNALS ALTERNATIVE

OPERATIONAL ANALYSIS:

The roadway capacity on Camino del Mar under this circulation alternative will be 30,000 ADT. At stop-controlled intersections, vehicles capacity and delay are influenced by conflicting flows of traffic meeting at a given intersection. Signals allow for a greater level of control of traffic flows by allowing right-of-way to conflicting traffic movements. When properly programmed and timed, traffic signals provide increase capacity on a given roadway by alternatively granting the right-of-way to various traffic movements.

Roadway Segment Conditions

The existing plus project roadway segment analysis for the “Four-Lane Collector With Signals” alternative is summarized in Table 4-5A and 4-5B. As shown in Table 4-5A and 4-5B, all roadway segments in the study area are calculated to operate at an acceptable LOS D or better except for the following:

- Highway 101 – North of Lomas Santa Fe Drive, LOS E
- Camino del Mar - North of Jimmy Durante Boulevard (NB and SB), LOS E
- Camino del Mar –11th Street to 9th Street (NB), LOS E
- Camino del Mar - 9th Street to Del Mar Heights Road (NB), LOS E
- Camino del Mar - Del Mar Heights Road to Carmel Valley Road (SB), LOS F
- Camino del Mar - South of Carmel Valley Road (NB and SB), LOS E
- Via de la Valle – Del Mar Downs Road to Jimmy Durante Boulevard, LOS F
- Del Mar Heights Road – I-5 NB Ramps to High Bluff Drive, LOS E
- Stratford Court – 15th Street to 13th Street, greater than C

With the addition of the project traffic, the following segments are calculated to exceed the allowable increased delay resulting into potential significant impacts.

- Camino del Mar - North of Jimmy Durante Boulevard (NB and SB), LOS E
- Camino del Mar - 9th Street to Del Mar Heights Road (NB), LOS E
- Camino del Mar - Del Mar Heights Road to Carmel Valley Road (SB), LOS F
- Camino del Mar - South of Carmel Valley Road (NB and SB), LOS E
- Stratford Court – 15th Street to 13th Street, greater than C

Intersection Conditions

The existing plus project intersection analysis for the “Four-Lane Collector With Signals” alternative is summarized in Table 4-6A and 4-6B. As seen in Table 4-6A and 4-6B, all intersections in the study area are calculated to operate at an acceptable LOS D or better.

Freeway Mainline and Ramp Meter Conditions

The existing with project freeway mainline analysis and ramp meter conditions for the “Four-Lane Collector With Signals” is the same as the “No Circulation Changes” alternative and is summarized in Tables 4-3 and 4-4 respectively.

Appendix F includes existing with project peak hour intersection analysis worksheets for the four lane collector with signals alternative.

**Table 4-5A
Existing Plus Project Daily Roadway Segment Conditions - Four-Lanes with Signals**

Roadway Segment	Existing Conditions					Project Traffic	Existing Conditions With Project					Comparison	
	Lanes/Class	LOS E Capacity	ADT	V/C	LOS		Lanes/Class	LOS E Capacity	ADT	V/C	LOS	Δ V/C	Potentially Significant?
Highway 101													
North of Lomas Santa Fe Dr	4C	30,000	28,378	0.946	E	271	4C	30,000	28,649	0.955	E	0.009	No
North of Via De La Valle	4C	30,000	21,870	0.729	D	406	4C	30,000	22,276	0.743	D	0.014	No
Camino Del Mar													
North of Jimmy Durante Blvd (NB)	1C	7,500	6,003	0.800	D	271	1C	7,500	6,274	0.837	E	0.036	Yes
North of Jimmy Durante Blvd (SB)	1C	7,500	6,298	0.840	E	271	1C	7,500	6,569	0.876	E	0.036	Yes
Jimmy Durante Blvd to 15th St (NB)	2C	15,000	10,750	0.717	D	1,498	2C	15,000	12,248	0.817	D	0.100	No
Jimmy Durante Blvd to 15th St (SB)	2C	15,000	10,750	0.717	D	1,498	2C	15,000	12,248	0.817	D	0.100	No
15th St to 13th St (NB)	2C-S	7,750	10,367	1.338	F	1,560	2C	15,000	11,927	0.795	D	-0.543	No
15th St to 13th St (SB)	2C-S	7,750	8,389	1.082	F	1,560	2C	15,000	9,949	0.663	C	-0.419	No
13th St to 12th St (NB)	2C-S	7,750	10,367	1.338	F	1,985	2C	15,000	12,352	0.823	D	-0.514	No
13th St to 12th St (SB)	2C-S	7,750	8,389	1.082	F	1,985	2C	15,000	10,374	0.692	D	-0.391	No
12th St to 11th St (NB)	2C-S	7,750	10,367	1.338	F	2,074	2C	15,000	12,441	0.829	D	-0.508	No
12th St to 11th St (SB)	2C-S	7,750	8,389	1.082	F	2,074	2C	15,000	10,463	0.698	D	-0.385	No
11th St to 9th St (NB)	2C-S	7,750	10,367	1.338	F	2,462	2C	15,000	12,829	0.855	E	-0.482	No
11th St to 9th St (SB)	2C-S	7,750	8,389	1.082	F	2,462	2C	15,000	10,851	0.723	D	-0.359	No
9th St to Del Mar Heights Rd (NB)	2C	15,000	10,367	0.691	D	2,619	2C	15,000	12,986	0.866	E	0.175	Yes
9th St to Del Mar Heights Rd (SB)	2C	15,000	8,389	0.559	C	2,619	2C	15,000	11,008	0.734	D	0.175	No
Del Mar Heights Rd to Carmel Valley Rd (NB)	2C	15,000	6,349	0.423	B	421	2C	15,000	6,770	0.451	B	0.028	No
Del Mar Heights Rd to Carmel Valley Rd (SB)	1C	7,500	7,285	0.971	E	421	1C	7,500	7,706	1.027	F	0.056	Yes
South of Carmel Valley Rd (NB)	1C	7,500	6,349	0.847	E	203	1C	7,500	6,552	0.874	E	0.027	Yes
South of Carmel Valley Rd (SB)	1C	7,500	7,285	0.971	E	203	1C	7,500	7,488	0.998	E	0.027	Yes
Lomas Santa Fe Dr													
Solana Hills Dr to I-5 SB Ramps	4C	30,000	23,843	0.795	D	68	4C	30,000	23,911	0.797	D	0.002	No
Via De La Valle													
Del Mar Downs Rd to Jimmy Durante Blvd	2C CL	15,000	19,500	1.300	F	0	2C CL	15,000	19,500	1.300	F	0.000	No
Jimmy Durante Blvd to I-5 SB Ramps	5MA	50,000	36,324	0.726	D	1,404	5MA	50,000	37,728	0.755	D	0.028	No
East of I-5 NB Ramps	5MA	50,000	32,699	0.654	D	656	5MA	50,000	33,355	0.667	D	0.013	No
Jimmy Durante Blvd													
Via De La Valle to San Dieguito Dr	4C	30,000	9,873	0.329	A	1,964	4C	30,000	11,837	0.395	B	0.065	No
San Dieguito Dr to Camino Del Mar	2C CL	15,000	6,713	0.448	B	2,057	2C CL	15,000	8,770	0.585	C	0.137	No

Note: ¹ Lanes/Class and Capacity change only for With Project conditions, Baseline Conditions do not change

Abbreviations: 1C: 1 lane Collector with a continuous left-turn lane. 2C: 2 lane Collector. 2C-S: 2 lane collector with stop signs. 2C CL: 2 lane Collector with a continuous left-turn lane. 2C CIF: 2 lane Collector with commercial and industrial fronting property. 2SC: 2 lane Sub-Collector with single-family fronting property. 4C: 4 lane Collector. 4MA: 4 lane Major Arterial. 5MA: 5 lane Major Arterial.

**Table 4-5B
Existing Plus Project Daily Roadway Segment Conditions - Four-Lanes with Signals**

Roadway Segment	Existing Conditions					Project Traffic	Existing Conditions With Project					Comparison	
	Lanes/Class	LOS E Capacity	ADT	V/C	LOS		Lanes/Class	LOS E Capacity	ADT	V/C	LOS	Δ V/C	Potentially Significant?
Del Mar Heights Rd													
I-5 NB Ramps to High Bluff Drive	5MA	50,000	47,068	0.941	E	842	5MA	50,000	47,910	0.958	E	0.017	No
I-5 SB Ramps to Mango Drive	5MA	50,000	33,727	0.675	D	3,089	5MA	50,000	36,816	0.736	D	0.062	No
Camino Del Mar to Crest Way	4C	30,000	17,003	0.567	C	3,229	4C	30,000	20,232	0.674	D	0.108	No
Carmel Valley Rd													
East of S. Camino Del Mar	2C CL	15,000	10,775	0.718	D	203	2C CL	15,000	10,978	0.732	D	0.014	No
15th St													
Coast Blvd to Camino Del Mar	2C CIF	8,000	5,112	0.639	D	1,216	2C CIF	8,000	6,328	0.791	D	0.152	No
Camino Del Mar to Luneta Dr	2C CIF	8,000	2,955	0.369	B	460	2C CIF	8,000	3,415	0.427	B	0.058	No
Crest Rd													
North of Del Mar Heights Rd	2SC	2,200	1,638	0.745	Less than C	46	2SC	2,200	1,684	0.765	Less than C	0.021	No
Coast Blvd													
North of 15th St	2C	15,000	3,776	0.252	A	468	2C	15,000	4,244	0.283	A	0.031	No
Stratford Ct													
15th St to 13th St	2SC	2,200	2,156	0.980	Less than C	424	2SC	2,200	2,580	1.173	Greater than C	0.193	Yes

Note: ¹ Lanes/Class and Capacity change only for With Project conditions, Baseline Conditions do not change

Abbreviations: 1C: 1 lane Collector with a continuous left-turn lane. 2C: 2 lane Collector. 2C-S: 2 lane collector with stop signs. 2C CL: 2 lane Collector with a continuous left-turn lane. 2C CIF: 2 lane Collector with commercial and industrial fronting property. 2SC: 2 lane Sub-Collector with single-family fronting property. 4C: 4 lane Collector. 4MA: 4 lane Major Arterial. 5MA: 5 lane Major Arterial.

Table 4-6A
Existing Plus Project AM Peak Hour Intersection Conditions –Four-Lanes with Signals

Intersection	Existing Conditions		Existing Conditions with Project		Δ Delay	Potentially Significant?
	Delay	LOS	Delay	LOS		
AM Peak Hour						
1. Via De La Valle / Camino Del Mar	14.7	B	14.9	B	0.2	No
2. Via De La Valle / Jimmy Durante Blvd	27.2	C	28.2	C	1.0	No
3. Via De La Valle / I-5 SB Ramps	4.3	A	4.5	A	0.2	No
4. Via De La Valle / I-5 NB Ramps	9.0	A	9.0	A	0.0	No
5. Via De La Valle / San Andres Dr	19.1	B	19.3	B	0.2	No
6. Coast Blvd / Camino Del Mar	19.7	C	21.6	C	1.9	No
7. 15th St / Stratford Ct	9.3	A	9.9	A	0.6	No
8. 12th St / Stratford Ct	8.6	A	8.7	A	0.1	No
9. 15th St / Camino Del Mar ¹	13.4	B	23.0	C	9.6	No
10. 13th St / Camino Del Mar ¹	12.9	B	11.8	B	-1.1	No
11. 12th St / Camino Del Mar ¹	12.2	B	10.8	B	-1.4	No
12. 11th St / Camino Del Mar ¹	13.1	B	11.6	B	-1.5	No
13. 9th St / Camino Del Mar ¹	7.3	A	8.7	A	1.4	No
14. 4th St / Camino Del Mar	22.4	C	32.0	C	9.6	No
15. Camino Del Mar / Carmel Valley Rd	30.6	C	31.6	C	1.0	No
16. Del Mar Heights Rd / Crest Way	5.6	A	5.7	A	0.1	No
17. Del Mar Heights Rd / I-5 SB Ramps	7.7	A	8.0	A	0.3	No
18. Del Mar Heights Rd / I-5 NB Ramps	21.6	C	22.4	C	0.8	No
19. Del Mar Heights Rd / High Bluff Dr	22.2	C	22.7	C	0.5	No
20. Del Mar Heights Rd / El Camino Real	32.4	C	32.8	C	0.4	No
21. 15th St / Ocean Ave	7.7	A	8.0	A	0.3	No

Footnote: ¹Geometry change only for With Project conditions. Baseline Conditions are the same as Existing Conditions and do not change.

Note: LOS for All Way Stop Control intersections is based on the average control delay. Therefore, the resulting LOS might not be representative of the delay experienced on the critical approach.

Table 4-6B
Existing Plus Project PM Peak Hour Intersection Conditions –Four-Lanes with Signals

Intersection	Existing Conditions		Existing Conditions with Project		Δ Delay	Potentially Significant?
	Delay	LOS	Delay	LOS		
PM Peak Hour						
1. Via De La Valle / Camino Del Mar	18.3	B	18.3	B	0.0	No
2. Via De La Valle / Jimmy Durante Blvd	21.6	C	22.5	C	0.9	No
3. Via De La Valle / I-5 SB Ramps	7.3	A	7.7	A	0.4	No
4. Via De La Valle / I-5 NB Ramps	9.1	A	9.2	A	0.1	No
5. Via De La Valle / San Andres Dr	23.9	C	24.1	C	0.2	No
6. Coast Blvd / Camino Del Mar	14.0	B	15.1	C	1.1	No
7. 15th St / Stratford Ct	10.3	B	11.3	B	1.0	No
8. 12th St / Stratford Ct	8.7	A	8.8	A	0.1	No
9. 15th St / Camino Del Mar ¹	15.8	B	18.0	B	2.2	No
10. 13th St / Camino Del Mar ¹	16.9	C	14.0	B	-2.9	No
11. 12th St / Camino Del Mar ¹	12.6	B	11.8	B	-0.8	No
12. 11th St / Camino Del Mar ¹	16.9	C	15.2	B	-1.7	No
13. 9th St / Camino Del Mar ¹	7.1	A	8.8	A	1.7	No
14. 4th St / Camino Del Mar	24.5	C	30.0	C	5.5	No
15. Camino Del Mar / Carmel Valley Rd	20.1	C	21.4	C	1.3	No
16. Del Mar Heights Rd / Crest Way	6.8	A	7.6	A	0.8	No
17. Del Mar Heights Rd / I-5 SB Ramps	9.6	A	10.4	B	0.8	No
18. Del Mar Heights Rd / I-5 NB Ramps	18.8	B	20.3	C	1.5	No
19. Del Mar Heights Rd / High Bluff Dr	25.3	C	25.7	C	0.4	No
20. Del Mar Heights Rd / El Camino Real	27.0	C	27.1	C	0.1	No
21. 15th St / Ocean Ave	8.3	A	8.8	A	0.5	No

Footnote: ¹Geometry change only for With Project conditions. Baseline Conditions are the same as Existing Conditions and do not change.

Note: LOS for All Way Stop Control intersections is based on the average control delay. Therefore, the resulting LOS might not be representative of the delay experienced on the critical approach.

TWO-LANES WITH ROUNDABOUTS ALTERNATIVE

OPERATIONAL ANALYSIS:

As stated in Chapter 1 of this study, under the Two Lane with Roundabouts circulation alternative, Camino del Mar roadway will be reduced to two vehicular travelling lanes with a total capacity of 25,000 ADT. Roundabouts, unlike All-Way Stop Control intersections, do not require all vehicles approaching the intersection to completely stop and wait for its turn to continue through the intersection. As a result both delay and queuing are greatly reduced at the intersection. In addition, roundabouts can operate more efficiently than other intersection controls as drivers are able to enter the intersection from different approaches at the same time without having to wait for their turn at a stop sign, or a for signal to change to green. The combination of these factors enables the roadways bounded by roundabout intersections, greater operational capacity as vehicles are able to circulate through the intersections without coming to a complete stop.

Roadway Segment Conditions

The existing plus project roadway segment analysis for the “Two-Lane Collector With Roundabouts” alternative is summarized in Table 4-7A and 4-7B. As shown in Table 4-7A and 4-7B, all roadway segments in the study area are calculated to operate at an acceptable LOS D or better except for the following

- Highway 101 – North of Lomas Santa Fe Drive, LOS E
- Camino del Mar – North of Jimmy Durante Boulevard (NB and SB), LOS E
- Camino del Mar – 15th Street to 13th Street (NB and SB), LOS E
- Camino del Mar – 13th Street to 12th Street (NB and SB), LOS E
- Camino del Mar – 12th Street to 11th Street (NB and SB), LOS E
- Camino del Mar – 11th Street to 9th Street (NB), LOS F
- Camino del Mar – 11th Street to 9th Street (SB), LOS E
- Camino del Mar – 9th Street Del Mar Heights Road (NB), LOS E
- Camino del Mar – Del Mar Heights Road to Carmel Valley Road (SB), LOS F
- Camino del Mar – South of Carmel Valley Road (NB and SB), LOS E
- Via de la Valle – Del Mar Downs Road to Jimmy Durante Boulevard, LOS F
- Del Mar Heights Road – I-5 NB Ramps to High Bluff Drive, LOS E
- Stratford Court – 15th Street to 13th Street, greater than C

With the addition of the project traffic, the following segments are calculated to exceed the allowable increased delay resulting into potential significant impacts.

- Camino del Mar – North of Jimmy Durante Boulevard (NB and SB), LOS E
- Camino del Mar – 9th Street to Del Mar Heights Road (NB), LOS E
- Camino del Mar – Del Mar Heights Road to Carmel Valley Road (SB), LOS F
- Camino del Mar – South of Carmel Valley Road (NB and SB), LOS E
- Stratford Court – 15th Street to 13th Street, greater than C

Intersection Conditions

The existing plus project intersection analysis for the “Two-Lane Collector With Roundabouts” alternative is summarized in Table 4-8A and 4-8B. As shown in Table 4-8A and 4-8B, all intersections in the study area are calculated to operate at an acceptable LOS D or better.

Freeway Mainline and Ramp Meter Conditions

The existing with project freeway mainline analysis and ramp meter conditions for the “Two-Lane Collector With Roundabouts” is the same as the “No Circulation Changes” alternative and is summarized in Tables 4-3 and 4-4 respectively.

Appendix G includes existing with project peak hour intersection analysis worksheets for the two lane collector with roundabout alternative.

**Table 4-7A
Existing Plus Project Daily Roadway Segment Conditions - Two-Lanes with Roundabouts**

Roadway Segment	Existing Conditions					Project Traffic	Existing Conditions With Project					Comparison	
	Lanes/Class	LOS E Capacity	ADT	V/C	LOS		Lanes/Class	LOS E Capacity	ADT	V/C	LOS	Δ V/C	Potentially Significant?
Highway 101													
North of Lomas Santa Fe Dr	4C	30,000	28,378	0.946	E	271	4C	30,000	28,649	0.955	E	0.009	No
North of Via De La Valle	4C	30,000	21,870	0.729	D	406	4C	30,000	22,276	0.743	D	0.014	No
Camino Del Mar													
North of Jimmy Durante Blvd (NB)	1C	7,500	6,003	0.800	D	271	1C	7,500	6,274	0.837	E	0.036	Yes
North of Jimmy Durante Blvd (SB)	1C	7,500	6,298	0.840	E	271	1C	7,500	6,569	0.876	E	0.036	Yes
Jimmy Durante Blvd to 15th St (NB)	2C	15,000	10,750	0.717	D	1,498	2C	15,000	12,248	0.817	D	0.100	No
Jimmy Durante Blvd to 15th St (SB)	2C	15,000	10,750	0.717	D	1,498	2C	15,000	12,248	0.817	D	0.100	No
15th St to 13th St (NB)	2C-S	7,750	10,367	1.338	F	1,560	1R	12,500	11,927	0.954	E	-0.384	No
15th St to 13th St (SB)	2C-S	7,750	8,389	1.082	F	1,560	1R	12,500	9,949	0.796	E	-0.287	No
13th St to 12th St (NB)	2C-S	7,750	10,367	1.338	F	1,985	1R	12,500	12,352	0.988	E	-0.350	No
13th St to 12th St (SB)	2C-S	7,750	8,389	1.082	F	1,985	1R	12,500	10,374	0.830	E	-0.253	No
12th St to 11th St (NB)	2C-S	7,750	10,367	1.338	F	2,074	1R	12,500	12,441	0.995	E	-0.342	No
12th St to 11th St (SB)	2C-S	7,750	8,389	1.082	F	2,074	1R	12,500	10,463	0.837	E	-0.245	No
11th St to 9th St (NB)	2C-S	7,750	10,367	1.338	F	2,462	1R	12,500	12,829	1.026	F	-0.311	No
11th St to 9th St (SB)	2C-S	7,750	8,389	1.082	F	2,462	1R	12,500	10,851	0.868	E	-0.214	No
9th St to Del Mar Heights Rd (NB)	2C	15,000	10,367	0.691	D	2,619	2C	15,000	12,986	0.866	E	0.175	Yes
9th St to Del Mar Heights Rd (SB)	2C	15,000	8,389	0.559	C	2,619	2C	15,000	11,008	0.734	D	0.175	No
Del Mar Heights Rd to Carmel Valley Rd (NB)	2C	15,000	6,349	0.423	B	421	2C	15,000	6,770	0.451	B	0.028	No
Del Mar Heights Rd to Carmel Valley Rd (SB)	1C	7,500	7,285	0.971	E	421	1C	7,500	7,706	1.027	F	0.056	Yes
South of Carmel Valley Rd (NB)	1C	7,500	6,349	0.847	E	203	1C	7,500	6,552	0.874	E	0.027	Yes
South of Carmel Valley Rd (SB)	1C	7,500	7,285	0.971	E	203	1C	7,500	7,488	0.998	E	0.027	Yes
Lomas Santa Fe Dr													
Solana Hills Dr to I-5 SB Ramps	4C	30,000	23,843	0.795	D	68	4C	30,000	23,911	0.797	D	0.002	No
Via De La Valle													
Del Mar Downs Rd to Jimmy Durante Blvd	2C CL	15,000	19,500	1.300	F	0	2C CL	15,000	19,500	1.300	F	0.000	No
Jimmy Durante Blvd to I-5 SB Ramps	5MA	50,000	36,324	0.726	D	1,404	5MA	50,000	37,728	0.755	D	0.028	No
East of I-5 NB Ramps	5MA	50,000	32,699	0.654	D	656	5MA	50,000	33,355	0.667	D	0.013	No
Jimmy Durante Blvd													
Via De La Valle to San Diegito Dr	4C	30,000	9,873	0.329	A	1,964	4C	30,000	11,837	0.395	B	0.065	No
San Dieguito Dr to Camino Del Mar	2C CL	15,000	6,713	0.448	B	2,057	2C CL	15,000	8,770	0.585	C	0.137	No

Note: ¹ Lanes/Class and Capacity change only for With Project conditions, Baseline Conditions do not change

Abbreviations: 1C: 1 lane Collector with a continuous left-turn lane. 2C: 2 lane Collector. 2C-S: 2 lane collector with stop signs. 2C CL: 2 lane Collector with a continuous left-turn lane. 2C CIF: 2 lane Collector with commercial and industrial fronting property. 2SC: 2 lane Sub-Collector with single-family fronting property. 4C: 4 lane Collector. 4MA: 4 lane Major Arterial. 5MA: 5 lane Major Arterial.

**Table 4-7B
Existing Plus Project Daily Roadway Segment Conditions - Two-Lanes with Roundabouts**

Roadway Segment	Existing Conditions					Project Traffic	Existing Conditions With Project					Comparison	
	Lanes/Class	LOS E Capacity	ADT	V/C	LOS		Lanes/Class	LOS E Capacity	ADT	V/C	LOS	Δ V/C	Potentially Significant?
Del Mar Heights Rd													
I-5 NB Ramps to High Bluff Drive	5MA	50,000	47,068	0.941	E	842	5MA	50,000	47,910	0.958	E	0.017	No
I-5 SB Ramps to Mango Drive	5MA	50,000	33,727	0.675	D	3,089	5MA	50,000	36,816	0.736	D	0.062	No
Camino Del Mar to Crest Way	4C	30,000	17,003	0.567	C	3,229	4C	30,000	20,232	0.674	D	0.108	No
Carmel Valley Rd													
East of S. Camino Del Mar	2C CL	15,000	10,775	0.718	D	203	2C CL	15,000	10,978	0.732	D	0.014	No
15th St													
Coast Blvd to Camino Del Mar	2C CIF	8,000	5,112	0.639	D	1,216	2C CIF	8,000	6,328	0.791	D	0.152	No
Camino Del Mar to Luneta Dr	2C CIF	8,000	2,955	0.369	B	460	2C CIF	8,000	3,415	0.427	B	0.058	No
Crest Rd													
North of Del Mar Heights Rd	2SC	2,200	1,638	0.745	Less than C	46	2SC	2,200	1,684	0.765	Less than C	0.021	No
Coast Blvd													
North of 15th St	2C	15,000	3,776	0.252	A	468	2C	15,000	4,244	0.283	A	0.031	No
Stratford Ct													
15th St to 13th St	2SC	2,200	2,156	0.980	Less than C	424	2SC	2,200	2,580	1.173	Greater than C	0.193	Yes

Note: ¹ Lanes/Class and Capacity change only for With Project conditions, Baseline Conditions do not change

Abbreviations: 1C: 1 lane Collector with a continuous left-turn lane. 2C: 2 lane Collector. 2C-S: 2 lane collector with stop signs. 2C CL: 2 lane Collector with a continuous left-turn lane. 2C CIF: 2 lane Collector with commercial and industrial fronting property. 2SC: 2 lane Sub-Collector with single-family fronting property. 4C: 4 lane Collector. 4MA: 4 lane Major Arterial. 5MA: 5 lane Major Arterial.

Table 4-8A
Existing Plus Project AM Peak Hour Intersection Conditions - Two-Lanes with Roundabouts

Intersection	Existing Conditions		Existing Conditions with Project		Δ Delay	Potentially Significant?
	Delay	LOS	Delay	LOS		
AM Peak Hour						
1. Via De La Valle / Camino Del Mar	14.7	B	14.9	B	0.2	No
2. Via De La Valle / Jimmy Durante Blvd	27.2	C	28.2	C	1.0	No
3. Via De La Valle / I-5 SB Ramps	4.3	A	4.5	A	0.2	No
4. Via De La Valle / I-5 NB Ramps	9.0	A	9.0	A	0.0	No
5. Via De La Valle / San Andres Dr	19.1	B	19.3	B	0.2	No
6. Coast Blvd / Camino Del Mar	19.7	C	21.6	C	1.9	No
7. 15th St / Stratford Ct	9.3	A	9.9	A	0.6	No
8. 12th St / Stratford Ct	8.6	A	8.7	A	0.1	No
9. 15th St / Camino Del Mar ¹	13.4	B	14.1	B	0.7	No
10. 13th St / Camino Del Mar ¹	12.9	B	15.6	C	2.7	No
11. 12th St / Camino Del Mar ¹	12.2	B	18.1	C	5.9	No
12. 11th St / Camino Del Mar ¹	13.1	B	15.4	C	2.3	No
13. 9th St / Camino Del Mar ¹	7.3	A	13.7	B	6.4	No
14. 4th St / Camino Del Mar	22.4	C	32.0	C	9.6	No
15. Camino Del Mar / Carmel Valley Rd	30.6	C	31.6	C	1.0	No
16. Del Mar Heights Rd / Crest Way	5.6	A	5.7	A	0.1	No
17. Del Mar Heights Rd / I-5 SB Ramps	7.7	A	8.0	A	0.3	No
18. Del Mar Heights Rd / I-5 NB Ramps	21.6	C	22.4	C	0.8	No
19. Del Mar Heights Rd / High Bluff Dr	22.2	C	22.7	C	0.5	No
20. Del Mar Heights Rd / El Camino Real	32.4	C	32.8	C	0.4	No
21. 15th St / Ocean Ave	7.7	A	8.0	A	0.3	No

Footnote: ¹Geometry change only for With Project conditions. Baseline Conditions are the same as Existing Conditions and do not change.

Note: LOS for All Way Stop Control intersections is based on the average control delay. Therefore, the resulting LOS might not be representative of the delay experienced on the critical approach.

Table 4-8B
Existing Plus Project PM Peak Hour Intersection Conditions - Two-Lanes with Roundabouts

Intersection	Existing Conditions		Existing Conditions with Project		Δ Delay	Potentially Significant?
	Delay	LOS	Delay	LOS		
PM Peak Hour						
1. Via De La Valle / Camino Del Mar	18.3	B	18.3	B	0.0	No
2. Via De La Valle / Jimmy Durante Blvd	21.6	C	22.5	C	0.9	No
3. Via De La Valle / I-5 SB Ramps	7.3	A	7.7	A	0.4	No
4. Via De La Valle / I-5 NB Ramps	9.1	A	9.2	A	0.1	No
5. Via De La Valle / San Andres Dr	23.9	C	24.1	C	0.2	No
6. Coast Blvd / Camino Del Mar	14.0	B	15.1	C	1.1	No
7. 15th St / Stratford Ct	10.3	B	11.3	B	1.0	No
8. 12th St / Stratford Ct	8.7	A	8.8	A	0.1	No
9. 15th St / Camino Del Mar ¹	15.8	B	23.3	C	7.5	No
10. 13th St / Camino Del Mar ¹	16.9	C	20.6	C	3.7	No
11. 12th St / Camino Del Mar ¹	12.6	B	20.0	B	7.4	No
12. 11th St / Camino Del Mar ¹	16.9	C	29.3	D	12.4	No
13. 9th St / Camino Del Mar ¹	7.1	A	22.7	C	15.6	No
14. 4th St / Camino Del Mar	24.5	C	30.0	C	5.5	No
15. Camino Del Mar / Carmel Valley Rd	20.1	C	21.4	C	1.3	No
16. Del Mar Heights Rd / Crest Way	6.8	A	7.6	A	0.8	No
17. Del Mar Heights Rd / I-5 SB Ramps	9.6	A	10.4	B	0.8	No
18. Del Mar Heights Rd / I-5 NB Ramps	18.8	B	20.3	C	1.5	No
19. Del Mar Heights Rd / High Bluff Dr	25.3	C	25.7	C	0.4	No
20. Del Mar Heights Rd / El Camino Real	27.0	C	27.1	C	0.1	No
21. 15th St / Ocean Ave	8.3	A	8.8	A	0.5	No

Footnote: ¹Geometry change only for With Project conditions. Baseline Conditions are the same as Existing Conditions and do not change.

Note: LOS for All Way Stop Control intersections is based on the average control delay. Therefore, the resulting LOS might not be representative of the delay experienced on the critical approach.

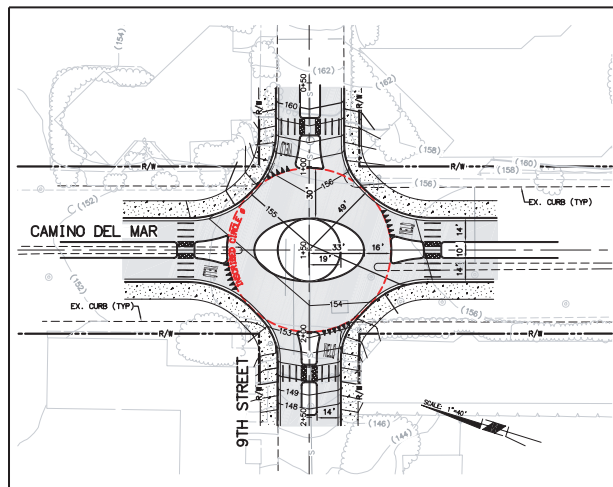
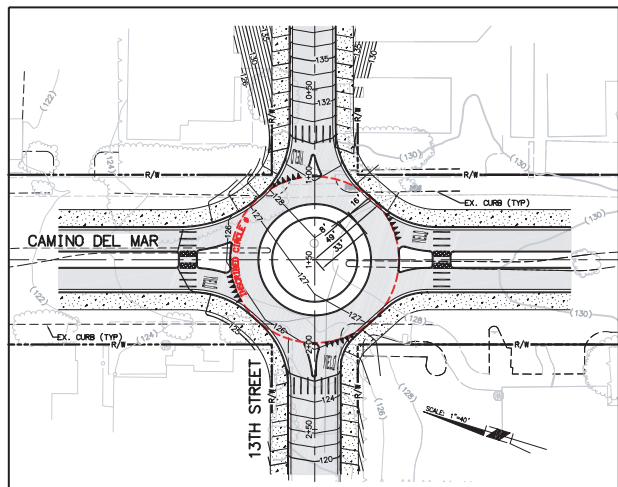
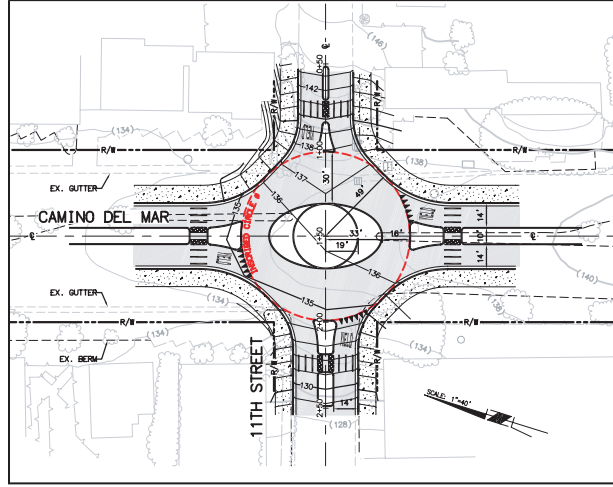
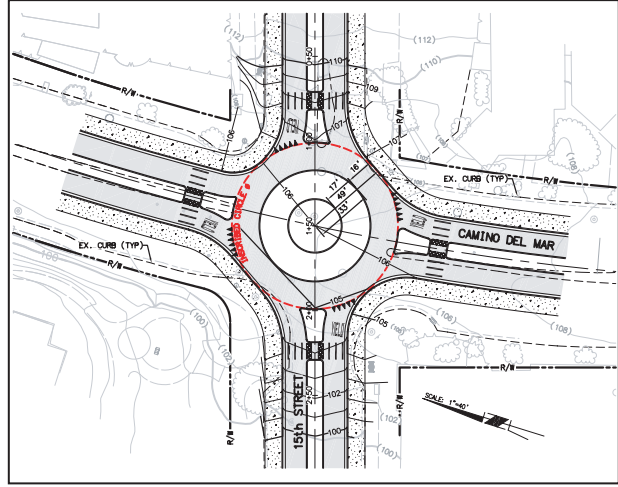
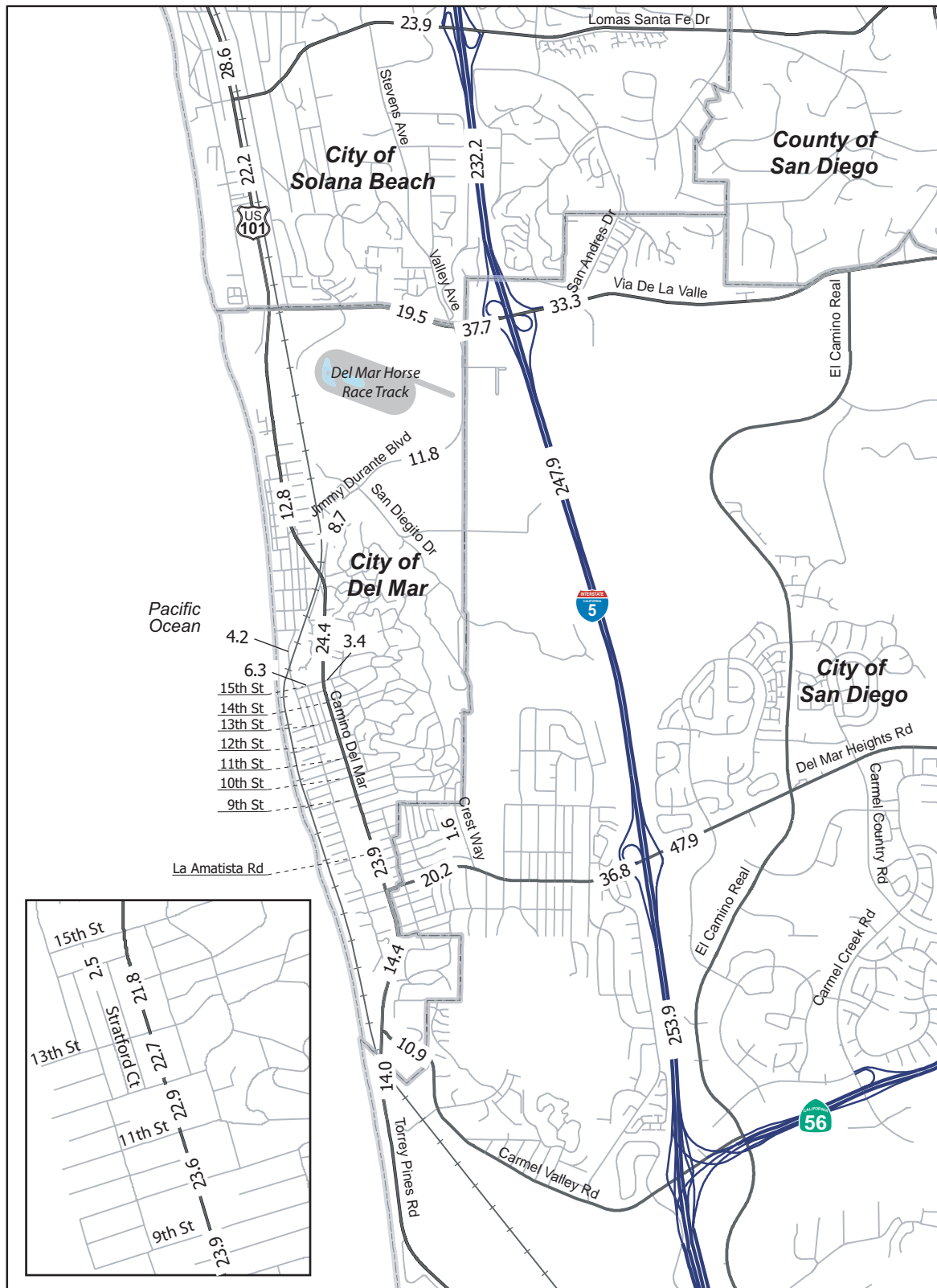


Figure 4.1 Two-Lane Collector with Roundabouts Alternative



LEGEND	
—15—	Average Daily Traffic (1000s)

Figure 4-2
Existing Daily Roadway Segment Volumes Plus Project

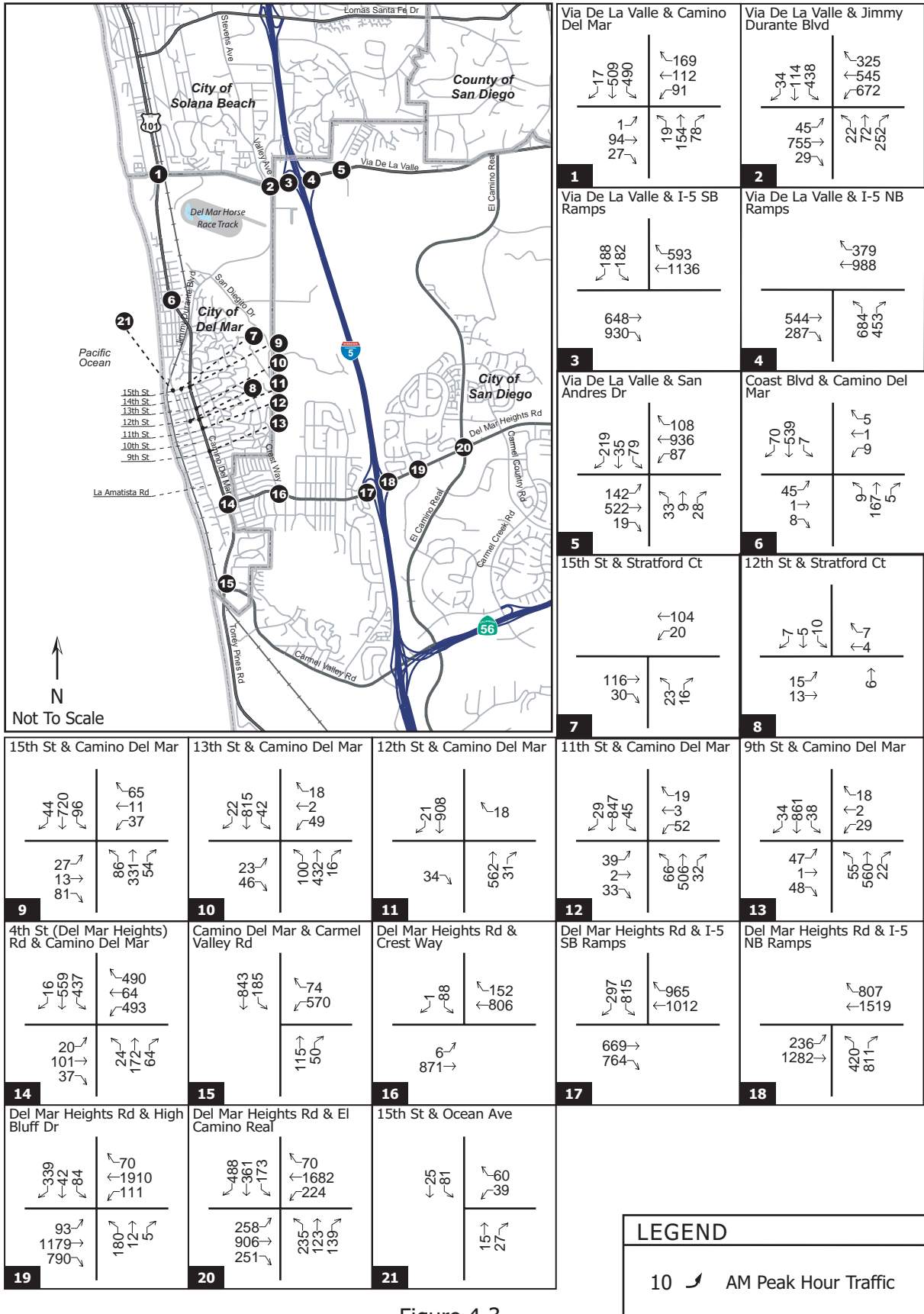


Figure 4-3
Existing AM Peak Hour Intersection Volumes Plus Project

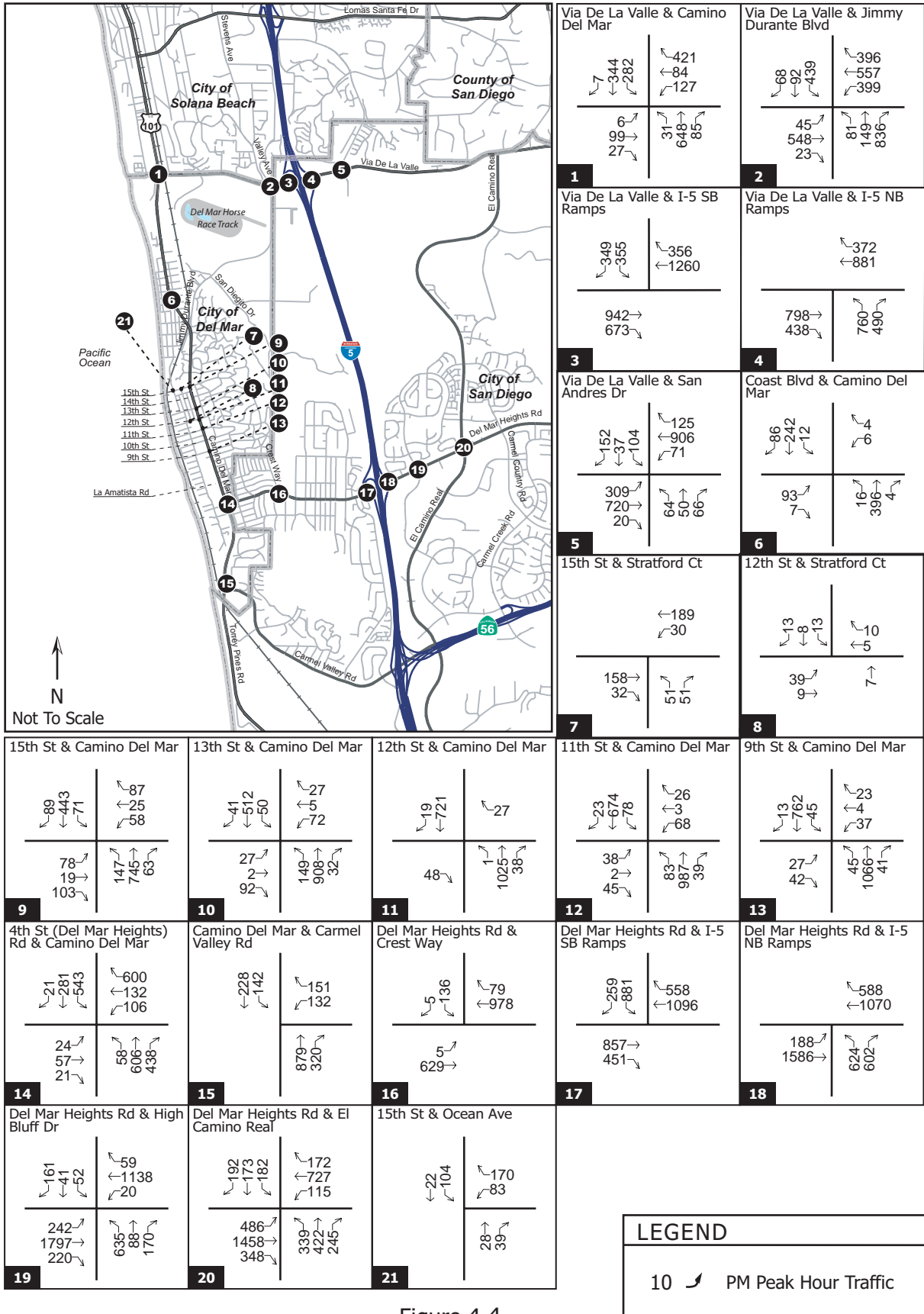


Figure 4-4
Existing PM Peak Hour Intersection Volumes Plus Project

CHAPTER 5 LONG TERM CONDITIONS (2035)

YEAR 2035 ROADWAY NETWORK

The 2035 baseline analysis assumes no roadway network changes. However, under two of the three circulation alternatives analyzed in this study, Camino del Mar is expected to change according to the proposed circulation alternatives, all of which are explained in detail in Chapter 1 of this study.

As part of the North Coast Corridor Program, TransNet proposes to add two High Occupancy Vehicle (HOV) Express lanes in each direction between La Jolla Village Drive and Harbor Drive in Oceanside. In addition, according to the SANDAG 2050 Regional Transportation Plan, State Route 56 (SR-56) connectors to I-5 will be built by year 2030..

YEAR 2035 TRAFFIC VOLUMES

The implemented traffic growth to the roadway network within the study area is a function of expected land development, economic activity, and changes in demographics. Several methods can be used to estimate this growth. For the purposes of this analysis, Year 2008 and Year 2035 based on the SANDAG's computerized travel forecast model (Series 12 Select Zone Analysis) were obtained. Using the existing counts volumes conducted in Year 2011 and the growth factor calculated by the interpolation of the two models, future base volumes were developed. Additionally, traffic studies of cumulative projects within the vicinity of the project were reviewed and updated in the model to better reflect the effects of these projects on the study area. Table 5-1 summarizes the cumulative projects included in the traffic model and used in the long-term impact analysis.

It should be noted that in the Year 2035 model there is a decrease in the average daily traffic assigned to Del Mar Heights Road east of Interstate 5 (I-5). According to the SANDAG 2050 Regional Transportation Plan, State Route 56 (SR-56) connectors to I-5 will be built by year 2030. These connectors are included in the 2035 model resulting in traffic redistribution throughout the network.

Appendix H contains the growth calculation worksheets and an excerpt from the SANDAG 2050 Regional Transportation Plan.

**Table 5-1
Cumulative Projects**

Name	Description	Estimated ADT
The Bridges	Residential: 35 Estate homes	420
MUP 91 019	Residential: 10 single family	120
TPM 20477	Residential: 3 single family	30
TPM 20612	Residential: 4 single family	40
TM 5148	Residential: 12 single family	144
TPM 20693	Residential: 2 single family	20
TPM 20893	Residential: 4 single family	40
TM 5125	Residential: 6 single family	60
TPM 20479	Residential: 2 single family	24
MUP 72-108	Fellowship Center: 11,950 Classroom Bldg: 3,000 Administration Bldg: 500	246
TPM 20326	Residential: 2 single family	20
TPM 20536	Residential: 2 single family	20
Sillstrop	Residential: 3 apartment Residential: 22 single family	244
Helen Woodward Animal Center	Expansion: 41,600	594
Palma de la Reina	Residential: 54 apartments Commercial: 19,500 Retail: 9,500	1,202
Morgan Run Country Club	Health Spa: 9,432	283
TPM 20593	Residential: 2 single family	20
TPM 20354	Residential: 1 single family	10
Villages at Lomas Santa Fe	Retail: 45,500	1,547
Via De La Valle Townhomes	22 townhome du's	176
Rancho Del Mar	224 unit condominium 30,000 wellness center	1,309
Del Mar Country Estates	Residential: 14 estate homes	24
Del Mar Master Plan	East Parking Lot Improvement 23 acres	130
Del Mar Master Plan	Health Club/Sports Training Facility 60,000	2,400
Del Mar Master Plan	New Flat Floor Exhibit Building:26,220 Conference Hotel 330 Rooms Roof Top Sports Field 278,716	3,474
Flower Hill	35,000 market 25,000 office 8,700 retail	4,430
Riverview Project	Office: 23120	560
One Paseo	Free Standing Retail: 100,000 Market: 30,000 Commercial: 100,000 Retail: 100,650 Corporate Office: 245,000 Professional Office: 291,000	26,961
TM 5182 (Cielo del Norte)	Residential: 186 single family homes	2,232
TM 5201	Residential: 17 single family	170
Solana Gateway	Mixed Use	1,760
Del Mar Country Club Estates	Residential: 2 single family	24
TM 5280	Health Spa: 25,153	750
Rancho Santa Fe Farms Golf Club	Recreation: 18 hole golf course	700
NCTD Mixed Use	Mixed Use	3,585
Stevens Ave Office	Office: 18,905	380
Solana Beach Town Center	Office Alternative: 13,3047	3,310
444 South Cedros Ave	Mixed Use	1,280
Solana Beach Mixed Use	Mixed Use	630
Sheppard Medical	Medical Office: 4,394	220
Garden Del Mar	Mixed Use	717

LONG TERM ANALYSIS

The developed future based volumes were used to analyze the long term baseline conditions. The resultant long term baseline daily, weekday morning and evening peak hour intersection volumes are shown in Figures 5-1 through 5-3.

Roadway Segment Conditions

As shown in Table 5-2, the following segments are calculated to operate at a LOS D or worse in the long term analysis, when future No project ADT volumes are compared with the existing roadway configurations.

- Highway 101 – North of Lomas Santa Fe Drive, LOS E
- Camino del Mar – North of Jimmy Durante Boulevard (SB), LOS E
- Camino del Mar – 15th Street to 13th Street (NB and SB), LOS F
- Camino del Mar – 13th Street to 12th Street (NB and SB), LOS F
- Camino del Mar – 12th Street to 11th Street (NB and SB), LOS F
- Camino del Mar – 11th Street to 9th Street (NB and SB), LOS F
- Camino del Mar – Del Mar Heights Road to Carmel Valley Road (SB), LOS F
- Camino del Mar – South of Carmel Valley Road (NB), LOS E
- Camino del Mar – South of Carmel Valley Road (SB), LOS F
- Lomas Santa Fe Drive – Solana Hills Drive to I-5 Southbound Ramps, LOS E
- Via de la Valle – Del Mar Downs Road to Jimmy Durante Boulevard, LOS F
- Via de la Valle – Jimmy Durante Road to Interstate 5 SB Ramps, LOS E
- Via de la Valle – East of Interstate 5 NB Ramps, LOS E
- Del Mar Heights Road – I-5 NB Ramps to High Bluff Drive, LOS E

Intersection Conditions

The long term baseline intersection analysis is summarized in Table 5-3. As shown in Table 5-3, all intersections in the study area are calculated to operate at an acceptable LOS D or better.

It should be noted that this circulation alternative assumes the same roadway network conditions as existing conditions. According to the Highway Capacity Manual, each stop-controlled intersection in an isolated state under the long term baseline conditions operates at an acceptable level of services. However, the close spacing between intersections, development of queues and slow traffic speeds result in a stop and go condition along the Camino del Mar corridor where all segments between 9th Street and 15th Street operate at a LOS F, as described above.

Freeway Mainline Conditions

The long term baseline freeway mainline analysis is summarized in Table 5-4. As shown in Table 5-4, following freeway segments do not operate at LOS D or better.

- I-5 – Lomas Santa Fe to Via de la Valle (NB) (PM), LOS F(0)
- I-5 – Lomas Santa Fe to Via de la Valle (SB) (AM), LOS F(0)
- I-5 – Lomas Santa Fe to Via de la Valle (SB) (PM), LOS E
- I-5 – Via de la Valle to Del Mar Heights Road (NB) (AM), LOS E
- I-5 – Via de la Valle to Del Mar Heights Road (NB) (PM), LOS F(0)
- I-5 – Via de la Valle to Del Mar Heights Road (SB) (AM), LOS F(0)
- I-5 – Via de la Valle to Del Mar Heights Road (SB) (PM), LOS E
- I-5 – Del Mar Heights Road to Carmel Valley Road (SB) (AM), LOS F(0)

Freeway Ramp Meter Conditions

Table 5–5 presents the results using the maximum delay method. As shown in Table 5–5, under long term conditions, there are delays calculated at the following ramps:

- Via de la Valle EB to I - 5 SB (AM and PM peak hours)
- Del Mar Heights Road WB to I-5 SB (AM peak hour)

Appendix I includes long term peak hour intersection analysis.

**Table 5-2
Long Term Daily Roadway Segment Conditions**

Roadway Segment	Lanes/ Class	LOS E Capacity	Long Term Conditions		
			ADT	V/C	LOS
Highway 101					
North of Lomas Santa Fe Dr	4C	30,000	29,087	0.970	E
North of Via De La Valle	4C	30,000	22,580	0.753	D
Camino Del Mar					
North of Jimmy Durante Blvd (NB)	1C	7,500	6,087	0.812	D
North of Jimmy Durante Blvd (SB)	1C	7,500	6,390	0.852	E
Jimmy Durante Blvd to 15th St (NB)	2C	15,000	11,071	0.738	D
Jimmy Durante Blvd to 15th St (SB)	2C	15,000	11,232	0.749	D
15th St to 13th St (NB)	2C-S	7,750	10,688	1.379	F
15th St to 13th St (SB)	2C-S	7,750	8,871	1.145	F
13th St to 12th St (NB)	2C-S	7,750	10,688	1.379	F
13th St to 12th St (SB)	2C-S	7,750	8,871	1.145	F
12th St to 11th St (NB)	2C-S	7,750	10,688	1.379	F
12th St to 11th St (SB)	2C-S	7,750	8,871	1.145	F
11th St to 9th St (NB)	2C-S	7,750	10,688	1.379	F
11th St to 9th St (SB)	2C-S	7,750	8,871	1.145	F
9th St to Del Mar Heights Rd (NB)	2C	15,000	10,688	0.713	D
9th St to Del Mar Heights Rd (SB)	2C	15,000	8,871	0.591	C
Del Mar Heights Rd to Carmel Valley Rd (NB)	2C	15,000	6,495	0.433	B
Del Mar Heights Rd to Carmel Valley Rd (SB)	1C	7,500	7,504	1.000	F
South of Carmel Valley Rd (NB)	1C	7,500	6,984	0.931	E
South of Carmel Valley Rd (SB)	1C	7,500	8,014	1.068	F
Lomas Santa Fe Dr					
Solana Hills Dr to I-5 SB Ramps	4C	30,000	29,565	0.986	E
Via De La Valle					
Del Mar Downs Rd to Jimmy Durante Blvd	2C CL	15,000	20,280	1.352	F
Jimmy Durante Blvd to I-5 SB Ramps	5MA	50,000	43,589	0.872	E
East of I-5 NB Ramps	5MA	50,000	41,528	0.831	E
Jimmy Durante Blvd					
Via De La Valle to San Diegito Dr	4C	30,000	13,230	0.441	B
San Diegito Dr to Camino Del Mar	2C CL	15,000	7,513	0.501	C
Del Mar Heights Rd					
I-5 NB Ramps to High Bluff Drive	5MA	50,000	40,949	0.819	E
I-5 SB Ramps to Mango Drive	5MA	50,000	36,425	0.729	D
Camino Del Mar to Crest Way	4C	30,000	18,363	0.612	C
Carmel Valley Rd					
East of S. Camino Del Mar	2C CL	15,000	12,499	0.833	D
15th St					
Coast Blvd to Camino Del Mar	2C CIF	8,000	5,572	0.697	D
Camino Del Mar to Luneta Dr	2C CIF	8,000	2,955	0.369	B
Crest Rd					
North of Del Mar Heights Rd	2SC	2,200	1,638	0.745	Less than C
Coast Blvd					
North of 15th St	2C	15,000	4,078	0.272	A
Stratford Ct					
15th St to 13th St	2SC	2,200	2,156	0.980	Less than C

Abbreviations: 1C: 2 lane Collector with commercial and industrial fronting property. 2C: 2 lane Collector with multi-family residential fronting property. 2C-S: 2 lane collector with stop signs. 2C CL: 2 lane Collector with a continuous left-turn lane. 2C CIF: 2 lane collector with no fronting property. 2SC: 2 lane Sub-Collector with single-family fronting property. 4C: 4 lane Collector. 4MA: 4 lane Major Arterial. 5MA: 5 lane Major Arterial.

**Table 5-3
Long Term Intersection Conditions**

Intersection		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
1	Via De La Valle / Camino Del Mar	15.1	B	19.8	B
2	Via De La Valle / Jimmy Durante Blvd	36.4	D	27.4	C
3	Via De La Valle / I-5 SB Ramps	5.3	A	9.9	A
4	Via De La Valle / I-5 NB Ramps	12.6	B	12.4	B
5	Via De La Valle / San Andres Dr	23.3	C	31.6	C
6	Coast Blvd / Camino Del Mar ¹	20.1	C	14.5	B
7	15th St / Stratford Ct ³	9.4	A	10.5	B
8	12th St / Stratford Ct ³	8.6	A	8.7	A
9	15th St / Camino Del Mar	13.6	B	16.0	B
10	13th St / Camino Del Mar ¹	13.1	B	17.2	C
11	12th St / Camino Del Mar ²	12.2	B	13.0	B
12	11th St / Camino Del Mar ¹	13.3	B	19.0	C
13	9th St / Camino Del Mar	7.3	A	7.1	A
14	4th St / Del Mar Heights Rd / Camino Del Mar	25.5	C	24.2	C
15	Camino Del Mar / Carmel Valley Rd	41.1	D	25.1	C
16	Del Mar Heights Rd / Crest Way	5.6	A	7.5	A
17	Del Mar Heights Rd / I-5 SB Ramps	7.7	A	9.6	A
18	Del Mar Heights Rd / I-5 NB Ramps	21.6	C	18.8	B
19	Del Mar Heights Rd / High Bluff Dr	21.0	C	25.9	C
20	Del Mar Heights Rd / El Camino Real	38.6	D	31.7	C
21	15th St / Ocean Ave ¹	7.8	A	8.4	A

Footnote: All intersections are signalized unless otherwise noted

¹ All - Way Stop Control

² Two - Way Stop Control

³ One - Way Stop Control

Note: LOS for All Way Stop Control intersections is based on the average control delay. Therefore, the resulting LOS might not be representative of the delay experienced on the critical approach.

**Table 5-4
Long Term Freeway Mainline Conditions**

Freeway Segment	Direction	Number of Lanes ¹	Hourly Capacity	ADT ²	Long Term Conditions					
					AM Peak Hour			PM Peak Hour		
					Volume	V/C	LOS	Volume	V/C	LOS
Interstate 5 Freeway										
Lomas Santa Fe to Via de la Valle	NB	4M + 1A + 1HOV	10,400	293,317	8,504	0.818	D	10,544	1.014	F(0)
	SB	4M + 1A + 1HOV	10,400		11,362	1.093	F(0)	10,108	0.972	E
Via de la Valle to Del Mar Heights Road	NB	4M + 1A + 1HOV	10,400	310,999	9,756	0.938	E	10,694	1.028	F(0)
	SB	4M + 1A + 1HOV	10,400		12,160	1.169	F(0)	10,341	0.994	E
Del Mar Heights Road to Carmel Valley Road	NB	5M + 1A + 1HOV	12,400	322,136	10,192	0.822	D	10,003	0.807	D
	SB	5M + 1A + 1HOV	12,400		13,672	1.103	F(0)	10,504	0.847	D

Footnotes:

¹ M: Mainline, A: Auxiliary, HOV: High Occupancy Vehicle Lane.

² 2035 ADT Volumes from 2035 SANDAG Model

Note:

For consistency purposes, the proposed improvements to the I-5 corridor including the second HOV lane were not accounted on this analysis.

**Table 5-5
Long Term Freeway Ramp Meter Conditions**

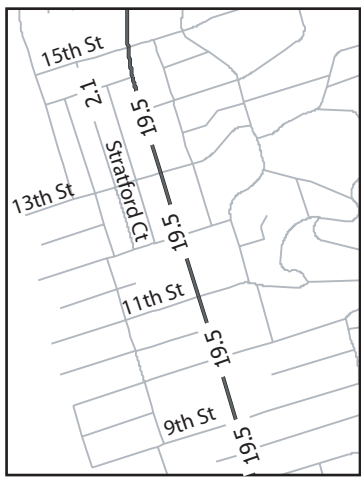
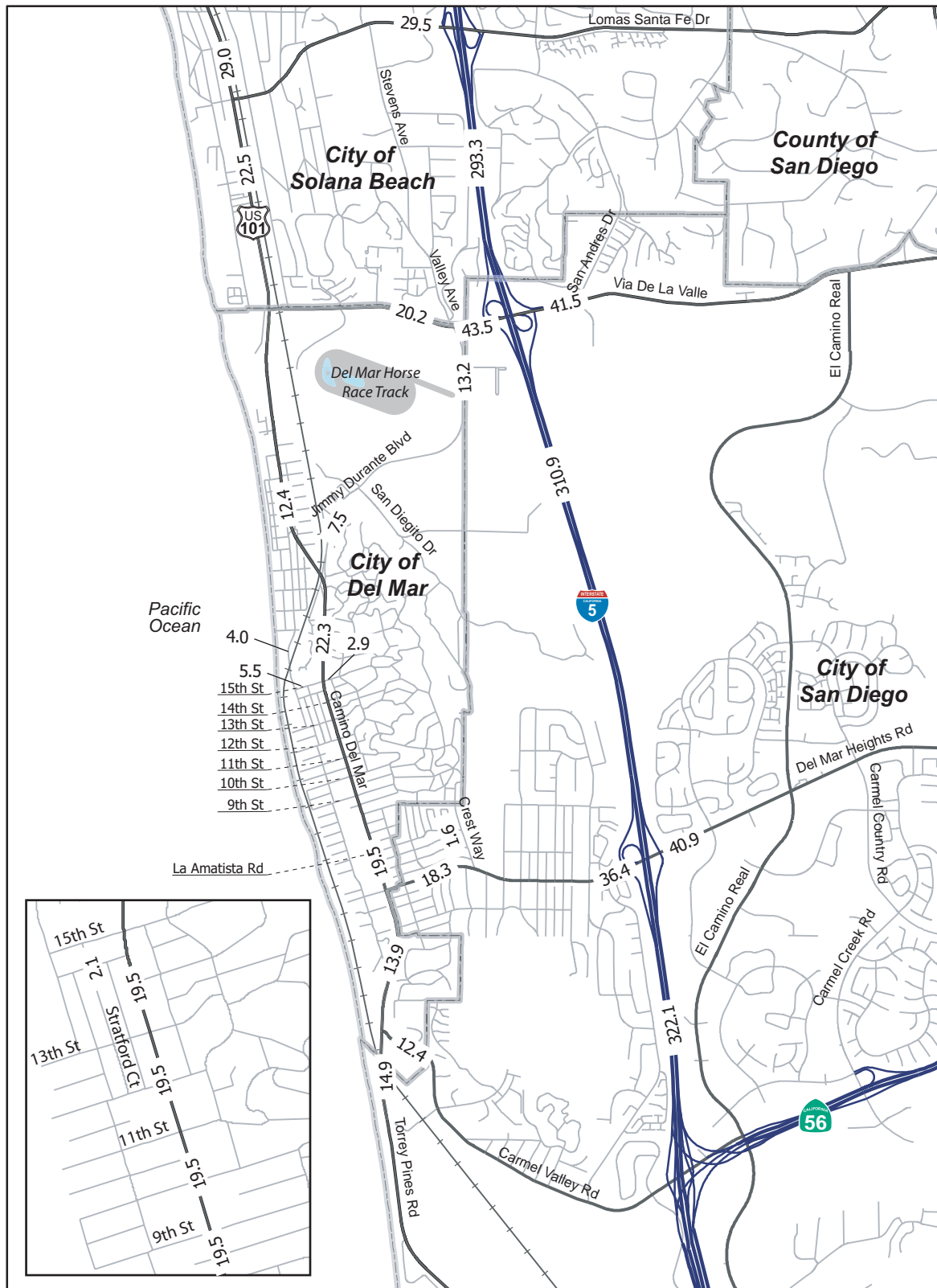
Location	Most Restrictive Meter Rate (veh/hr/lane)	Demand (veh/hr/lane)	Excess Demand	Delay (Min)	Queue (ft)
AM Peak Hour					
Via de la Valle EB to I - 5 NB	372	160	0	0.0	0
Via de la Valle WB to I - 5 NB	473	409	0	0.0	0
Via de la Valle WB to I - 5 NB (HOV)	473	45	0	0.0	0
Via de la Valle EB to I - 5 SB	996	1,004	8	0.5	244
Via de la Valle EB to I - 5 SB (HOV)	996	112	0	0.0	0
Via de la Valle WB to I - 5 SB	424	356	0	0.0	0
Del Mar Heights Road to I - 5 NB	593	522	0	0.0	0
Del Mar Heights Road EB to I - 5 SB	996	628	0	0.0	0
Del Mar Heights Road EB to I - 5 SB (HOV)	996	70	0	0.0	0
Del Mar Heights Road WB to I - 5 SB	352	483	131	22.2	3,785
PM Peak Hour					
Via de la Valle EB to I - 5 NB	372	252	0	0.0	0
Via de la Valle WB to I - 5 NB	473	402	0	0.0	0
Via de la Valle WB to I - 5 NB (HOV)	473	45	0	0.0	0
Via de la Valle EB to I - 5 SB	424	727	303	42.9	8,782
Via de la Valle EB to I - 5 SB (HOV)	424	81	0	0.0	0
Via de la Valle WB to I - 5 SB	352	214	0	0.0	0
Del Mar Heights Road to I - 5 NB	593	388	0	0.0	0
Del Mar Heights Road EB to I - 5 SB	996	337	0	0.0	0
Del Mar Heights Road EB to I - 5 SB (HOV)	996	37	0	0.0	0
Del Mar Heights Road WB to I - 5 SB	368	279	0	0.0	0

Note:

Excess demand = Demand - Meter Rate

Delay = (Excess Demand/Meter Rate)*60 minutes

Queue = Excess Demand*29 feet/vehicle



LEGEND	
—15—	Average Daily Traffic (1000s)

Figure 5-1
Long Term Daily Roadway Segment Volumes

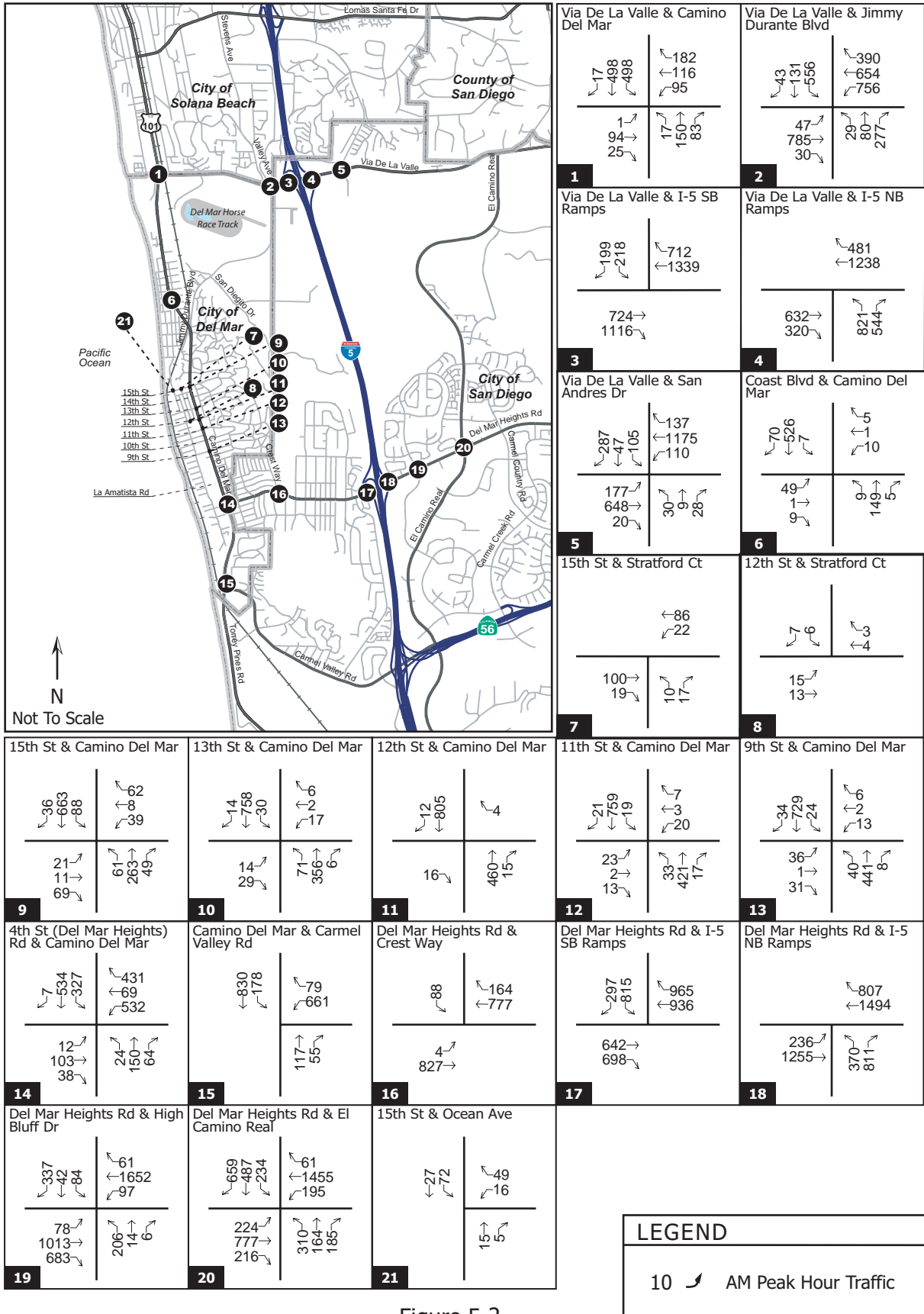


Figure 5-2
Long Term AM Peak Hour Intersection Volumes

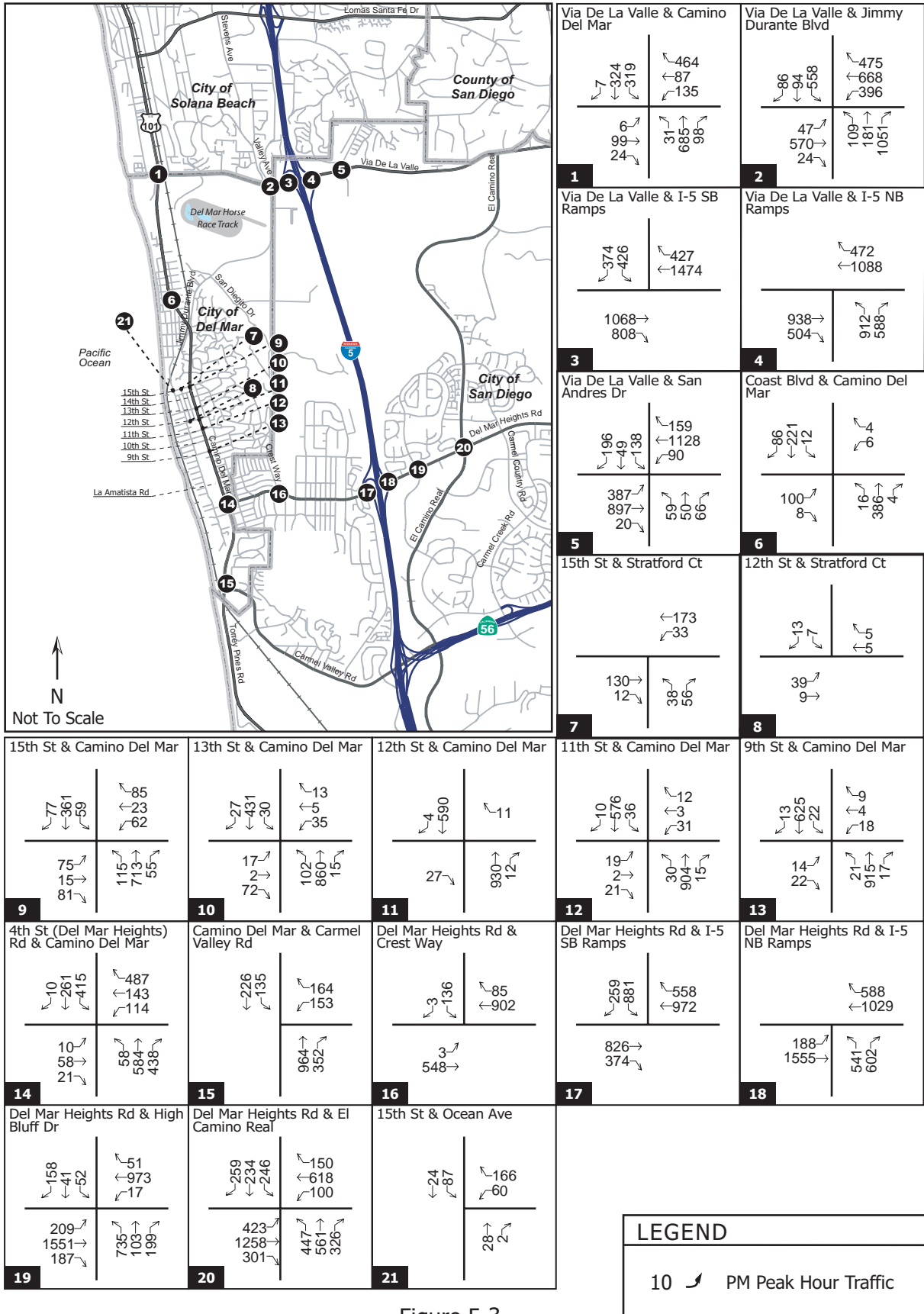


Figure 5-3
Long Term PM Peak Hour Intersection Volumes

CHAPTER 6 LONG TERM PLUS PROJECT CONDITIONS (2035)

LONG TERM PLUS PROJECT ANALYSIS

Long term plus project traffic volumes were developed by adding the calculated project trips to the long term base volumes discussed in Chapter 5. Project related impacts were assessed by comparing the long term baseline condition against the long term baseline with the addition of the project traffic. The effect of the proposed project on the study area was evaluated for all proposed alternatives considered for under the long term conditions and a summary of the results is presented in this chapter.

NO CIRCULATION CHANGES ALTERNATIVE

OPERATIONAL ANALYSIS:

Roadway Segment Conditions

The long term with project segment analysis for the “No Circulation Changes” alternative is summarized in Table 6-1A and 6-1B. As shown in Table 6-1A and 6-1B, the following roadway segments are operating at unacceptable LOS:

- Highway 101 – North of Lomas Santa Fe Drive, LOS E
- Camino del Mar – North of Jimmy Durante Boulevard (NB and SB), LOS E
- Camino del Mar – Jimmy Durante Boulevard to 15th Street (NB and SB), LOS E
- Camino del Mar – 15th Street to 13th Street (NB and SB), LOS F
- Camino del Mar – 13th Street to 12th Street (NB and SB), LOS F
- Camino del Mar – 12th Street to 11th Street (NB and SB), LOS F
- Camino del Mar – 11th Street to 9th Street (NB and SB), LOS F
- Camino del Mar – 9th Street to Del Mar Heights Road (NB), LOS E
- Camino del Mar – Del Mar Heights Road to Carmel Valley Road (SB), LOS F
- Camino del Mar – South of Carmel Valley Road (NB), LOS E
- Camino del Mar – South of Carmel Valley Road (SB), LOS F
- Lomas Santa Fe Drive – Solana Hills Drive to I-5 SB Ramps, LOS E
- Via de la Valle – Del Mar Downs Road to Jimmy Durante Boulevard, LOS F
- Via de la Valle – Jimmy Durante Road to Interstate 5 SB Ramps, LOS E
- Via de la Valle – East of Interstate 5 NB Ramps, LOS E
- Del Mar Heights Road – I-5 NB Ramps to High Bluff Drive, LOS E
- 15th Street – Coast Boulevard to Camino del Mar, LOS E
- Stratford Court – 15th Street to 13th Street, LOS greater than C

With the addition of the project traffic, the following segments are calculated to exceed the allowable increased delay resulting into potential significant impacts.

- Camino del Mar – North of Jimmy Durante Boulevard (NB and SB), LOS E
- Camino del Mar – Jimmy Durante Boulevard to 15th Street (NB and SB), LOS E
- Camino del Mar – 15th Street to 13th Street (NB and SB), LOS F
- Camino del Mar – 13th Street to 12th Street (NB and SB), LOS F
- Camino del Mar – 12th Street to 11th Street (NB and SB), LOS F
- Camino del Mar – 11th Street to 9th Street (NB and SB), LOS F
- Camino del Mar – 9th Street to Del Mar Heights Road (NB), LOS E
- Camino del Mar – Del Mar Heights Road to Carmel Valley Road (SB), LOS F
- Camino del Mar – South of Carmel Valley Road (NB), LOS E
- Camino del Mar – South of Carmel Valley Road (SB), LOS F
- Via de la Valle – Jimmy Durante Road to Interstate 5 SB Ramps, LOS E
- 15th Street – Coast Boulevard to Camino del Mar, LOS E
- Stratford Court – 15th Street to 13th Street, LOS greater than C

Intersection Conditions

The long term with project intersection analysis for the “No Circulation Changes” alternative is summarized in Table 6-2A and 6-2B. As shown in 6-2A and 6-2B, all intersections in the study area are calculated to operate at an acceptable LOS D or better except for the following:

- 11th Street / Camino del Mar (LOS E) during the PM Peak Hour

The project contribution to the delay at these intersections exceeds the allowable delay. Therefore, there are potential significant impacts at these locations.

Freeway Mainline Conditions

The long term with project freeway mainline analysis for the “No Circulation Changes” alternative is summarized in Table 6-3. As shown in Table 6-3, the following freeway segments do not operate at LOS D or better.

- I-5 – Lomas Santa Fe to Via de la Valle(NB) (PM), LOS F(0)
- I-5 – Lomas Santa Fe to Via de la Valle(SB) (AM), LOS F(0)
- I-5 – Lomas Santa Fe to Via de la Valle(SB) (PM), LOS E
- I-5 – Via de la Valle to Del Mar Heights Road (NB) (AM), LOS E
- I-5 – Via de la Valle to Del Mar Heights Road (NB) (PM), LOS F(0)
- I-5 – Via de la Valle to Del Mar Heights Road (SB) (AM), LOS F(0)
- I-5 – Via de la Valle to Del Mar Heights Road (SB) (PM), LOS E
- I-5 – Del Mar Heights Road to Carmel Valley Road (SB) (AM), LOS F(0)

The project does not exceed the allowable delay, so no potential significant impact is calculated.

Freeway Ramp Meter Conditions

The long term with project for the “No Circulation Changes” alternative freeway ramp meter analysis is summarized in Table 6-4. As seen in Table 6-4, the project contribution represents no potential significant impacts.

Appendix J includes long term with project peak hour intersection analysis worksheets for the no circulation changes alternative.

**Table 6-1A
Long Term Plus Project Daily Roadway Segment Conditions – No Circulation Changes**

Roadway Segment	Long Term Conditions					Project Traffic	Long Term Conditions With Project					Comparison	
	Lanes/Class	LOS E Capacity	ADT	V/C	LOS		Lanes/Class	LOS E Capacity	ADT	V/C	LOS	Δ V/C	Potentially Significant?
Highway 101													
North of Lomas Santa Fe Dr	4C	30,000	29,087	0.970	E	271	4C	30,000	29,358	0.979	E	0.009	No
North of Via De La Valle	4C	30,000	22,580	0.753	D	406	4C	30,000	22,986	0.766	D	0.014	No
Camino Del Mar													
North of Jimmy Durante Blvd (NB)	1C	7,500	6,087	0.812	D	271	1C	7,500	6,358	0.848	E	0.036	Yes
North of Jimmy Durante Blvd (SB)	1C	7,500	6,390	0.852	E	271	1C	7,500	6,661	0.888	E	0.036	Yes
Jimmy Durante Blvd to 15th St (NB)	2C	15,000	11,071	0.738	D	1,498	2C	15,000	12,569	0.838	E	0.100	Yes
Jimmy Durante Blvd to 15th St (SB)	2C	15,000	11,232	0.749	D	1,498	2C	15,000	12,730	0.849	E	0.100	Yes
15th St to 13th St (NB)	2C-S	7,750	10,688	1.379	F	1,560	2C-S	7,750	12,248	1.580	F	0.201	Yes
15th St to 13th St (SB)	2C-S	7,750	8,871	1.145	F	1,560	2C-S	7,750	10,431	1.346	F	0.201	Yes
13th St to 12th St (NB)	2C-S	7,750	10,688	1.379	F	1,985	2C-S	7,750	12,673	1.635	F	0.256	Yes
13th St to 12th St (SB)	2C-S	7,750	8,871	1.145	F	1,985	2C-S	7,750	10,856	1.401	F	0.256	Yes
12th St to 11th St (NB)	2C-S	7,750	10,688	1.379	F	2,074	2C-S	7,750	12,762	1.647	F	0.268	Yes
12th St to 11th St (SB)	2C-S	7,750	8,871	1.145	F	2,074	2C-S	7,750	10,945	1.412	F	0.268	Yes
11th St to 9th St (NB)	2C-S	7,750	10,688	1.379	F	2,462	2C-S	7,750	13,150	1.697	F	0.318	Yes
11th St to 9th St (SB)	2C-S	7,750	8,871	1.145	F	2,462	2C-S	7,750	11,333	1.462	F	0.318	Yes
9th St to Del Mar Heights Rd (NB)	2C	15,000	10,688	0.713	D	2,619	2C	15,000	13,307	0.887	E	0.175	Yes
9th St to Del Mar Heights Rd (SB)	2C	15,000	8,871	0.591	C	2,619	2C	15,000	11,490	0.766	D	0.175	No
Del Mar Heights Rd to Carmel Valley Rd (NB)	2C	15,000	6,495	0.433	B	421	2C	15,000	6,916	0.461	B	0.028	No
Del Mar Heights Rd to Carmel Valley Rd (SB)	1C	7,500	7,504	1.000	F	421	1C	7,500	7,925	1.057	F	0.056	Yes
South of Carmel Valley Rd (NB)	1C	7,500	6,984	0.931	E	203	1C	7,500	7,187	0.958	E	0.027	Yes
South of Carmel Valley Rd (SB)	1C	7,500	8,014	1.068	F	203	1C	7,500	8,217	1.096	F	0.027	Yes
Lomas Santa Fe Dr													
Solana Hills Dr to I-5 SB Ramps	4C	30,000	29,565	0.986	E	68	4C	30,000	29,633	0.988	E	0.002	No
Via De La Valle													
Del Mar Downs Rd to Jimmy Durante Blvd	2C CL	15,000	20,280	1.352	F	0	2C CL	15,000	20,280	1.352	F	0.000	No
Jimmy Durante Blvd to I-5 SB Ramps	5MA	50,000	43,589	0.872	E	1,404	5MA	50,000	44,993	0.900	E	0.028	Yes
East of I-5 NB Ramps	5MA	50,000	41,528	0.831	E	656	5MA	50,000	42,184	0.844	E	0.013	No
Jimmy Durante Blvd													
Via De La Valle to San Diegito Dr	4C	30,000	13,230	0.441	B	1,964	4C	30,000	15,194	0.506	C	0.065	No
San Dieguito Dr to Camino Del Mar	2C CL	15,000	7,513	0.501	C	2,057	2C CL	15,000	9,570	0.638	C	0.137	No

Note: ¹ Lanes/Class and Capacity change only for With Project conditions, Baseline Conditions do not change

Abbreviations: 1C: 1 lane Collector with a continuous left-turn lane. 2C: 2 lane Collector. 2C-S: 2 lane collector with stop signs. 2C CL: 2 lane Collector with a continuous left-turn lane. 2C CIF: 2 lane Collector with commercial and industrial fronting property. 2SC: 2 lane Sub-Collector with single-family fronting property. 4C: 4 lane Collector. 4MA: 4 lane Major Arterial. 5MA: 5 lane Major Arterial.

**Table 6-1B
Long Term Plus Project Daily Roadway Segment Conditions – No Circulation Changes**

Roadway Segment	Long Term Conditions					Project Traffic	Long Term Conditions With Project					Comparison	
	Lanes/Class	LOS E Capacity	ADT	V/C	LOS		Lanes/Class	LOS E Capacity	ADT	V/C	LOS	Δ V/C	Potentially Significant?
Del Mar Heights Rd													
I-5 NB Ramps to High Bluff Drive	5MA	50,000	40,949	0.819	E	842	5MA	50,000	41,791	0.836	E	0.017	No
I-5 SB Ramps to Mango Drive	5MA	50,000	36,425	0.729	D	3,089	5MA	50,000	39,514	0.790	D	0.062	No
Camino Del Mar to Crest Way	4C	30,000	18,363	0.612	C	3,229	4C	30,000	21,592	0.720	D	0.108	No
Carmel Valley Rd													
East of S. Camino Del Mar	2C CL	15,000	12,499	0.833	D	203	2C CL	15,000	12,702	0.847	D	0.014	No
15th St													
Coast Blvd to Camino Del Mar	2C CIF	8,000	5,572	0.697	D	1,216	2C CIF	8,000	6,788	0.849	E	0.152	Yes
Camino Del Mar to Luneta Dr	2C CIF	8,000	2,955	0.369	B	460	2C CIF	8,000	3,415	0.427	B	0.058	No
Crest Rd													
North of Del Mar Heights Rd	2SC	2,200	1,638	0.745	Less than C	46	2SC	2,200	1,684	0.765	Less than C	0.021	No
Coast Blvd													
North of 15th St	2C	15,000	4,078	0.272	A	468	2C	15,000	4,546	0.303	A	0.031	No
Stratford Ct													
15th St to 13th St	2SC	2,200	2,156	0.980	Less than C	424	2SC	2,200	2,580	1.173	Greater than C	0.193	Yes

Note: ¹ Lanes/Class and Capacity change only for With Project conditions, Baseline Conditions do not change

Abbreviations: 1C: 1 lane Collector with a continuous left-turn lane. 2C: 2 lane Collector. 2C-S: 2 lane collector with stop signs. 2C CL: 2 lane Collector with a continuous left-turn lane. 2C CIF: 2 lane Collector with commercial and industrial fronting property. 2SC: 2 lane Sub-Collector with single-family fronting property. 4C: 4 lane Collector. 4MA: 4 lane Major Arterial. 5MA: 5 lane Major Arterial.

Table 6-2A
Long Term Plus Project AM Peak Hour Intersection Conditions –No Circulation Changes

Intersection	Long Term Conditions		Long Term Conditions With Project		Δ Delay	Potentially Significant?
	Delay	LOS	Delay	LOS		
AM Peak Hour						
1. Via De La Valle / Camino Del Mar	15.1	B	16.5	B	1.4	No
2. Via De La Valle / Jimmy Durante Blvd	36.4	D	40.6	D	4.2	No
3. Via De La Valle / I-5 SB Ramps	5.3	A	5.4	A	0.1	No
4. Via De La Valle / I-5 NB Ramps	12.6	B	12.8	B	0.2	No
5. Via De La Valle / San Andres Dr	23.3	C	23.3	C	0.0	No
6. Coast Blvd / Camino Del Mar	20.1	C	22.2	C	2.1	No
7. 15th St / Stratford Ct	9.4	A	10.1	B	0.7	No
8. 12th St / Stratford Ct	8.6	A	8.7	A	0.1	No
9. 15th St / Camino Del Mar ¹	13.6	B	16.6	B	3.0	No
10. 13th St / Camino Del Mar ¹	13.1	B	16.8	C	3.7	No
11. 12th St / Camino Del Mar ¹	12.2	B	13.3	B	1.1	No
12. 11th St / Camino Del Mar ¹	13.3	B	18.3	C	5.0	No
13. 9th St / Camino Del Mar ¹	7.3	A	8.7	A	1.4	No
14. 4th St / Camino Del Mar	25.5	C	33.4	C	7.9	No
15. Camino Del Mar / Carmel Valley Rd	41.1	D	41.3	D	0.2	No
16. Del Mar Heights Rd / Crest Way	5.6	A	5.7	A	0.1	No
17. Del Mar Heights Rd / I-5 SB Ramps	7.7	A	8.0	A	0.3	No
18. Del Mar Heights Rd / I-5 NB Ramps	21.6	C	22.4	C	0.8	No
19. Del Mar Heights Rd / High Bluff Dr	21.0	C	21.4	C	0.4	No
20. Del Mar Heights Rd / El Camino Real	38.6	D	38.8	D	0.2	No
21. 15th St / Ocean Ave	7.8	A	8.0	A	0.2	No

Footnote: ¹Geometry change only for With Project conditions. Baseline Conditions are the same as Existing Conditions and do not change.

Note: LOS for All Way Stop Control intersections is based on the average control delay. Therefore, the resulting LOS might not be representative of the delay experienced on the critical approach.

Table 6-2B
Long Term Plus Project PM Peak Hour Intersection Conditions –No Circulation Changes

Intersection	Long Term Conditions		Long Term Conditions With Project		Δ Delay	Potentially Significant?
	Delay	LOS	Delay	LOS		
PM Peak Hour						
1. Via De La Valle / Camino Del Mar	19.8	B	19.9	B	0.1	No
2. Via De La Valle / Jimmy Durante Blvd	27.4	C	29.3	C	1.9	No
3. Via De La Valle / I-5 SB Ramps	9.9	A	10.8	B	0.9	No
4. Via De La Valle / I-5 NB Ramps	12.4	B	12.6	B	0.2	No
5. Via De La Valle / San Andres Dr	31.6	C	32.6	C	1.0	No
6. Coast Blvd / Camino Del Mar	14.5	B	15.7	C	1.2	No
7. 15th St / Stratford Ct	10.5	B	11.6	B	1.1	No
8. 12th St / Stratford Ct	8.7	A	8.8	A	0.1	No
9. 15th St / Camino Del Mar ¹	16.0	B	17.6	B	1.6	No
10. 13th St / Camino Del Mar ¹	17.2	C	30.0	D	12.8	No
11. 12th St / Camino Del Mar ¹	13.0	B	13.1	B	0.1	No
12. 11th St / Camino Del Mar ¹	19.0	C	42.3	E	23.3	Yes
13. 9th St / Camino Del Mar ¹	7.1	A	8.9	A	1.8	No
14. 4th St / Camino Del Mar	24.2	C	31.1	C	6.9	No
15. Camino Del Mar / Carmel Valley Rd	25.1	C	26.2	C	1.1	No
16. Del Mar Heights Rd / Crest Way	7.5	A	7.8	A	0.3	No
17. Del Mar Heights Rd / I-5 SB Ramps	9.6	A	10.4	B	0.8	No
18. Del Mar Heights Rd / I-5 NB Ramps	18.8	B	20.3	C	1.5	No
19. Del Mar Heights Rd / High Bluff Dr	25.9	C	26.3	C	0.4	No
20. Del Mar Heights Rd / El Camino Real	31.7	C	31.8	C	0.1	No
21. 15th St / Ocean Ave	19.8	B	19.9	B	0.1	No

Footnote: ¹Geometry change only for With Project conditions. Baseline Conditions are the same as Existing Conditions and do not change.

Note: LOS for All Way Stop Control intersections is based on the average control delay. Therefore, the resulting LOS might not be representative of the delay experienced on the critical approach.

**Table 6-3
Long Term Plus Project Freeway Mainline Conditions – No Circulation Changes**

Freeway Segment	Direction	Number of Lanes ¹	Hourly Capacity	ADT ²	Long Term Conditions						Long Term Conditions with Project						Comparison		Potentially Significant?
					AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			Increase V/C		
					Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	
Interstate 5 Freeway																			
Lomas Santa Fe to Via de la Valle	NB	4M + 1A + 1HOV	10,400	293,317	8,504	0.818	D	10,544	1.014	F(0)	8,524	0.820	D	10,581	1.017	F(0)	0.002	0.004	No
	SB	4M + 1A + 1HOV	10,400		11,362	1.093	F(0)	10,108	0.972	E	11,384	1.095	F(0)	10,127	0.974	E	0.002	0.002	No
Via de la Valle to Del Mar Heights Road	NB	4M + 1A + 1HOV	10,400	310,999	9,756	0.938	E	10,694	1.028	F(0)	9,756	0.938	E	10,694	1.028	F(0)	0.000	0.000	No
	SB	4M + 1A + 1HOV	10,400		12,160	1.169	F(0)	10,341	0.994	E	12,160	1.169	F(0)	10,341	0.994	E	0.000	0.000	No
Del Mar Heights Road to Carmel Valley Road	NB	5M + 1A + 1HOV	12,400	322,136	10,192	0.822	D	10,003	0.807	D	10,242	0.826	D	10,080	0.813	D	0.004	0.006	No
	SB	5M + 1A + 1HOV	12,400		13,672	1.103	F(0)	10,504	0.847	D	13,738	1.108	F(0)	10,587	0.854	D	0.005	0.007	No

Footnotes:

¹ M: Mainline, A: Auxiliary, HOV: High Occupancy Vehicle Lane.

² 2035 ADT Volumes from 2035 SANDAG Model

Note:

*The three circulation alternatives do not affect the freeway mainline

For consistency purposes, the proposed improvements to the I-5 corridor including the second HOV lane were not accounted on this analysis.

LOS	V/C
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46

**Table 6-4
Long Term Plus Project Freeway Ramp Meter Conditions – No Circulation Changes**

Location	Long Term Conditions					Long Term Conditions with Project					Comparison	
	Meter Rate (veh/hr/lane)	Demand (veh/hr/lane)	Excess Demand	Delay (Min)	Queue (ft)	Meter Rate (veh/hr/lane)	Demand (veh/hr/lane)	Excess Demand	Delay (Min)	Queue (ft)	Δ Delay (Min)	Sig?
AM Peak Hour												
Via de la Valle EB to I - 5 NB	372	160	0	0.0	0	372	172	0	0.0	0	0.0	No
Via de la Valle WB to I - 5 NB	473	409	0	0.0	0	473	409	0	0.0	0	0.0	No
Via de la Valle WB to I - 5 NB (HOV)	473	45	0	0.0	0	473	45	0	0.0	0	0.0	No
Via de la Valle EB to I - 5 SB	996	1,004	8	0.5	244	996	1,015	19	1.2	558	0.7	No
Via de la Valle EB to I - 5 SB (HOV)	996	112	0	0.0	0	996	113	0	0.0	0	0.0	No
Via de la Valle WB to I - 5 SB	424	356	0	0.0	0	424	356	0	0.0	0	0.0	No
Del Mar Heights Road to I - 5 NB	593	522	0	0.0	0	593	522	0	0.0	0	0.0	No
Del Mar Heights Road EB to I - 5 SB	996	628	0	0.0	0	996	658	0	0.0	0	0.0	No
Del Mar Heights Road EB to I - 5 SB (HOV)	996	70	0	0.0	0	996	73	0	0.0	0	0.0	No
Del Mar Heights Road WB to I - 5 SB	352	483	131	22.2	3,785	352	483	131	22.2	3,785	0.0	No
PM Peak Hour												
Via de la Valle EB to I - 5 NB	372	252	0	0.0	0	372	266	0	0.0	0	0.0	No
Via de la Valle WB to I - 5 NB	473	402	0	0.0	0	473	402	0	0.0	0	0.0	No
Via de la Valle WB to I - 5 NB (HOV)	473	45	0	0.0	0	473	45	0	0.0	0	0.0	No
Via de la Valle EB to I - 5 SB	424	727	303	42.9	8,782	424	739	315	44.6	9,149	1.8	No
Via de la Valle EB to I - 5 SB (HOV)	424	81	0	0.0	0	424	82	0	0.0	0	0.0	No
Via de la Valle WB to I - 5 SB	352	214	0	0.0	0	352	214	0	0.0	0	0.0	No
Del Mar Heights Road to I - 5 NB	593	388	0	0.0	0	593	388	0	0.0	0	0.0	No
Del Mar Heights Road EB to I - 5 SB	996	337	0	0.0	0	996	371	0	0.0	0	0.0	No
Del Mar Heights Road EB to I - 5 SB (HOV)	996	37	0	0.0	0	996	41	0	0.0	0	0.0	No
Del Mar Heights Road WB to I - 5 SB	368	279	0	0.0	0	368	279	0	0.0	0	0.0	No

Note:

Excess demand = Demand - Meter Rate

Delay = (Excess Demand/Meter Rate)*60 minutes

Queue = Excess Demand*29 feet/vehicle

1The three circulation alternatives do not affect the freeway mainline

FOUR LANE COLLECTOR WITH SIGNALS

OPERATIONAL ANALYSIS:

Segment Operations

The long term with project segment analysis for the “Four Lane Collector With Signals” alternative is summarized in Table 6-5A and 6-5B. As shown in Table 6-5A and 6-5B, the following roadway segments are operating at unacceptable LOS:

- Highway 101 – North of Lomas Santa Fe Drive, LOS E
- Camino del Mar – North of Jimmy Durante Boulevard (NB and SB), LOS E
- Camino del Mar – Jimmy Durante Boulevard to 15th Street (NB and SB), LOS E
- Camino del Mar – 13th Street to 12th Street (NB), LOS E
- Camino del Mar – 12th Street to 11th Street (NB), LOS E
- Camino del Mar – 11th Street to 9th Street (NB), LOS E
- Camino del Mar – 9th Street to Del Mar Heights Road (NB), LOS E
- Camino del Mar – Del Mar Heights Road to Carmel Valley Road (SB), LOS F
- Camino del Mar – South of Carmel Valley Road (NB), LOS E
- Camino del Mar – South of Carmel Valley Road (SB), LOS F
- Lomas Santa Fe Drive – Solana Hills Drive to I-5 Southbound Ramps, LOS E
- Via de la Valle – Del Mar Downs Road to Jimmy Durante Boulevard, LOS F
- Via de la Valle – Jimmy Durante Road to Interstate 5 SB Ramps, LOS E
- Via de la Valle – East of Interstate 5 NB Ramps, LOS E
- Del Mar Heights Road – I-5 NB Ramps to High Bluff Drive, LOS E
- 15th Street – Coast Boulevard to Camino del Mar, LOS E
- Stratford Court – 15th Street to 13th Street, LOS greater than C

With the addition of the project traffic, the following segments are calculated to exceed the allowable increased delay resulting into potential significant impacts.

- Camino del Mar – North of Jimmy Durante Boulevard (NB and SB), LOS E
- Camino del Mar – Jimmy Durante Boulevard to 15th Street (NB and SB), LOS E
- Camino del Mar – 9th Street to Del Mar Heights Road (NB), LOS E
- Camino del Mar – Del Mar Heights Road to Carmel Valley Road (SB), LOS F
- Camino del Mar – South of Carmel Valley Road (NB), LOS E
- Camino del Mar – South of Carmel Valley Road (SB), LOS F
- Via de la Valle – Jimmy Durante Road to Interstate 5 SB Ramps, LOS E
- 15th Street – Coast Boulevard to Camino del Mar, LOS E

- Stratford Court – 15th Street to 13th Street, LOS greater than C

Intersection Operations

The long term with project intersection analysis for the “Four Lane Collector With Signal” alternative is summarized in Table 6-6A and 6-6B. As shown in Table 6-6A and 6-6B, all intersections in the study area are calculated to operate at an acceptable LOS D or better.

Freeway Mainline and Ramp Meter Conditions

The long term with project freeway mainline analysis and ramp meter conditions for the “Four Lane Collector With Signals” is the same as the “No Circulation Changes” alternative and is summarized in Tables 6-3 and 6-4 respectively.

Appendix K includes long term with project peak hour intersection analysis worksheets for four lane collector with signals alternative.

**Table 6-5A
Long Term Plus Project Daily Roadway Segment Conditions - Four-Lanes with Signals**

Roadway Segment	Long Term Conditions					Project Traffic	Long Term Conditions With Project					Comparison	
	Lanes/Class	LOS E Capacity	ADT	V/C	LOS		Lanes/Class	LOS E Capacity	ADT	V/C	LOS	Δ V/C	Potentially Significant?
Highway 101													
North of Lomas Santa Fe Dr	4C	30,000	29,087	0.970	E	271	4C	30,000	29,358	0.979	E	0.009	No
North of Via De La Valle	4C	30,000	22,580	0.753	D	406	4C	30,000	22,986	0.766	D	0.014	No
Camino Del Mar													
North of Jimmy Durante Blvd (NB)	1C	7,500	6,087	0.812	D	271	1C	7,500	6,358	0.848	E	0.036	Yes
North of Jimmy Durante Blvd (SB)	1C	7,500	6,390	0.852	E	271	1C	7,500	6,661	0.888	E	0.036	Yes
Jimmy Durante Blvd to 15th St (NB)	2C	15,000	11,071	0.738	D	1,498	2C	15,000	12,569	0.838	E	0.100	Yes
Jimmy Durante Blvd to 15th St (SB)	2C	15,000	11,232	0.749	D	1,498	2C	15,000	12,730	0.849	E	0.100	Yes
15th St to 13th St (NB)	2C-S	7,750	10,688	1.379	F	1,560	2C	15,000	12,248	0.817	D	-0.563	No
15th St to 13th St (SB)	2C-S	7,750	8,871	1.145	F	1,560	2C	15,000	10,431	0.695	D	-0.449	No
13th St to 12th St (NB)	2C-S	7,750	10,688	1.379	F	1,985	2C	15,000	12,673	0.845	E	-0.534	No
13th St to 12th St (SB)	2C-S	7,750	8,871	1.145	F	1,985	2C	15,000	10,856	0.724	D	-0.421	No
12th St to 11th St (NB)	2C-S	7,750	10,688	1.379	F	2,074	2C	15,000	12,762	0.851	E	-0.528	No
12th St to 11th St (SB)	2C-S	7,750	8,871	1.145	F	2,074	2C	15,000	10,945	0.730	D	-0.415	No
11th St to 9th St (NB)	2C-S	7,750	10,688	1.379	F	2,462	2C	15,000	13,150	0.877	E	-0.502	No
11th St to 9th St (SB)	2C-S	7,750	8,871	1.145	F	2,462	2C	15,000	11,333	0.756	D	-0.389	No
9th St to Del Mar Heights Rd (NB)	2C	15,000	10,688	0.713	D	2,619	2C	15,000	13,307	0.887	E	0.175	Yes
9th St to Del Mar Heights Rd (SB)	2C	15,000	8,871	0.591	C	2,619	2C	15,000	11,490	0.766	D	0.175	No
Del Mar Heights Rd to Carmel Valley Rd (NB)	2C	15,000	6,495	0.433	B	421	2C	15,000	6,916	0.461	B	0.028	No
Del Mar Heights Rd to Carmel Valley Rd (SB)	1C	7,500	7,504	1.000	F	421	1C	7,500	7,925	1.057	F	0.056	Yes
South of Carmel Valley Rd (NB)	1C	7,500	6,984	0.931	E	203	1C	7,500	7,187	0.958	E	0.027	Yes
South of Carmel Valley Rd (SB)	1C	7,500	8,014	1.068	F	203	1C	7,500	8,217	1.096	F	0.027	Yes
Lomas Santa Fe Dr													
Solana Hills Dr to I-5 SB Ramps	4C	30,000	29,565	0.986	E	68	4C	30,000	29,633	0.988	E	0.002	No
Via De La Valle													
Del Mar Downs Rd to Jimmy Durante Blvd	2C CL	15,000	20,280	1.352	F	0	2C CL	15,000	20,280	1.352	F	0.000	No
Jimmy Durante Blvd to I-5 SB Ramps	5MA	50,000	43,589	0.872	E	1,404	5MA	50,000	44,993	0.900	E	0.028	Yes
East of I-5 NB Ramps	5MA	50,000	41,528	0.831	E	656	5MA	50,000	42,184	0.844	E	0.013	No
Jimmy Durante Blvd													
Via De La Valle to San Diegito Dr	4C	30,000	13,230	0.441	B	1,964	4C	30,000	15,194	0.506	C	0.065	No
San Dieguito Dr to Camino Del Mar	2C CL	15,000	7,513	0.501	C	2,057	2C CL	15,000	9,570	0.638	C	0.137	No

Note: ¹ Lanes/Class and Capacity change only for With Project conditions, Baseline Conditions do not change

Abbreviations: 1C: 1 lane Collector with a continuous left-turn lane. 2C: 2 lane Collector. 2C-S: 2 lane collector with stop signs. 2C CL: 2 lane Collector with a continuous left-turn lane. 2C CIF: 2 lane Collector with commercial and industrial fronting property. 2SC: 2 lane Sub-Collector with single-family fronting property. 4C: 4 lane Collector. 4MA: 4 lane Major Arterial. 5MA: 5 lane Major Arterial.

**Table 6-5B
Long Term Plus Project Daily Roadway Segment Conditions - Four-Lanes with Signals**

Roadway Segment	Long Term Conditions					Project Traffic	Long Term Conditions With Project					Comparison	
	Lanes/Class	LOS E Capacity	ADT	V/C	LOS		Lanes/Class	LOS E Capacity	ADT	V/C	LOS	Δ V/C	Potentially Significant?
Del Mar Heights Rd													
I-5 NB Ramps to High Bluff Drive	5MA	50,000	40,949	0.819	E	842	5MA	50,000	41,791	0.836	E	0.017	No
I-5 SB Ramps to Mango Drive	5MA	50,000	36,425	0.729	D	3,089	5MA	50,000	39,514	0.790	D	0.062	No
Camino Del Mar to Crest Way	4C	30,000	18,363	0.612	C	3,229	4C	30,000	21,592	0.720	D	0.108	No
Carmel Valley Rd													
East of S. Camino Del Mar	2C CL	15,000	12,499	0.833	D	203	2C CL	15,000	12,702	0.847	D	0.014	No
15th St													
Coast Blvd to Camino Del Mar	2C CIF	8,000	5,572	0.697	D	1,216	2C CIF	8,000	6,788	0.849	E	0.152	Yes
Camino Del Mar to Luneta Dr	2C CIF	8,000	2,955	0.369	B	460	2C CIF	8,000	3,415	0.427	B	0.058	No
Crest Rd													
North of Del Mar Heights Rd	2SC	2,200	1,638	0.745	Less than C	46	2SC	2,200	1,684	0.765	Less than C	0.021	No
Coast Blvd													
North of 15th St	2C	15,000	4,078	0.272	A	468	2C	15,000	4,546	0.303	A	0.031	No
Stratford Ct													
15th St to 13th St	2SC	2,200	2,156	0.980	Less than C	424	2SC	2,200	2,580	1.173	Greater than C	0.193	Yes

Note: ¹ Lanes/Class and Capacity change only for With Project conditions, Baseline Conditions do not change

Abbreviations: 1C: 1 lane Collector with a continuous left-turn lane. 2C: 2 lane Collector. 2C-S: 2 lane collector with stop signs. 2C CL: 2 lane Collector with a continuous left-turn lane. 2C CIF: 2 lane Collector with commercial and industrial fronting property. 2SC: 2 lane Sub-Collector with single-family fronting property. 4C: 4 lane Collector. 4MA: 4 lane Major Arterial. 5MA: 5 lane Major Arterial.

Table 6-6A
Long Term Plus Project AM Peak Hour Intersection Conditions –Four-Lanes with Signals

Intersection	Long Term Conditions		Long Term Conditions With Project		Δ Delay	Potentially Significant?
	Delay	LOS	Delay	LOS		
AM Peak Hour						
1. Via De La Valle / Camino Del Mar	15.1	B	16.5	B	1.4	No
2. Via De La Valle / Jimmy Durante Blvd	36.4	D	40.6	D	4.2	No
3. Via De La Valle / I-5 SB Ramps	5.3	A	5.4	A	0.1	No
4. Via De La Valle / I-5 NB Ramps	12.6	B	12.8	B	0.2	No
5. Via De La Valle / San Andres Dr	23.3	C	23.3	C	0.0	No
6. Coast Blvd / Camino Del Mar	20.1	C	22.2	C	2.1	No
7. 15th St / Stratford Ct	9.4	A	10.1	B	0.7	No
8. 12th St / Stratford Ct	8.6	A	8.7	A	0.1	No
9. 15th St / Camino Del Mar ¹	13.6	B	22.9	C	9.3	No
10. 13th St / Camino Del Mar ¹	13.1	B	11.8	B	-1.3	No
11. 12th St / Camino Del Mar ¹	12.2	B	10.8	B	-1.4	No
12. 11th St / Camino Del Mar ¹	13.3	B	11.5	B	-1.8	No
13. 9th St / Camino Del Mar ¹	7.3	A	8.7	A	1.4	No
14. 4th St / Camino Del Mar	25.5	C	33.4	C	7.9	No
15. Camino Del Mar / Carmel Valley Rd	41.1	D	41.3	D	0.2	No
16. Del Mar Heights Rd / Crest Way	5.6	A	5.7	A	0.1	No
17. Del Mar Heights Rd / I-5 SB Ramps	7.7	A	8.0	A	0.3	No
18. Del Mar Heights Rd / I-5 NB Ramps	21.6	C	22.4	C	0.8	No
19. Del Mar Heights Rd / High Bluff Dr	21.0	C	21.4	C	0.4	No
20. Del Mar Heights Rd / El Camino Real	38.6	D	38.8	D	0.2	No
21. 15th St / Ocean Ave	7.8	A	8.0	A	0.2	No

Footnote: ¹Geometry change only for With Project conditions. Baseline Conditions are the same as Existing Conditions and do not change.

Note: LOS for All Way Stop Control intersections is based on the average control delay. Therefore, the resulting LOS might not be representative of the delay experienced on the critical approach.

Table 6-6B
Long Term Plus Project PM Peak Hour Intersection Conditions –Four-Lanes with Signals

Intersection	Long Term Conditions		Long Term Conditions With Project		Δ Delay	Potentially Significant?
	Delay	LOS	Delay	LOS		
PM Peak Hour						
1. Via De La Valle / Camino Del Mar	19.8	B	19.9	B	0.1	No
2. Via De La Valle / Jimmy Durante Blvd	27.4	C	29.3	C	1.9	No
3. Via De La Valle / I-5 SB Ramps	9.9	A	10.8	B	0.9	No
4. Via De La Valle / I-5 NB Ramps	12.4	B	12.6	B	0.2	No
5. Via De La Valle / San Andres Dr	31.6	C	32.6	C	1.0	No
6. Coast Blvd / Camino Del Mar	14.5	B	15.7	C	1.2	No
7. 15th St / Stratford Ct	10.5	B	11.6	B	1.1	No
8. 12th St / Stratford Ct	8.7	A	8.8	A	0.1	No
9. 15th St / Camino Del Mar ¹	16.0	B	18.6	B	2.6	No
10. 13th St / Camino Del Mar ¹	17.2	C	13.9	B	-3.3	No
11. 12th St / Camino Del Mar ¹	13.0	B	11.7	B	-1.3	No
12. 11th St / Camino Del Mar ¹	19.0	C	15.4	B	-3.6	No
13. 9th St / Camino Del Mar ¹	7.1	A	8.9	A	1.8	No
14. 4th St / Camino Del Mar	24.2	C	31.1	C	6.9	No
15. Camino Del Mar / Carmel Valley Rd	25.1	C	26.2	C	1.1	No
16. Del Mar Heights Rd / Crest Way	7.5	A	7.8	A	0.3	No
17. Del Mar Heights Rd / I-5 SB Ramps	9.6	A	10.4	B	0.8	No
18. Del Mar Heights Rd / I-5 NB Ramps	18.8	B	20.3	C	1.5	No
19. Del Mar Heights Rd / High Bluff Dr	25.9	C	26.3	C	0.4	No
20. Del Mar Heights Rd / El Camino Real	31.7	C	31.8	C	0.1	No
21. 15th St / Ocean Ave	8.4	A	9.0	A	0.6	No

Footnote: ¹Geometry change only for With Project conditions. Baseline Conditions are the same as Existing Conditions and do not change.

Note: LOS for All Way Stop Control intersections is based on the average control delay. Therefore, the resulting LOS might not be representative of the delay experienced on the critical approach.

TWO-LANES WITH ROUNDABOUTS

OPERATIONAL ANALYSIS:

Segment Operations

The long term with project segment analysis for the “Two Lane Collector With Roundabouts” alternative is summarized in Table 6-7A and 6-7B. As shown in Table 6-7A and 6-7B, all roadway segments in the study area are calculated to operate at an acceptable LOS D or better except for the following.

- Highway 101 – North of Lomas de Santa Fe Drive, LOS E
- Camino del Mar – North of Jimmy Durante Boulevard (NB and SB), LOS E
- Camino del Mar – Jimmy Durante Boulevard to 15th Street (NB and SB), LOS E
- Camino del Mar – 15th Street to 13th Street (NB and SB), LOS E
- Camino del Mar – 13th Street to 12th Street (NB), LOS F
- Camino del Mar – 13th Street to 12th Street (SB), LOS E
- Camino del Mar – 12th Street to 11th Street (NB), LOS F
- Camino del Mar – 12th Street to 11th Street (SB), LOS E
- Camino del Mar – 11th Street to 9th Street (NB), LOS F
- Camino del Mar – 11th Street to 9th Street (SB), LOS E
- Camino del Mar – 9th Street to Del Mar Heights Road (NB), LOS E
- Camino del Mar – Del Mar Heights Road to Carmel Valley Road (SB), LOS F
- Camino del Mar – South of Carmel Valley Road (NB), LOS E
- Camino del Mar – South of Carmel Valley Road (SB), LOS F
- Lomas Santa Fe Drive – Solana Hills Drive to I-5 Southbound Ramps, LOS E
- Via de la Valle – Del Mar Downs Road to Jimmy Durante Boulevard, LOS F
- Via de la Valle – Jimmy Durante Road to Interstate 5 SB Ramps, LOS E
- Via de la Valle – East of Interstate 5 NB Ramps, LOS E
- Del Mar Heights Road – I-5 NB Ramps to High Bluff Drive, LOS E
- 15th Street – Coast Boulevard to Camino del Mar, LOS E
- Stratford Court – 15th Street to 13th Street, LOS greater than C

With the addition of the project traffic, the following segments are calculated to exceed the allowable increased delay resulting into potential significant impacts.

- Camino del Mar – North of Jimmy Durante Boulevard (NB and SB), LOS E
- Camino del Mar – Jimmy Durante Boulevard to 15th Street (NB and SB), LOS E
- Camino del Mar – 9th Street to Del Mar Heights Road (NB), LOS E

- Camino del Mar –Del Mar Heights Road to Carmel Valley Road (SB), LOS F
- Camino del Mar – South of Carmel Valley Road (NB), LOS E
- Camino del Mar – South of Carmel Valley Road (SB), LOS F
- Via de la Valle – Jimmy Durante Road to Interstate 5 SB Ramps, LOS E
- 15th Street – Coast Boulevard to Camino del Mar, LOS E
- Stratford Court – 15th Street to 13th Street, LOS greater than C

Intersection Operations

The long term with project intersection analysis for the “Two Lane Collector With Roundabouts” alternative is summarized in Table 6-8A and 6-8B. As shown in Table 6-8A and 6-8B, all intersections in the study area are calculated to operate at an acceptable LOS D.

Freeway Mainline and Ramp Meter Conditions

The long term with project freeway mainline analysis and ramp meter conditions for the “Two Lane Collector With Roundabouts” is the same as the “No Circulation Changes” alternative and is summarized in Tables 6-3 and 6-4 respectively.

Appendix L includes long term with project peak hour intersection analysis worksheets for two lane collector with roundabouts alternative.

**Table 6-7A
Long Term Plus Project Daily Roadway Segment Conditions - Two-Lanes with Roundabouts**

Roadway Segment	Long Term Conditions					Project Traffic	Long Term Conditions With Project					Comparison	
	Lanes/Class	LOS E Capacity	ADT	V/C	LOS		Lanes/Class	LOS E Capacity	ADT	V/C	LOS	Δ V/C	Potentially Significant?
Highway 101													
North of Lomas Santa Fe Dr	4C	30,000	29,087	0.970	E	271	4C	30,000	29,358	0.979	E	0.009	No
North of Via De La Valle	4C	30,000	22,580	0.753	D	406	4C	30,000	22,986	0.766	D	0.014	No
Camino Del Mar													
North of Jimmy Durante Blvd (NB)	1C	7,500	6,087	0.812	D	271	1C	7,500	6,358	0.848	E	0.036	Yes
North of Jimmy Durante Blvd (SB)	1C	7,500	6,390	0.852	E	271	1C	7,500	6,661	0.888	E	0.036	Yes
Jimmy Durante Blvd to 15th St (NB)	2C	15,000	11,071	0.738	D	1,498	2C	15,000	12,569	0.838	E	0.100	Yes
Jimmy Durante Blvd to 15th St (SB)	2C	15,000	11,232	0.749	D	1,498	2C	15,000	12,730	0.849	E	0.100	Yes
15th St to 13th St (NB)	2C-S	7,750	10,688	1.379	F	1,560	1R	12,500	12,248	0.980	E	-0.399	No
15th St to 13th St (SB)	2C-S	7,750	8,871	1.145	F	1,560	1R	12,500	10,431	0.835	E	-0.310	No
13th St to 12th St (NB)	2C-S	7,750	10,688	1.379	F	1,985	1R	12,500	12,673	1.014	F	-0.365	No
13th St to 12th St (SB)	2C-S	7,750	8,871	1.145	F	1,985	1R	12,500	10,856	0.869	E	-0.276	No
12th St to 11th St (NB)	2C-S	7,750	10,688	1.379	F	2,074	1R	12,500	12,762	1.021	F	-0.358	No
12th St to 11th St (SB)	2C-S	7,750	8,871	1.145	F	2,074	1R	12,500	10,945	0.876	E	-0.269	No
11th St to 9th St (NB)	2C-S	7,750	10,688	1.379	F	2,462	1R	12,500	13,150	1.052	F	-0.327	No
11th St to 9th St (SB)	2C-S	7,750	8,871	1.145	F	2,462	1R	12,500	11,333	0.907	E	-0.238	No
9th St to Del Mar Heights Rd (NB)	2C	15,000	10,688	0.713	D	2,619	2C	15,000	13,307	0.887	E	0.175	Yes
9th St to Del Mar Heights Rd (SB)	2C	15,000	8,871	0.591	C	2,619	2C	15,000	11,490	0.766	D	0.175	No
Del Mar Heights Rd to Carmel Valley Rd (NB)	2C	15,000	6,495	0.433	B	421	2C	15,000	6,916	0.461	B	0.028	No
Del Mar Heights Rd to Carmel Valley Rd (SB)	1C	7,500	7,504	1.000	F	421	1C	7,500	7,925	1.057	F	0.056	Yes
South of Carmel Valley Rd (NB)	1C	7,500	6,984	0.931	E	203	1C	7,500	7,187	0.958	E	0.027	Yes
South of Carmel Valley Rd (SB)	1C	7,500	8,014	1.068	F	203	1C	7,500	8,217	1.096	F	0.027	Yes
Lomas Santa Fe Dr													
Solana Hills Dr to I-5 SB Ramps	4C	30,000	29,565	0.986	E	68	4C	30,000	29,633	0.988	E	0.002	No
Via De La Valle													
Del Mar Downs Rd to Jimmy Durante Blvd	2C CL	15,000	20,280	1.352	F	0	2C CL	15,000	20,280	1.352	F	0.000	No
Jimmy Durante Blvd to I-5 SB Ramps	5MA	50,000	43,589	0.872	E	1,404	5MA	50,000	44,993	0.900	E	0.028	Yes
East of I-5 NB Ramps	5MA	50,000	41,528	0.831	E	656	5MA	50,000	42,184	0.844	E	0.013	No
Jimmy Durante Blvd													
Via De La Valle to San Dieguito Dr	4C	30,000	13,230	0.441	B	1,964	4C	30,000	15,194	0.506	C	0.065	No
San Dieguito Dr to Camino Del Mar	2C CL	15,000	7,513	0.501	C	2,057	2C CL	15,000	9,570	0.638	C	0.137	No

Note: ¹ Lanes/Class and Capacity change only for With Project conditions, Baseline Conditions do not change

Abbreviations: 1C: 1 lane Collector with a continuous left-turn lane. 2C: 2 lane Collector. 2C-S: 2 lane collector with stop signs. 2C CL: 2 lane Collector with a continuous left-turn lane. 2C CIF: 2 lane Collector with commercial and industrial fronting property. 2SC: 2 lane Sub-Collector with single-family fronting property. 4C: 4 lane Collector. 4MA: 4 lane Major Arterial. 5MA: 5 lane Major Arterial.

**Table 6-7B
Long Term Plus Project Daily Roadway Segment Conditions - Two-Lanes with Roundabouts**

Roadway Segment	Long Term Conditions					Project Traffic	Long Term Conditions With Project					Comparison	
	Lanes/Class	LOS E Capacity	ADT	V/C	LOS		Lanes/Class	LOS E Capacity	ADT	V/C	LOS	Δ V/C	Potentially Significant?
Del Mar Heights Rd													
I-5 NB Ramps to High Bluff Drive	5MA	50,000	40,949	0.819	E	842	5MA	50,000	41,791	0.836	E	0.017	No
I-5 SB Ramps to Mango Drive	5MA	50,000	36,425	0.729	D	3,089	5MA	50,000	39,514	0.790	D	0.062	No
Camino Del Mar to Crest Way	4C	30,000	18,363	0.612	C	3,229	4C	30,000	21,592	0.720	D	0.108	No
Carmel Valley Rd													
East of S. Camino Del Mar	2C CL	15,000	12,499	0.833	D	203	2C CL	15,000	12,702	0.847	D	0.014	No
15th St													
Coast Blvd to Camino Del Mar	2C CIF	8,000	5,572	0.697	D	1,216	2C CIF	8,000	6,788	0.849	E	0.152	Yes
Camino Del Mar to Luneta Dr	2C CIF	8,000	2,955	0.369	B	460	2C CIF	8,000	3,415	0.427	B	0.058	No
Crest Rd													
North of Del Mar Heights Rd	2SC	2,200	1,638	0.745	Less than C	46	2SC	2,200	1,684	0.765	Less than C	0.021	No
Coast Blvd													
North of 15th St	2C	15,000	4,078	0.272	A	468	2C	15,000	4,546	0.303	A	0.031	No
Stratford Ct													
15th St to 13th St	2SC	2,200	2,156	0.980	Less than C	424	2SC	2,200	2,580	1.173	Greater than C	0.193	Yes

Note: ¹ Lanes/Class and Capacity change only for With Project conditions, Baseline Conditions do not change

Abbreviations: 1C: 1 lane Collector with a continuous left-turn lane. 2C: 2 lane Collector. 2C-S: 2 lane collector with stop signs. 2C CL: 2 lane Collector with a continuous left-turn lane. 2C CIF: 2 lane Collector with commercial and industrial fronting property. 2SC: 2 lane Sub-Collector with single-family fronting property. 4C: 4 lane Collector. 4MA: 4 lane Major Arterial. 5MA: 5 lane Major Arterial.

Table 6-8A
Long Term Plus Project AM Peak Hour Intersection Conditions - Two-Lanes with Roundabouts

Intersection	Long Term Conditions		Long Term Conditions With Project		Δ Delay	Potentially Significant?
	Delay	LOS	Delay	LOS		
AM Peak Hour						
1. Via De La Valle / Camino Del Mar	15.1	B	16.5	B	1.4	No
2. Via De La Valle / Jimmy Durante Blvd	36.4	D	40.6	D	4.2	No
3. Via De La Valle / I-5 SB Ramps	5.3	A	5.4	A	0.1	No
4. Via De La Valle / I-5 NB Ramps	12.6	B	12.8	B	0.2	No
5. Via De La Valle / San Andres Dr	23.3	C	23.3	C	0.0	No
6. Coast Blvd / Camino Del Mar	20.1	C	22.2	C	2.1	No
7. 15th St / Stratford Ct	9.4	A	10.1	B	0.7	No
8. 12th St / Stratford Ct	8.6	A	8.7	A	0.1	No
9. 15th St / Camino Del Mar ¹	13.6	B	15.0	B	1.4	No
10. 13th St / Camino Del Mar ¹	13.1	B	16.2	C	3.1	No
11. 12th St / Camino Del Mar ¹	12.2	B	18.3	C	6.1	No
12. 11th St / Camino Del Mar ¹	13.3	B	15.9	C	2.6	No
13. 9th St / Camino Del Mar ¹	7.3	A	14.0	B	6.7	No
14. 4th St / Camino Del Mar	25.5	C	33.4	C	7.9	No
15. Camino Del Mar / Carmel Valley Rd	41.1	D	41.3	D	0.2	No
16. Del Mar Heights Rd / Crest Way	5.6	A	5.7	A	0.1	No
17. Del Mar Heights Rd / I-5 SB Ramps	7.7	A	8.0	A	0.3	No
18. Del Mar Heights Rd / I-5 NB Ramps	21.6	C	22.4	C	0.8	No
19. Del Mar Heights Rd / High Bluff Dr	21.0	C	21.4	C	0.4	No
20. Del Mar Heights Rd / El Camino Real	38.6	D	38.8	D	0.2	No
21. 15th St / Ocean Ave	7.8	A	8.0	A	0.2	No

Footnote: ¹Geometry change only for With Project conditions. Baseline Conditions are the same as Existing Conditions and do not change.

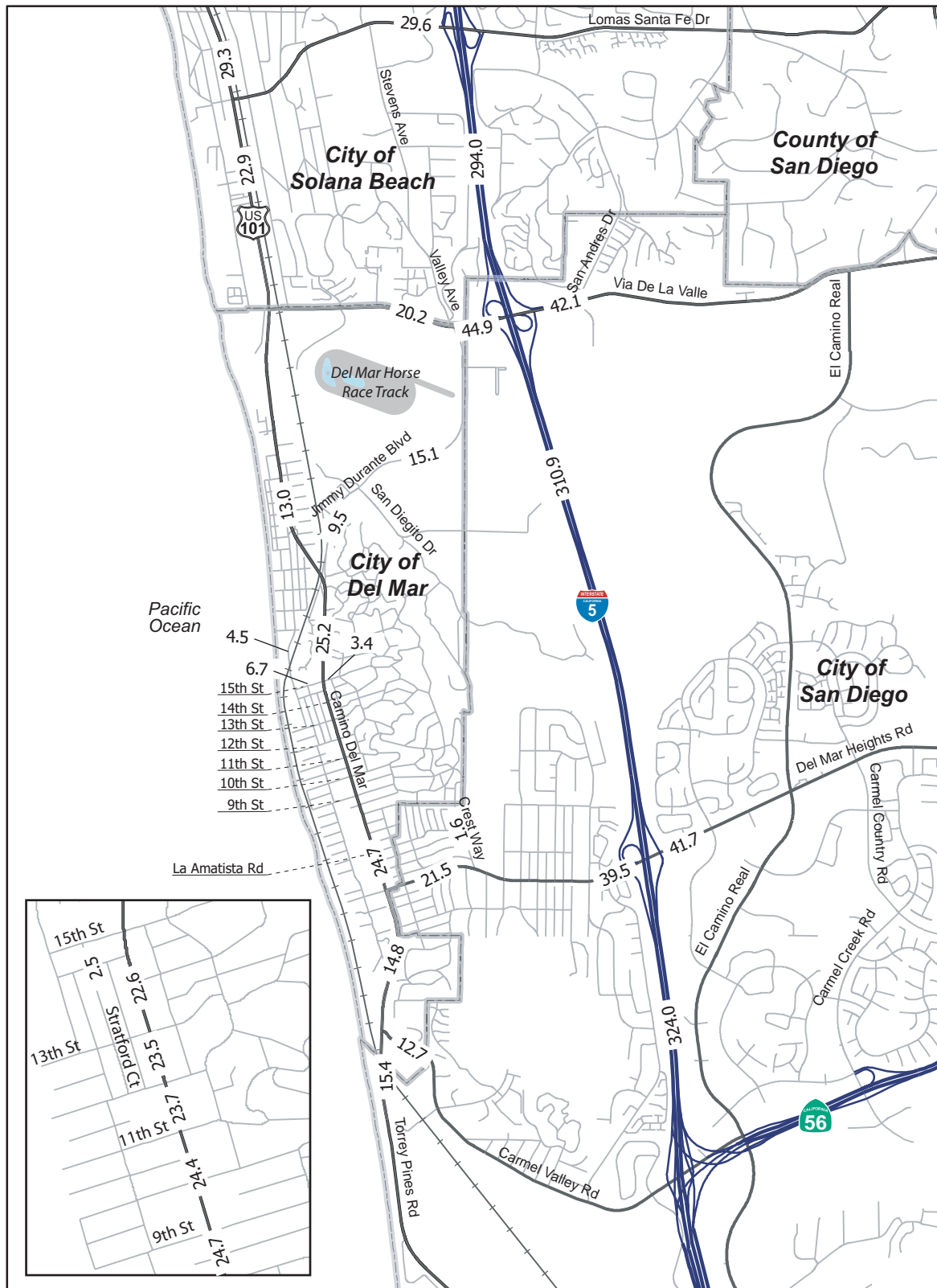
Note: LOS for All Way Stop Control intersections is based on the average control delay. Therefore, the resulting LOS might not be representative of the delay experienced on the critical approach.

Table 6-8B
Long Term Plus Project PM Peak Hour Intersection Conditions - Two-Lanes with Roundabouts

Intersection	Long Term Conditions		Long Term Conditions With Project		Δ Delay	Potentially Significant?
	Delay	LOS	Delay	LOS		
PM Peak Hour						
1. Via De La Valle / Camino Del Mar	19.8	B	19.9	B	0.1	No
2. Via De La Valle / Jimmy Durante Blvd	27.4	C	29.3	C	1.9	No
3. Via De La Valle / I-5 SB Ramps	9.9	A	10.8	B	0.9	No
4. Via De La Valle / I-5 NB Ramps	12.4	B	12.6	B	0.2	No
5. Via De La Valle / San Andres Dr	31.6	C	32.6	C	1.0	No
6. Coast Blvd / Camino Del Mar	14.5	B	15.7	C	1.2	No
7. 15th St / Stratford Ct	10.5	B	11.6	B	1.1	No
8. 12th St / Stratford Ct	8.7	A	8.8	A	0.1	No
9. 15th St / Camino Del Mar ¹	16.0	B	29.8	D	13.8	No
10. 13th St / Camino Del Mar ¹	17.2	C	24.4	C	7.2	No
11. 12th St / Camino Del Mar ¹	13.0	B	21.4	C	8.4	No
12. 11th St / Camino Del Mar ¹	19.0	C	34.5	D	15.5	No
13. 9th St / Camino Del Mar ¹	7.1	A	27.2	D	20.1	No
14. 4th St / Camino Del Mar	24.2	C	31.1	C	6.9	No
15. Camino Del Mar / Carmel Valley Rd	25.1	C	26.2	C	1.1	No
16. Del Mar Heights Rd / Crest Way	7.5	A	7.8	A	0.3	No
17. Del Mar Heights Rd / I-5 SB Ramps	9.6	A	10.4	B	0.8	No
18. Del Mar Heights Rd / I-5 NB Ramps	18.8	B	20.3	C	1.5	No
19. Del Mar Heights Rd / High Bluff Dr	25.9	C	26.3	C	0.4	No
20. Del Mar Heights Rd / El Camino Real	31.7	C	31.8	C	0.1	No
21. 15th St / Ocean Ave	8.4	A	9.0	A	0.6	No

Footnote: ¹Geometry change only for With Project conditions. Baseline Conditions are the same as Existing Conditions and do not change.

Note: LOS for All Way Stop Control intersections is based on the average control delay. Therefore, the resulting LOS might not be representative of the delay experienced on the critical approach.



LEGEND	
—15—	Average Daily Traffic (1000s)

Figure 6-1
Long Term Daily Roadway Segment Volumes Plus Project

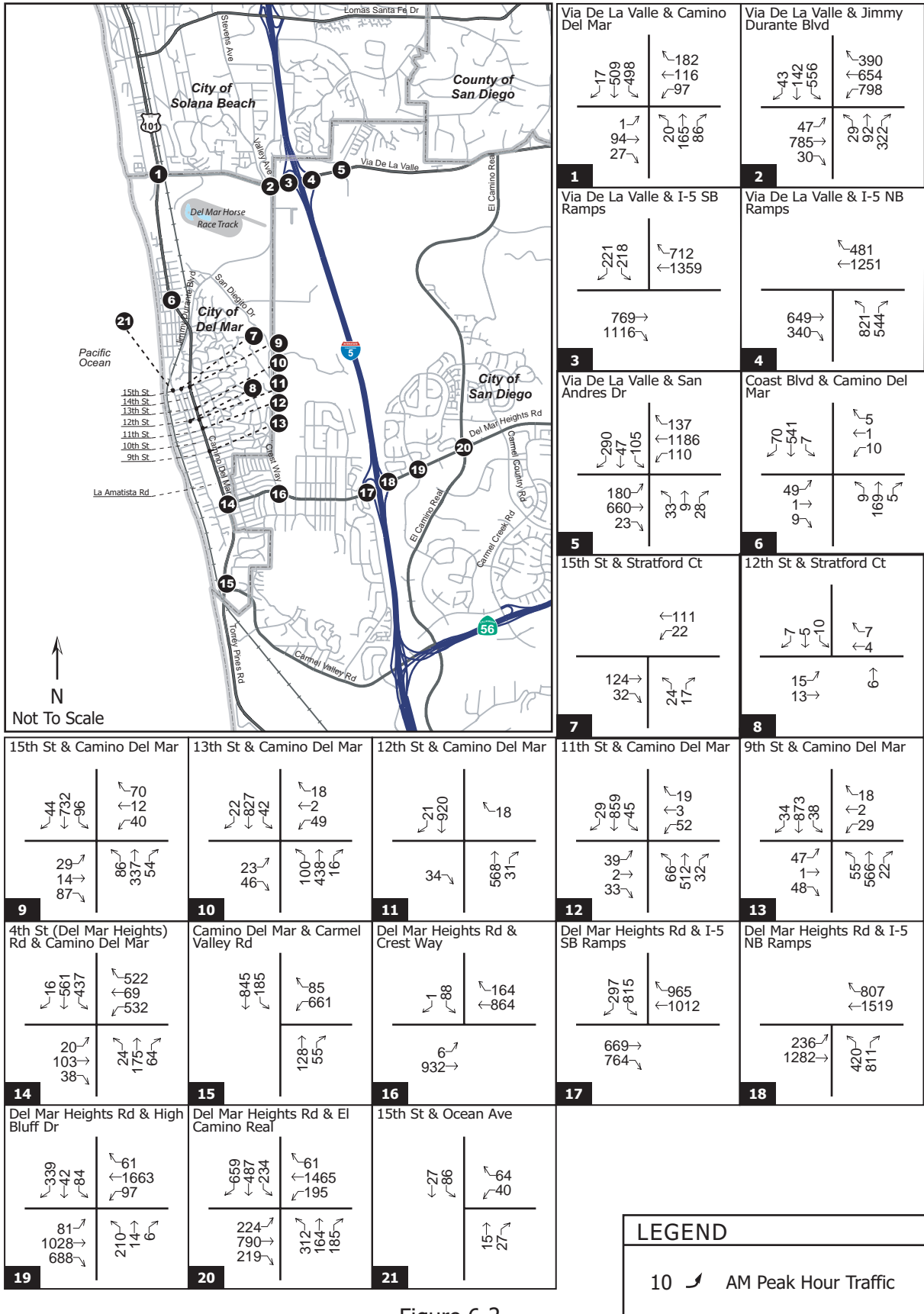


Figure 6-2
Long Term AM Peak Hour Intersection Volumes Plus Project

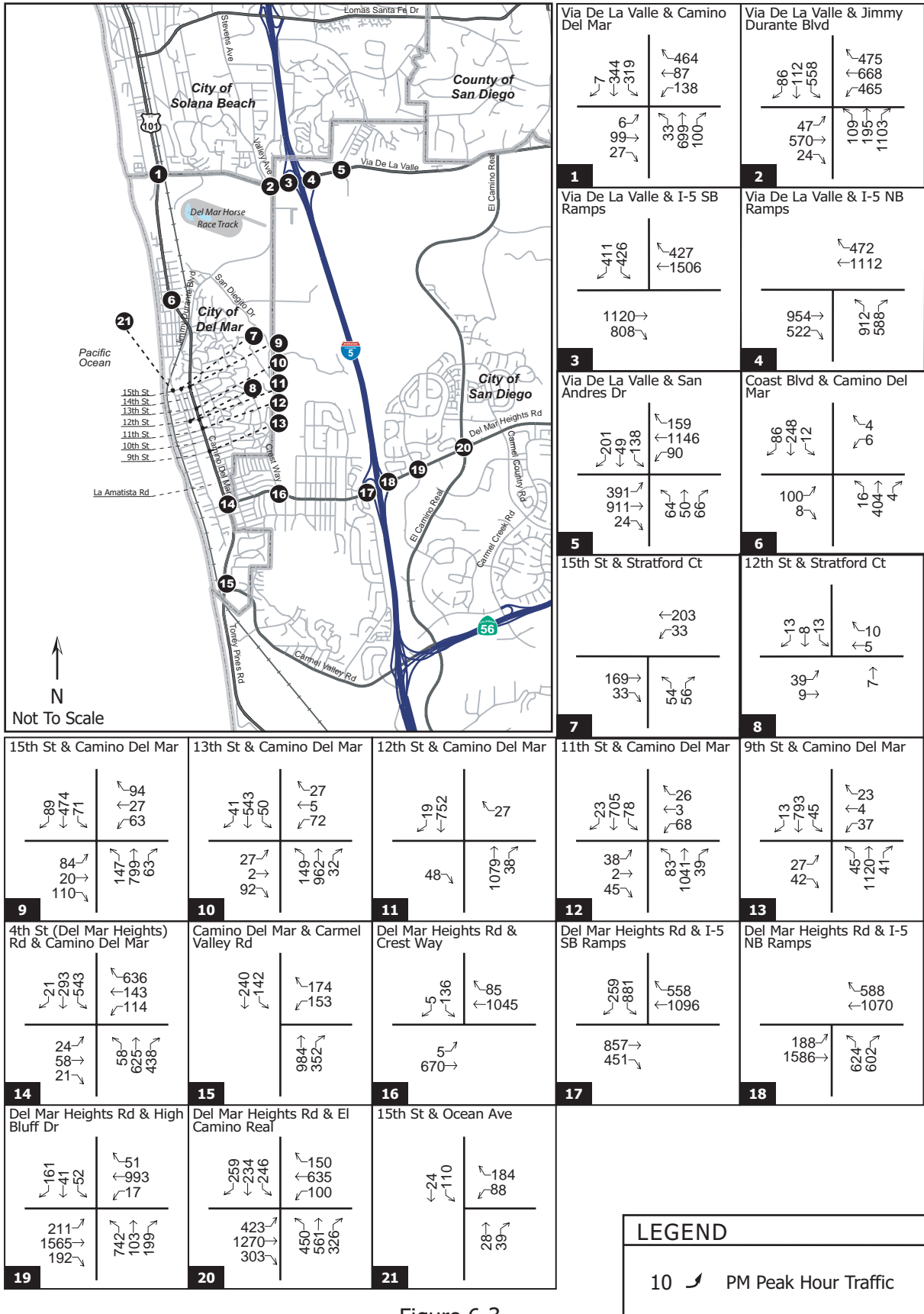


Figure 6-3
Long Term Plus Project Intersection AM Peak Hour Volumes

CHAPTER 7 PEDESTRIANS, BICYCLES, AND TRANSIT

BACKGROUND

The City of Del Mar's *Community Plan* acknowledges the importance of reducing commuter and through traffic. The plan also promotes the reduction of overall automobile use for trips within and through Del Mar. This chapter addresses the role of pedestrians, bikes and transit in the plan

PEDESTRIAN CIRCULATION

The purpose of evaluating pedestrian facilities is to fully integrate vehicular, transit, bicycle, and pedestrian facilities as directed in the *Del Mar Community Plan*. This section documents:

- Where pedestrians are walking within the study area
- The obstacles to pedestrian mobility
- Pedestrian facilities that link the different destination

Pedestrian Study Area

Figure 7-1 illustrates the pedestrian 5-minute walking radius. The five-minute walking radius assumes a pedestrian travel speed of 4.5 feet per second which equates to approximately 1,350 feet. The study area for the pedestrian facilities encompasses commercial spaces along Camino Del Mar, residential neighborhoods both east and west Camino Del Mar, and the beach located to the west of the project.

Pedestrian Land Use Attractors and Generators

Figure 7-2 illustrates land uses that would attract or generate pedestrians within the study area. The land uses include residential, office, commercial, transit, and mixed land uses. Commercial land uses front the main roadways of the study area – Camino Del Mar & Stratford Court. The commercial land uses consist primarily of numerous types of restaurants, several bars, retail with some commercial offices interspersed within the areas. Residential land uses begin approximately one block from the commercial area east and west of Camino Del Mar. The bus Route 101 located on Camino Del Mar is a transit-related generator/attractor in the study area. The beach and parks will remain a major regional attraction. As shown in Figures 7-1 and 7-2, much of Del Mar's residential area is within a 5-minute walk of the study area. The proximity and mix of land uses within the study area has the potential to generate walking trips and reduce vehicle use. This type of behavior will be further promoted by the project.

Pedestrian Barriers

Although the general study area is based on a 1,350-foot radius from the center of the project, many factors affect the mobility of pedestrians within the study area. The Del Mar study area has a sloping topography and rail lines that create barriers that obstruct pedestrians. The barriers make the distance travelled for some routes much longer than simply drawing a line from Point "A" to Point "B". The canyons, slopes and the railroad that run parallel to Pacific Coast are some of the obstacles that disrupt pedestrian access.

Linkage and Connectivity

Existing pedestrian facilities were inventoried as part of the existing conditions analysis to determine the type of facilities and their condition. Pedestrian facilities in the Del Mar study area were identified using the Route Types described in the *San Diego Pedestrian Master Plan* (December 2006). Existing facilities include corridor sidewalks, neighborhood sidewalks, and ancillary pedestrian facilities. Corridor sidewalks are defined as sidewalks along roads that support moderate business and shopping districts. Neighborhood sidewalks are defined as sidewalks along low to moderate density housing. The pedestrian linkages are indicated in Figure 7-4 based on the existing pedestrian facilities and the key attractors within the study area.



Figure 7-1
Five Minute Walking Radius



Figure 7-2
Existing Land Uses

Existing Pedestrian Facilities and Deficiencies

The Del Mar Village currently provides non-continuous sidewalks through Camino Del Mar ranging from approximately 5 to 12 feet in width. In many areas, sidewalks are inconsistent, and interrupted by parking. While most of the existing sidewalks are well maintained, some present a few physical deficiencies such as cracks; gaps and lack of curb ramps for physically disabled pedestrians. Several positive environmental factors include the landscaped boxes located along Camino Del Mar at the center of the Del Mar Commercial area and trash receptacles in many locations. There are street lights along the major roadways which in their absence could contribute to a perception of being unsafe. Some commercial establishments provide outside seating areas that encourage foot traffic. Most intersections have curb ramps for physically disabled pedestrians.

The alleys in the Del Mar Area are important pedestrian pathways. Residents may sometimes also walk in alleys instead of the nearby streets, in part because they have a lower volume of cars and, while there are no sidewalks, they have wider areas for the pedestrian to walk.

Project Effects on Pedestrian Facilities

The proximity and mix of land uses within the study area has the potential to generate walking trips and reduce vehicle use. The project proposes to redesign sidewalks so that they are continuous throughout the village and provide curb ramps for disabled pedestrians in the project area.

While all alternatives analyzed in this study propose pedestrian improvements, the Two Lane Collector with Roundabouts alternative, offers the most significant pedestrian enhancements physical modifications on Camino del Mar, some of which are detailed below:

- Narrowing of Camino del Mar from a four lane collector to a two lane collector
- Crossing distance will be reduced from 70-80 feet to 25 feet
- Pedestrians will cross one direction of traffic at a time for all alternatives
- Traffic speeds will be slower
- Sidewalk width will increase from 5 feet to 10 feet
- The area for outdoor dining, gathering and sidewalk cafes will be expanded

Figure 7-3 and 7-4 shows the existing pedestrian facilities, barriers and connections in the study area.

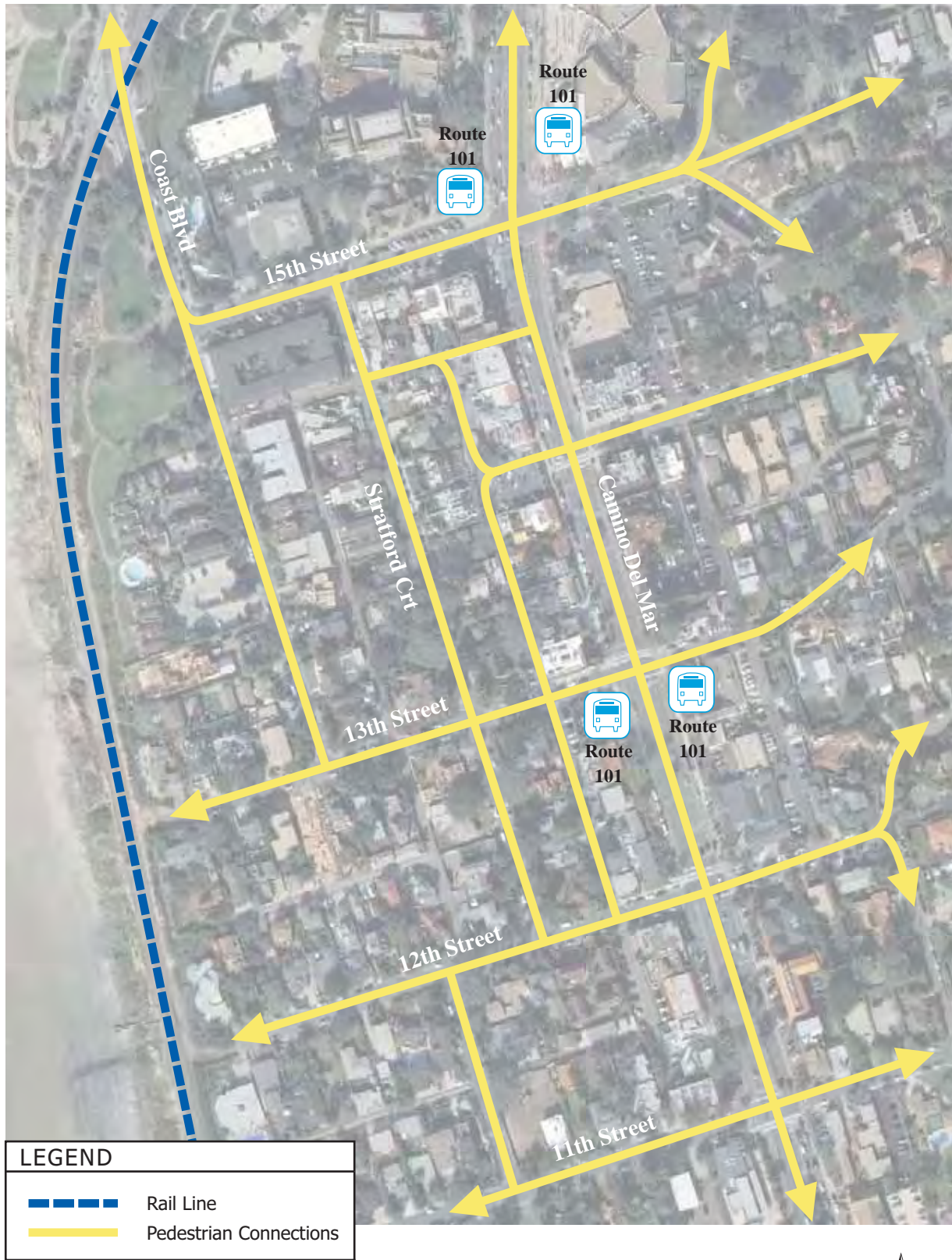


Figure 7-3
Pedestrian Barriers and Linkages

↑
N
Not To Scale





LEGEND	
	Sidewalk / Walkway
	Marked Crosswalk

Figure 7-4
Existing Pedestrian Facilities

↑
N
Not To Scale

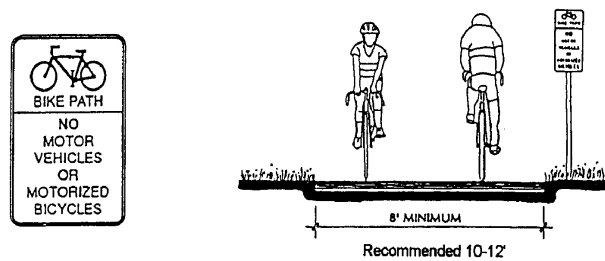
BICYCLE CIRCULATION

Bicycling is a basic fundamental form of transportation that is sometimes overlooked in this age of high-tech motorized travel. Yet this human-powered transportation mode is important to the success of the transportation system as a whole. All travelers are pedestrians at some point during their trip, even if it is between their parking space and their office building. Bicycling is considered a form of transportation that adds a viable alternative to freedom of mobility. Transportation planners and engineers have the same level of responsibility to provide for the safety of bicyclists and pedestrians as they do for motorists.

Bicycles can provide convenient transportation for destinations ranging between one and five miles. More experienced riders may be comfortable commuting up to 20 miles provided there are adequate bicycle facilities. Bikeways can be classified into three types:

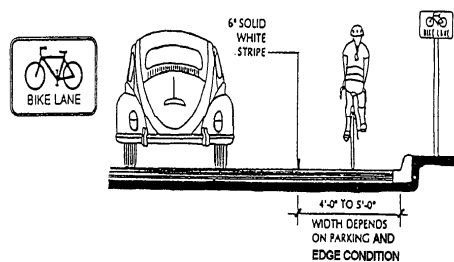
- Class I Bike Path - A bike path provides for bicycle travel on a paved right-of-way completely separated from any street or highway.

Class I Bike Path



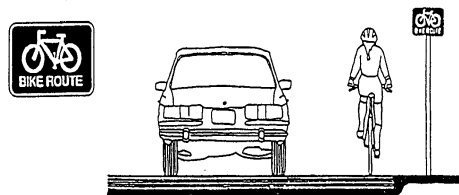
- Class II Bike Lane - These facilities are often referred to as bike lanes. Bike lanes provide a striped and stenciled lane for one-way travel on a street or highway. When properly designed, bike lanes help improve the visibility of bicyclists.

Class II Bike Lane



- Class III Bike Route – Generally referred to as a bike route. It provides for shared use with pedestrian or motor vehicle traffic and is identified only by signage. This is recommended when there is enough right-of-way for bicyclists and motorists to safely pass.

Class III Bike Route



Any of these facilities can be implemented in the Del Mar study area, depending on the predicted users, coordination with automobile traffic and several other factors. These factors include roadway classifications characteristics, Community Plan requirements, and availability of adequate right-of-way that can accommodate these facilities. On-road bicycle lanes (Class II) allow higher bicycle speeds compared to bicycle routes (Class III). Shared-use paths (Class I) are useful for children and relaxed recreational riders who are uncomfortable sharing the road with automobiles. Just as for sidewalks, connectivity in the bicycle network is very important. Riders of all abilities should be able to use the network.

The SANDAG *San Diego Regional Bike Plan: Riding to 2050*, “proposes a vision for a diverse regional bicycle system of interconnected bicycle corridors, improve bicycling safety, calls for more transportation options and a balanced regional transportation system to support smart growth and a more sustainable region.” According to the Plan, Camino del Mar is currently classified as a Class II Bike Lane. The City of Del Mar is part of the proposed Coastal Rail Trail Corridor which runs from Downtown San Diego to the north boundary of Oceanside and recommends a Class I – Bike Path / Bicycle Boulevard facility classification and corridor alignment for Camino del Mar. As defined in the Plan, Bicycle Boulevards are “roadways that have been enhanced with traffic calming and other treatments to facilitate safe and convenient bicycle travel prioritizing bicycle travel over vehicular. Figure 7-5 shows the existing regional bicycle network. Figure 7-6 shows the proposed regional bicycle network.

Bicycle Study Area

In order to improve bicycling conditions and promote greater bicycle use, it is important to understand the variety of land uses within a five mile study area. These land uses include commercial, transit and mixed land uses. The commercial land uses in the immediate vicinity of Del Mar consist primarily of restaurants and retail spaces. Surrounding communities such as Encinitas, Solana Beach, and the City of San Diego also contain large land use attractors/generators within this five mile study area. Figure 7-7 shows these communities and their proximity to the Del Mar Neighborhood. Bicycle facilities are necessary to provide bicycle connections between these communities.

Camino Del Mar and Coast Boulevard serves as a primary north-south route in the study area, however heavy peak hour traffic on these streets create barriers for bicyclists. Furthermore, this coastal route is internationally popular among long distance riders.

The Del Mar Community Plan cites a desire to provide a more bicycle friendly environment. This could be supplemented by other improvements such as providing bike racks, lockers and signage near destinations such as the shoreline, and commercial areas on Camino Del Mar. Figure 7-8 shows the existing bike circulation network.

Currently, Bike lanes on Camino del Mar are classified as Class II- Bike Lane in the SANDAG *San Diego Regional Bike Plan*.

Project Effects on Bicycle Facilities

The current conditions will be maintained under both No Circulation Change and Four Lane Collector with Signals alternatives. A brief description of the main enhancements proposed for the Two Lane Collector with Roundabouts alternative is detailed below.

- The decrease in traffic lanes and the addition of diagonal parking will act as a traffic calming measure that will reduce speeds in both traffic directions. This reduction in speed increases bicycle safety.
- Narrowing of Camino del Mar from a four lane collector to a two lane collector
- Traffic speeds will be slower compared to conventional intersections
- Left turns at the intersections will occur through the roundabout without having to merge
- The existing parallel parking will be changed to either head in or back in diagonal parking. Back in parking provides the most visibility for drivers to see bicyclists.



Figure 7-5
Existing Regional Bicycle Network



Figure 7-6
Proposed Regional Bicycle Network



Figure 7-7
Five Mile Area Major Bicycle Trip Attractors





LEGEND	
	Class II Bike Lane
	Class III Bike Route

Figure 7-8
Existing Bike Circulation Network



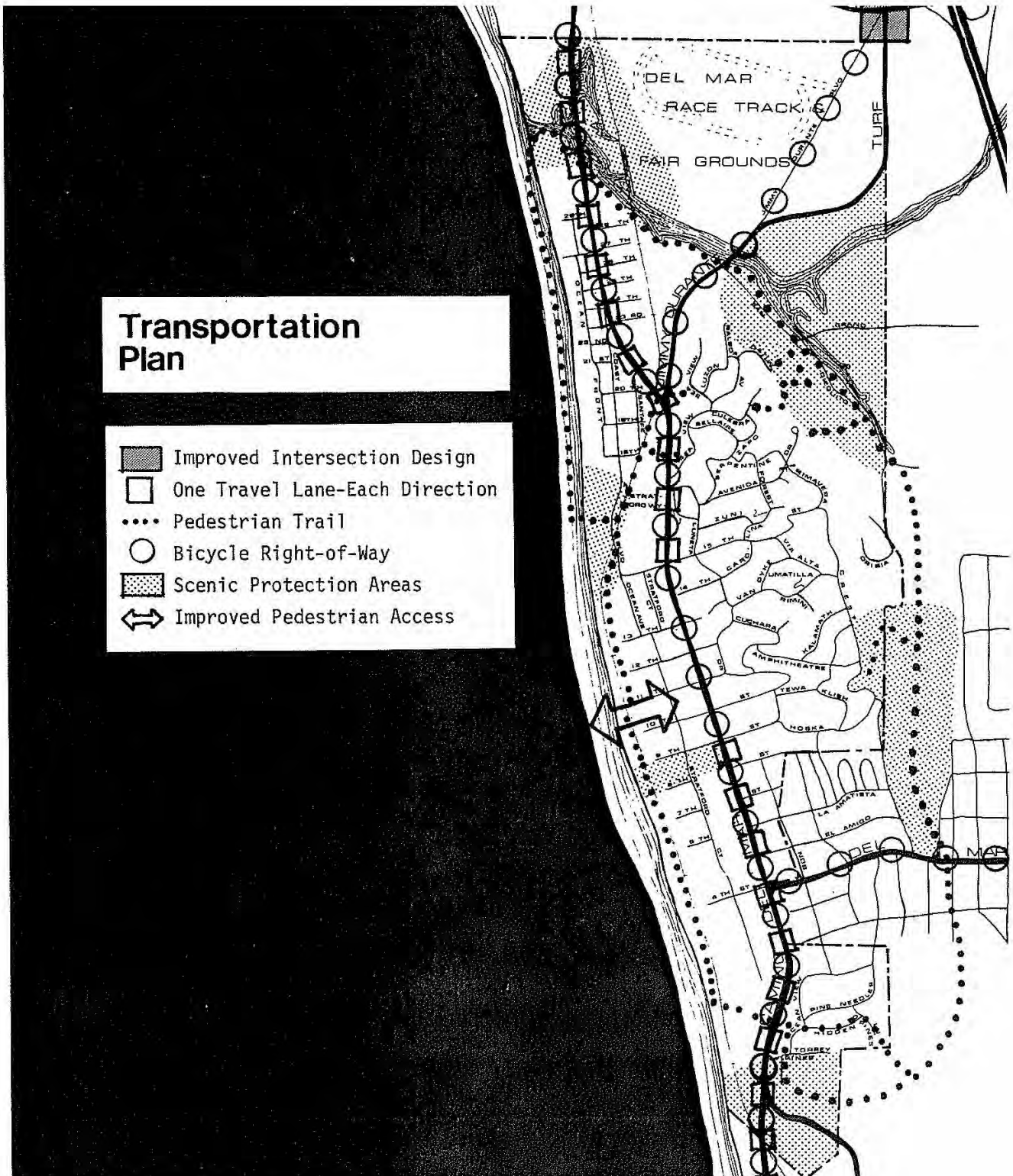


Figure 7-9
Del Mar Community Transportation Plan

↑
N
Not To Scale

TRANSIT CIRCULATION

The Del Mar Community Plan stresses the importance of incorporating all modes of transportation in the area. But, as stated in the community plan “Del Mar is unlikely to evolve into a primarily pedestrian-oriented community until a local transit system has been developed and integrated into a regional transit system”.

Bus Facilities

The primary bus service for Del Mar study area is Route 101 of the North County Transit District (NCTD), which has nine bus stops that provide bus service from the Oceanside Transit Center to University Town Center via Highway 101. The bus stops within the Del Mar study are located along Camino Del Mar between Paseo De Las Flores and 12th Street. There are two stops on each side of Camino Del Mar. Three of the bus stops have an uncovered bench and trash receptacle with adjacent overhead street lighting.

UCSD students, staff and faculty may ride free on Bus Route 101 by showing a valid UCSD ID with free bus zone sticker. This program is sponsored by UCSD’s Transportation and Parking Services Department.

Headway for weekday morning commute time is about 30 minutes for Bus Route 101.

Project Effects on Transit

During the Camino del Mar Pilot Program, the consultant team and the City met with representatives of North County Transit District. Based on this input and analysis it is determined that the project, under the Two Lane Collector with Roundabout alternative will affect transit operations in the following ways:

- The project may result in increased congestion in the southbound direction, which would have a some effect on transit time performance. Given that the merge will occur north of 15th Street, reentry from bus drivers at the stop just north of 15th Street would be slightly degraded. The buses would be required to merge into the southbound through lane across the 15th Street intersection with Camino del Mar. This would have minimal effects on the transit travel time performance because the southbound movement at this intersection is forecast to operate at good levels of service (LOS D). As part of a separate project, the bus stop location could be moved north approximately 300 feet (as a far side stop at Paseo De Las Flores) would result in overall improvements bus movements and operations at this location.
- If the merge occurs south of 15th Street, the merge would have negligible effects on bus operations.

The project will have no negative effect on the bus operation under the No Circulation Change and Four Lane Collector with Signals alternative as no lane configuration changes are proposed for these scenarios.






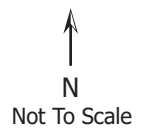
LEGEND	
	Bus Route
	Coaster Commuter Rail
	Bus Stop

Figure 7-10
Existing Transit Facilities



CHAPTER 8 IMPACTS AND SIGNIFICANCE

This chapter identifies impacts to the vehicle circulation network caused by the proposed project. It is important to note that the impacts that are caused not only by the increase in vehicle traffic allowed by the project, but also by the increase in traffic associated with approximately 25 years of regional growth and cumulative projects.

SIGNIFICANT IMPACTS

The transportation impacts assessed in this chapter are based on the comparison of Existing Conditions for the roadway system to the alternative roadway concepts using the projected and proposed land use.

RECOMMENDATIONS

The following tables state our recommendations for each alternative. These recommendations are listed below in Tables 8-1A and 8-1B.

**Table 8-1A
Existing Plus Project Impact Locations**

Existing Plus Project			
Alternative	Location	Significant	Comment
No Circulation Changes	<i>Segments:</i>		
	<ul style="list-style-type: none"> Camino del Mar from 15th Street to 9th Street 	Yes	Despite average intersection delay, motorists on Camino del Mar experience excessive delay at the All-Way Stop controlled intersections.
	<ul style="list-style-type: none"> Camino del Mar North of Jimmy Durante Camino del Mar from 9th Street to South of Carmel Valley Road Stratford Court from 15th Street to 13th Street 	No	The intersections bounding these segments operate at an adequate level of service; consequently, the roadway segment is not considered impacted.
Four Lane Collector With Signals	<i>Segments:</i>		
	<ul style="list-style-type: none"> Camino del Mar North of Jimmy Durante Camino del Mar from 9th Street (NB) to South of Carmel Valley Road Stratford Court from 15th Street to 13th Street 	No	The intersections bounding these segments operate at an adequate level of service; consequently, the roadway segment is not considered impacted.
	<ul style="list-style-type: none"> Camino del Mar North of Jimmy Durante Camino del Mar from 9th Street (NB) to South of Carmel Valley Road (NB) Stratford Court from 15th Street to 13th Street 	No	The intersections bounding these segments operate at an adequate level of service; consequently, the roadway segment is not considered impacted.

**Table 8-1B
Long Term Plus Project Impacts Locations**

Long Term Plus Project			
Alternative	Location	Significant	Comment
No Circulation Changes	<i>Segments</i>		
	<ul style="list-style-type: none"> Camino del Mar North of Jimmy Durante to South of Carmel Valley Road 	Yes	Despite average intersection delay, motorists on Camino del Mar experience excessive delay at the All-Way Stop controlled intersections.
	<ul style="list-style-type: none"> 15th Street from Coast Boulevard to Camino del Mar Stratford Court from 15th Street to 13th Street 	No	The intersections bounding these segments operate at an adequate level of service; consequently, the roadway segment is not considered impacted.
	<ul style="list-style-type: none"> Via De La Valle: from Jimmy Durante to I-5 SB Ramps 	No	Via de la Valle has an EB auxiliary lane, which relieves some of the traffic on this roadway. Thus allowing a greater effective capacity and it is not impacted.
	<i>Intersections</i>		
<ul style="list-style-type: none"> #12 – 11th Street & Camino del Mar 	Yes	This location has excessive delay as a stop-controlled intersection. The introduction of a traffic signal would mitigate the delay to acceptable levels. However, the concept of this alternative does not include a signal and is inconsistent with proposed definition of this alternative project, and without a signal this would be unmitigated	
Four Lane Collector With Signals	<i>Segments</i>		
	<ul style="list-style-type: none"> Camino del Mar North of Jimmy Durante to 15th Street Camino del Mar from 9th Street to South of Carmel Valley Road 15th Street from Coast Boulevard to Camino del Mar Stratford Court from 15th Street to 13th Street 	No	The intersections bounding these segments operate at an adequate level of service; consequently, the roadway segment is not considered impacted.
	<ul style="list-style-type: none"> Via De La Valle from Jimmy Durante to I-5 SB Ramps 	No	Via de la Valle has an EB auxiliary lane, which relieves some of the traffic on this roadway. Thus allowing a greater effective capacity capacity and it is not impacted.
Two Lane Collector With Roundabouts	<i>Segments</i>		
	<ul style="list-style-type: none"> Camino del Mar North of Jimmy Durante to 15th Street Camino del Mar from 9th Street to South of Carmel Valley Road 15th Street from Coast Boulevard to Camino del Mar Stratford Court from 15th Street to 13th Street 	No	The intersections bounding these segments operate at an adequate level of service; consequently, the roadway segment is not considered impacted.
	<ul style="list-style-type: none"> Via De La Valle from Jimmy Durante to I-5 SB Ramps 	No	Via de la Valle has an EB auxiliary lane, which relieves some of the traffic on this roadway. Thus allowing a greater effective capacity capacity and it is not impacted.

DIVERSION DISCUSSION

One of the concerns of Del Mar residents is the potential for diversion of traffic away from Camino Del Mar if alternative routes through the neighborhoods begin to be more attractive relative to potentially increasingly congested travel times between the alternatives and future demand conditions. This issue was examined in a January 26, 2012 memo by RBF, the City's traffic engineer, and an excerpt is included in Appendix M. Of the four possible diversion routes examined in that memo, it concluded that under existing conditions there would have to be at least a 3 minute increase in congestion or travel time on Camino Del Mar to make it more attractive to use the shortened diversion route. Other diversion routes involve an additional 4, 5 and 6 minutes of delay compared to existing conditions on Camino Del Mar.

The analysis of diversion is not an exact science, but to help get an idea of what could happen there are two ways to look at the future project. One way is to review the travel demand models that were commissioned for the project and run by SANDAG to see what additional traffic might have been added to a diversion route. Given the level of detail of the model, its inherent accuracy and the way models work it is difficult to draw any conclusions that diversion is being simulated in the regional model. However, there is another way to examine this issue and that is to examine how much additional delay is being added in the future under each of the alternatives studied based on the results of the intersection delays being calculated and reported in this study. While this is not a perfect estimate of the exact delay a driver would experience going through the Village, it is representative of the fact that some alternatives will have additional, or even substantial, delay at some intersections. By summing up the delay for the intersections along the route and excluding the reported delay for the side-street-stop only (i.e. – two way stop) intersections, we have an indicator of the added amount of total delay along the route. A table with this information is also in Appendix M.

The type of intersection control that would have the most delay associated with it for motorists on Camino Del Mar is all-way stop control. Since every motorist on the more travelled street has to advance to the stop sign, stop, and then proceed it assures that each and every person has delay, and the resulting queue back from the stop sign is shown in the analysis to be substantial, especially and despite the fact that very limited traffic is on the side streets approaching the intersection. In contrast to this are traffic signals that can and usually are set for timing to favor the greater amount of traffic, and they allocate a proportional amount of green time to that movement and a lesser amount of green time to the side street movement. Traffic signals contribute far less delay than do all-way stops. Roundabouts do involve some slowing for the motorist that could add minimal delay time, but since the motorist generally keeps moving through the intersection the added delay is also minimal. What we do not include is the delay associated with side street stop controls. Since only the side street needs to stop and the major street (Camino Del Mar) does not, there is no increased delay for traffic on the major street. Our intersection tables do report substantial time for delay for side street stop locations, but that is associated with the side streets only.

What the analysis shows can be summarized as:

- The intersections from 15th to 9th Streets presently have somewhat less than a minute of total delay for Camino Del Mar traffic in the peak periods.
- The delay will substantially increase in the future if the same set of intersection controls is not changed, and this will be particularly intense at the 11th and 13th intersections that have all-way stop control. Diversion is a real possibility and likelihood under this alternative.
- If traffic signals are installed at 11th and 13th rather than the all-way stop control, the delay in the future will diminish back to levels currently being experienced, and diversion is unlikely.

- If roundabouts are installed at all locations, the delay will still be considerably less than the no-build scenario, and diversion is unlikely.

CHAPTER 9 SUMMARY OF ANALYSIS

This chapter summarizes the operations at the study roadway segments and intersections. Chapters 3 and 4 summarize the Existing Conditions. Chapters 5 and 6 summarize the Long Term Conditions. Chapter 7 summarizes the pedestrian, bicycle, and transit circulation system. Chapter 8 summarizes the existing and long term impacts with the three alternatives and discusses mitigations. This chapter summarizes the operations at the study intersections and segments. Table 9-1 shows the roadway configuration for Camino del Mar under the proposed circulation alternatives. Table 9-2 depicts the speed limits on Camino del Mar for each circulation alternative. Table 9-3 shows the sidewalk widths under each alternative. Table 9-1 shows the summary of the existing roadway segment conditions for each scenario. Table 9-2A and 9-2B shows the summary of the existing intersection conditions for each scenario. Table 9-3 shows the summary of the long term roadway segment conditions for each scenario. Table 9-4A and 9-4B shows the summary of the long term intersection conditions for each scenario.

**Table 9-1
Camino Del Mar Circulation Alternatives**

Alternatives	Number of Lanes	Intersection Control	Intersection Control Affected	Roadway Capacity
No Circulation Changes	4	Stop signs	-	15,500
Four Lane Collector with Signals	4	Signals	13 th Street 11 th Street	30,000
Two Lane collector with Roundabouts	2	Roundabouts	15 th Street 13 th Street 11 th Street 9 th Street	25,000

**Table 9-2
Camino Del Mar Speed Limits**

Roadway Segment	With Project 4 Lane Collector With Stops	With Project 4 Lane Collector With Signals	With Project 2 Lane Collector With Roundabouts
Camino Del Mar			
North Jimmy Durante to 15 th Street	-	-	-
15 th St to 9 th Street	25	30	25
9 th St to Del Mar Heights Road	40	30	30
South of Del Mar Heights Rd	-	-	-

Note: Speed limits expressed in miles per hour

**Table 9-3
Camino Del Mar Sidewalks**

Camino Del Mar	With Project No Circulation Changes	With Project Four Lane Collector with Signals	With Project Two Lane Collector with Roundabout
Public Sidewalk Width	5 feet – 8 feet	5 feet – 8 feet	10 feet
Crossing Distance	70 feet – 80 feet	70 feet – 80 feet	25 feet

**Table 9-4
Summary of Existing Roadway Segment Conditions**

Roadway Segment	Without Project		With Project No Circulation Changes		With Project Four Lane Collector with Signals		With Project Two Lane Collector with Roundabout		
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	
Highway 101									
North of Lomas Santa Fe Dr	0.946	E	0.955	E	0.955	E	0.955	E	
North of Via De La Valle	0.729	D	0.743	D	0.743	D	0.743	D	
Camino Del Mar									
North of Jimmy Durante Blvd (NB)	0.800	D	0.837	E	0.837	E	0.837	E	
North of Jimmy Durante Blvd (SB)	0.840	E	0.876	E	0.876	E	0.876	E	
Jimmy Durante Blvd to 15th St (NB)	0.717	D	0.817	D	0.817	D	0.817	D	
Jimmy Durante Blvd to 15th St (SB)	0.717	D	0.817	D	0.817	D	0.817	D	
15th St to 13th St (NB)	1.338	F	1.539	F	0.795	D	0.954	E	
15th St to 13th St (SB)	1.082	F	1.284	F	0.663	C	0.796	E	
13th St to 12th St (NB)	1.338	F	1.594	F	0.823	D	0.988	E	
13th St to 12th St (SB)	1.082	F	1.339	F	0.692	D	0.830	E	
12th St to 11th St (NB)	1.338	F	1.605	F	0.829	D	0.995	E	
12th St to 11th St (SB)	1.082	F	1.350	F	0.698	D	0.837	E	
11th St to 9th St (NB)	1.338	F	1.655	F	0.855	E	1.026	F	
11th St to 9th St (SB)	1.082	F	1.400	F	0.723	D	0.868	E	
9th St to Del Mar Heights Rd (NB)	0.691	D	0.866	E	0.866	E	0.866	E	
9th St to Del Mar Heights Rd (SB)	0.559	C	0.734	D	0.734	D	0.734	D	
Del Mar Heights Rd to Carmel Valley Rd (NB)	0.423	B	0.451	B	0.451	B	0.451	B	
Del Mar Heights Rd to Carmel Valley Rd (SB)	0.971	E	1.027	F	1.027	F	1.027	F	
South of Carmel Valley Rd (NB)	0.847	E	0.874	E	0.874	E	0.874	E	
South of Carmel Valley Rd (SB)	0.971	E	0.998	E	0.998	E	0.998	E	
Lomas Santa Fe Dr									
Solana Hills Dr to I-5 SB Ramps	0.795	D	0.797	D	0.797	D	0.797	D	
Via De La Valle									
Del Mar Downs Rd to Jimmy Durante Blvd	1.300	F	1.300	F	1.300	F	1.300	F	
Jimmy Durante Blvd to I-5 SB Ramps	0.726	D	0.755	D	0.755	D	0.755	D	
East of I-5 NB Ramps	0.654	D	0.667	D	0.667	D	0.667	D	
Jimmy Durante Blvd									
Via De La Valle to San Diegito Dr	0.329	A	0.395	B	0.395	B	0.395	B	
San Dieguito Dr to Camino Del Mar	0.448	B	0.585	C	0.585	C	0.585	C	
Del Mar Heights Rd									
I-5 NB Ramps to High Bluff Drive	0.941	E	0.958	E	0.958	E	0.958	E	
I-5 SB Ramps to Mango Drive	0.675	D	0.736	D	0.736	D	0.736	D	
Camino Del Mar to Crest Way	0.567	C	0.674	D	0.674	D	0.674	D	
Carmel Valley Rd									
East of S. Camino Del Mar	0.718	D	0.732	D	0.732	D	0.732	D	
15th St									
Coast Blvd to Camino Del Mar	0.639	D	0.791	D	0.791	D	0.791	D	
Camino Del Mar to Luneta Dr	0.369	B	0.427	B	0.427	B	0.427	B	
Crest Rd									
North of Del Mar Heights Rd	0.745	Less than C	0.765	Less than C	0.765	Less than C	0.765	Less than C	
Coast Blvd									
North of 15th St	0.252	A	0.283	A	0.283	A	0.283	A	
Stratford Ct									
15th St to 13th St	0.980	Less than C	1.173	Greater than C	1.173	Greater than C	1.173	Greater than C	

**Table 9-5A
Summary of Existing Intersection Conditions – AM Peak Hour**

Intersection	Without Project		With Project No Circulation Changes		With Project Four Lane Collector with Signals		With Project Two Lane Collector with Roundabout	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
AM Peak Hour								
1. Via De La Valle / Camino Del Mar	14.7	B	14.9	B	14.9	B	14.9	B
2. Via De La Valle / Jimmy Durante Blvd	27.2	C	28.2	C	28.2	C	28.2	C
3. Via De La Valle / I-5 SB Ramps	4.3	A	4.5	A	4.5	A	4.5	A
4. Via De La Valle / I-5 NB Ramps	9.0	A	9.0	A	9.0	A	9.0	A
5. Via De La Valle / San Andres Dr	19.1	B	19.3	B	19.3	B	19.3	B
6. Coast Blvd / Camino Del Mar	19.7	C	21.6	C	21.6	C	21.6	C
7. 15th St / Stratford Ct	9.3	A	9.9	A	9.9	A	9.9	A
8. 12th St / Stratford Ct	8.6	A	8.7	A	8.7	A	8.7	A
9. 15th St / Camino Del Mar	13.4	B	15.7	B	23.0	C	14.1	B
10. 13th St / Camino Del Mar	12.9	B	16.4	C	11.8	B	15.6	C
11. 12th St / Camino Del Mar	12.2	B	13.3	B	10.8	B	18.1	C
12. 11th St / Camino Del Mar	13.1	B	17.9	C	11.6	B	15.4	C
13. 9th St / Camino Del Mar	7.3	A	8.7	A	8.7	A	13.7	B
14. 4th St / Del Mar Heights Rd / Camino Del Mar	22.4	C	32.0	C	32.0	C	32.0	C
15. Camino Del Mar / Carmel Valley Rd	30.6	C	31.6	C	31.6	C	31.6	C
16. Del Mar Heights Rd / Crest Way	5.6	A	5.7	A	5.7	A	5.7	A
17. Del Mar Heights Rd / I-5 SB Ramps	7.7	A	8.0	A	8.0	A	8.0	A
18. Del Mar Heights Rd / I-5 NB Ramps	21.6	C	22.4	C	22.4	C	22.4	C
19. Del Mar Heights Rd / High Bluff Dr	22.2	C	22.7	C	22.7	C	22.7	C
20. Del Mar Heights Rd / El Camino Real	32.4	C	32.8	C	32.8	C	32.8	C
21. 15th St / Ocean Ave	7.7	A	8.0	A	8.0	A	8.0	A

**Table 9-5B
Summary of Existing Intersection Conditions – PM Peak Hour**

Intersection	Without Project		With Project No Circulation Changes		With Project Four Lane Collector with Signals		With Project Two Lane Collector with Roundabout	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
PM Peak Hour								
1. Via De La Valle / Camino Del Mar	18.3	B	18.3	B	18.3	B	18.3	B
2. Via De La Valle / Jimmy Durante Blvd	21.6	C	22.5	C	22.5	C	22.5	C
3. Via De La Valle / I-5 SB Ramps	7.3	A	7.7	A	7.7	A	7.7	A
4. Via De La Valle / I-5 NB Ramps	9.1	A	9.2	A	9.2	A	9.2	A
5. Via De La Valle / San Andres Dr	23.9	C	24.1	C	24.1	C	24.1	C
6. Coast Blvd / Camino Del Mar	14.0	B	15.1	C	15.1	C	15.1	C
7. 15th St / Stratford Ct	10.3	B	11.3	B	11.3	B	11.3	B
8. 12th St / Stratford Ct	8.7	A	8.8	A	8.8	A	8.8	A
9. 15th St / Camino Del Mar	15.8	B	17.2	B	18.0	B	23.3	C
10. 13th St / Camino Del Mar	16.9	C	29.1	D	14.0	B	20.6	C
11. 12th St / Camino Del Mar	12.6	B	12.8	B	11.8	B	22.3	B
12. 11th St / Camino Del Mar	16.9	C	34.2	D	15.2	B	29.3	D
13. 9th St / Camino Del Mar	7.1	A	8.8	A	8.8	A	22.7	C
14. 4th St / Del Mar Heights Rd / Camino Del Mar	24.5	C	30.0	C	30.0	C	30.0	C
15. Camino Del Mar / Carmel Valley Rd	20.1	C	21.4	C	21.4	C	21.4	C
16. Del Mar Heights Rd / Crest Way	6.8	A	7.6	A	7.6	A	7.6	A
17. Del Mar Heights Rd / I-5 SB Ramps	9.6	A	10.4	B	10.4	B	10.4	B
18. Del Mar Heights Rd / I-5 NB Ramps	18.8	B	20.3	C	20.3	C	20.3	C
19. Del Mar Heights Rd / High Bluff Dr	25.3	C	25.7	C	25.7	C	25.7	C
20. Del Mar Heights Rd / El Camino Real	27.0	C	27.1	C	27.1	C	27.1	C
21. 15th St / Ocean Ave	8.3	A	8.8	A	8.8	A	8.8	A

**Table 9-6
Summary of Long Term Roadway Segment Conditions**

Roadway Segment	Without Project		With Project No Circulation Changes		With Project Four Lane Collector with Signals		With Project Two Lane Collector with Roundabout		
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	
Highway 101									
North of Lomas Santa Fe Dr	0.970	E	0.979	E	0.979	E	0.979	E	
North of Via De La Valle	0.753	D	0.766	D	0.766	D	0.766	D	
Camino Del Mar									
North of Jimmy Durante Blvd (NB)	0.812	D	0.848	E	0.848	E	0.848	E	
North of Jimmy Durante Blvd (SB)	0.852	E	0.888	E	0.888	E	0.888	E	
Jimmy Durante Blvd to 15th St (NB)	0.738	D	0.838	E	0.838	E	0.838	E	
Jimmy Durante Blvd to 15th St (SB)	0.749	D	0.849	E	0.849	E	0.849	E	
15th St to 13th St (NB)	1.379	F	1.580	F	0.817	D	0.980	E	
15th St to 13th St (SB)	1.145	F	1.346	F	0.695	D	0.835	E	
13th St to 12th St (NB)	1.379	F	1.635	F	0.845	E	1.014	F	
13th St to 12th St (SB)	1.145	F	1.401	F	0.724	D	0.869	E	
12th St to 11th St (NB)	1.379	F	1.647	F	0.851	E	1.021	F	
12th St to 11th St (SB)	1.145	F	1.412	F	0.730	D	0.876	E	
11th St to 9th St (NB)	1.379	F	1.697	F	0.877	E	1.052	F	
11th St to 9th St (SB)	1.145	F	1.462	F	0.756	D	0.907	E	
9th St to Del Mar Heights Rd (NB)	0.713	D	0.887	E	0.887	E	0.887	E	
9th St to Del Mar Heights Rd (SB)	0.591	C	0.766	D	0.766	D	0.766	D	
Del Mar Heights Rd to Carmel Valley Rd (NB)	0.433	B	0.461	B	0.461	B	0.461	B	
Del Mar Heights Rd to Carmel Valley Rd (SB)	1.000	F	1.057	F	1.057	F	1.057	F	
South of Carmel Valley Rd (NB)	0.931	E	0.958	E	0.958	E	0.958	E	
South of Carmel Valley Rd (SB)	1.068	F	1.096	F	1.096	F	1.096	F	
Lomas Santa Fe Dr									
Solana Hills Dr to I-5 SB Ramps	0.986	E	0.988	E	0.988	E	0.988	E	
Via De La Valle									
Del Mar Downs Rd to Jimmy Durante Blvd	1.352	F	1.352	F	1.352	F	1.352	F	
Jimmy Durante Blvd to I-5 SB Ramps	0.872	E	0.900	E	0.900	E	0.900	E	
East of I-5 NB Ramps	0.831	E	0.844	E	0.844	E	0.844	E	
Jimmy Durante Blvd									
Via De La Valle to San Diegito Dr	0.441	B	0.506	C	0.506	C	0.506	C	
San Dieguito Dr to Camino Del Mar	0.501	C	0.638	C	0.638	C	0.638	C	
Del Mar Heights Rd									
I-5 NB Ramps to High Bluff Drive	0.819	E	0.836	E	0.836	E	0.836	E	
I-5 SB Ramps to Mango Drive	0.729	D	0.790	D	0.790	D	0.790	D	
Camino Del Mar to Crest Way	0.612	C	0.720	D	0.720	D	0.720	D	
Carmel Valley Rd									
East of S. Camino Del Mar	0.833	D	0.847	D	0.847	D	0.847	D	
15th St									
Coast Blvd to Camino Del Mar	0.697	D	0.849	E	0.849	E	0.849	E	
Camino Del Mar to Luneta Dr	0.369	B	0.427	B	0.427	B	0.427	B	
Crest Rd									
North of Del Mar Heights Rd	0.745	Less than C	0.765	Less than C	0.765	Less than C	0.765	Less than C	
Coast Blvd									
North of 15th St	0.272	A	0.303	A	0.303	A	0.303	A	
Stratford Ct									
15th St to 13th St	0.980	Less than C	1.173	Greater than C	1.173	Greater than C	1.173	Greater than C	

Table 9-7A
Summary of Long Term Intersection Conditions – AM Peak Hour

Intersection	Without Project		With Project No Circulation Changes		With Project Four Lane Collector with Signals		With Project Two Lane Collector with Roundabout	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
AM Peak Hour								
1. Via De La Valle / Camino Del Mar	15.1	B	16.5	B	16.5	B	16.5	B
2. Via De La Valle / Jimmy Durante Blvd	36.4	D	40.6	D	40.6	D	40.6	D
3. Via De La Valle / I-5 SB Ramps	5.3	A	5.4	A	5.4	A	5.4	A
4. Via De La Valle / I-5 NB Ramps	12.6	B	12.8	B	12.8	B	12.8	B
5. Via De La Valle / San Andres Dr	23.3	C	23.3	C	23.3	C	23.3	C
6. Coast Blvd / Camino Del Mar	20.1	C	22.2	C	22.2	C	22.2	C
7. 15th St / Stratford Ct	9.4	A	10.1	B	10.1	B	10.1	B
8. 12th St / Stratford Ct	8.6	A	8.7	A	8.7	A	8.7	A
9. 15th St / Camino Del Mar	13.6	B	16.6	B	22.9	C	15.0	B
10. 13th St / Camino Del Mar	13.1	B	16.8	C	11.8	B	16.2	C
11. 12th St / Camino Del Mar	12.2	B	13.3	B	10.8	B	18.3	C
12. 11th St / Camino Del Mar	13.3	B	18.3	C	11.5	B	15.9	C
13. 9th St / Camino Del Mar	7.3	A	8.7	A	8.7	A	14.0	B
14. 4th St / Del Mar Heights Rd / Camino Del Mar	25.5	C	33.4	C	33.4	C	33.4	C
15. Camino Del Mar / Carmel Valley Rd	41.1	D	41.3	D	41.3	D	41.3	D
16. Del Mar Heights Rd / Crest Way	5.6	A	5.7	A	5.7	A	5.7	A
17. Del Mar Heights Rd / I-5 SB Ramps	7.7	A	8.0	A	8.0	A	8.0	A
18. Del Mar Heights Rd / I-5 NB Ramps	21.6	C	22.4	C	22.4	C	22.4	C
19. Del Mar Heights Rd / High Bluff Dr	21.0	C	21.4	C	21.4	C	21.4	C
20. Del Mar Heights Rd / El Camino Real	38.6	D	38.8	D	38.8	D	38.8	D
21. 15th St / Ocean Ave	7.8	A	8.0	A	8.0	A	8.0	A

Table 9-7B
Summary of Long Term Intersection Conditions – PM Peak Hour

Intersection	Without Project		With Project No Circulation Changes		With Project Four Lane Collector with Signals		With Project Two Lane Collector with Roundabout	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
PM Peak Hour								
1. Via De La Valle / Camino Del Mar	19.8	B	19.9	B	19.9	B	19.9	B
2. Via De La Valle / Jimmy Durante Blvd	27.4	C	29.3	C	29.3	C	29.3	C
3. Via De La Valle / I-5 SB Ramps	9.9	A	10.8	B	10.8	B	10.8	B
4. Via De La Valle / I-5 NB Ramps	12.4	B	12.6	B	12.6	B	12.6	B
5. Via De La Valle / San Andres Dr	31.6	C	32.6	C	32.6	C	32.6	C
6. Coast Blvd / Camino Del Mar	14.5	B	15.7	C	15.7	C	15.7	C
7. 15th St / Stratford Ct	10.5	B	11.6	B	11.6	B	11.6	B
8. 12th St / Stratford Ct	8.7	A	8.8	A	8.8	A	8.8	A
9. 15th St / Camino Del Mar	16.0	B	17.6	B	18.6	B	29.8	D
10. 13th St / Camino Del Mar	17.2	C	30.0	D	13.9	B	24.4	C
11. 12th St / Camino Del Mar	13.0	B	13.1	B	11.7	B	21.4	C
12. 11th St / Camino Del Mar	19.0	C	42.3	E	15.4	B	34.5	D
13. 9th St / Camino Del Mar	7.1	A	8.9	A	8.9	A	27.2	D
14. 4th St / Del Mar Heights Rd / Camino Del Mar	24.2	C	31.1	C	31.1	C	31.1	C
15. Camino Del Mar / Carmel Valley Rd	25.1	C	26.2	C	26.2	C	26.2	C
16. Del Mar Heights Rd / Crest Way	7.5	A	7.8	A	7.8	A	7.8	A
17. Del Mar Heights Rd / I-5 SB Ramps	9.6	A	10.4	B	10.4	B	10.4	B
18. Del Mar Heights Rd / I-5 NB Ramps	18.8	B	20.3	C	20.3	C	20.3	C
19. Del Mar Heights Rd / High Bluff Dr	25.9	C	26.3	C	26.3	C	26.3	C
20. Del Mar Heights Rd / El Camino Real	31.7	C	31.8	C	31.8	C	31.8	C
21. 15th St / Ocean Ave	8.4	A	9.0	A	9.0	A	9.0	A

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APPENDIX A

PROJECT INFORMATION

SANDAG
 Series 11 2030re
 Select Zone Plot
 TAZ 1700

Functional Classifications

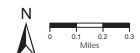
- Freeway
- Prime
- Major
- Collector
- Light Collector
- Rural Collector
- Local
- Freeway Ramp
- Local Ramp
- - - - Zone Connector

Traffic Analysis Zones

- # Selz Volumes & Percentage
- # Unadjusted ADT(x1000)

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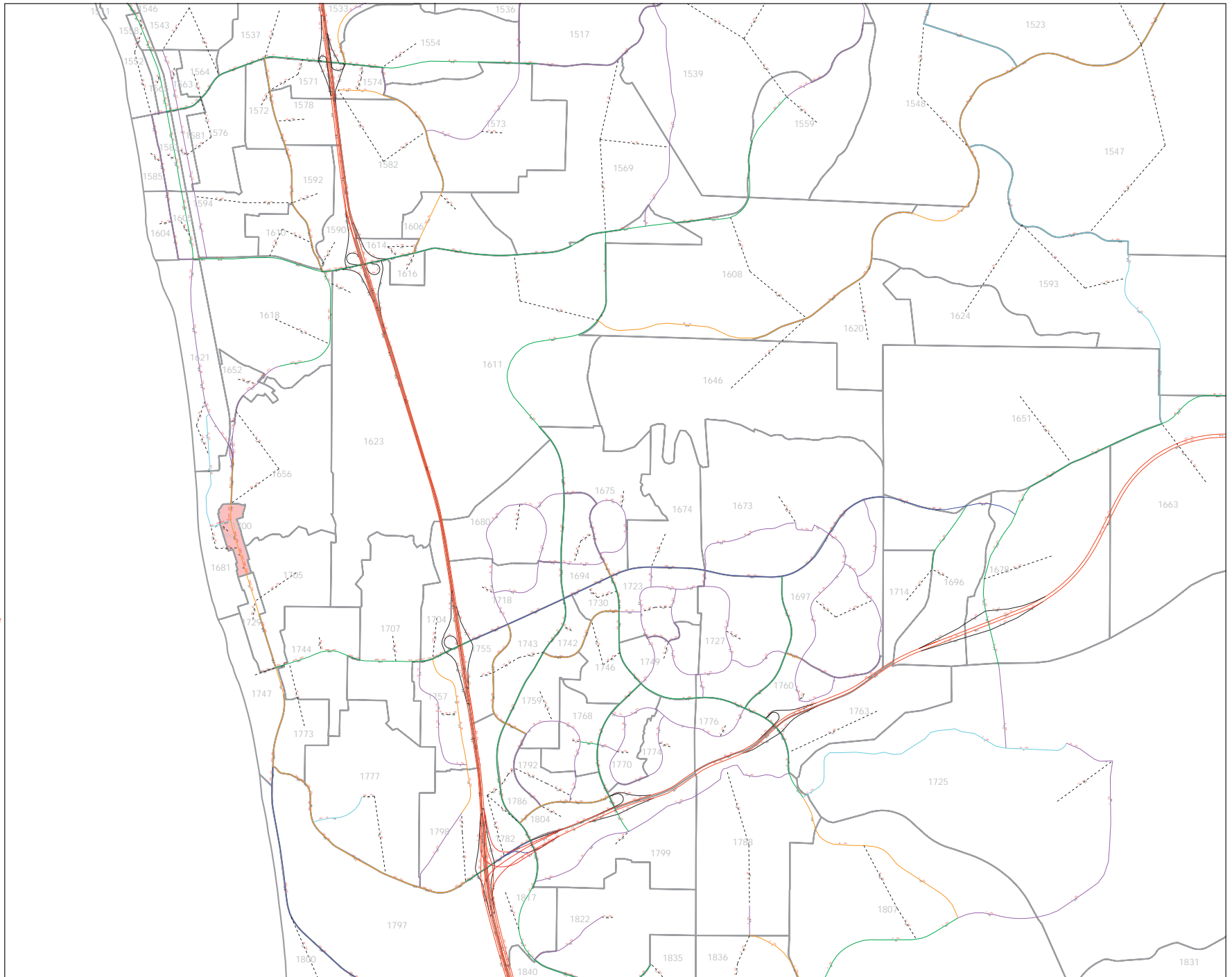
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SANDAG



Date: September 30, 2011



APPENDIX B

LEVEL OF SERVICE CONCEPTS, ANALYSIS METHODOLOGIES, STANDARDS OF SIGNIFICANCE

Roadway Segment Level of Service Definitions

LOS	V/C	Congestion/Delay	Traffic Description
(Used for surface streets, freeways, expressways and conventional highways)			
"A"	≤0.41	None	Free flow.
"B"	>0.41-0.62	None	Free to stable flow, light to moderate volumes.
"C"	>0.62-0.80	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted.
"D"	>0.80-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
"E"	>0.92-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
(Used for surface streets and conventional highways)			
"F"	>1.00	Considerable	Forced or breakdown flow. Delay measured in average travel speed (MPH). Signalized segments experience delays >60.0 seconds/vehicle.
(Used for freeways and expressways)			
"F(0)"	>1.00-1.25	Considerable 0-1 hour delay	Forced flow, heavy congestion, long queues form behind breakdown points, stop and go.
"F(1)"	>1.25-1.35	Severe 1-2 hour delay	Very heavy congestion, very long queues.
"F(2)"	>1.35-1.45	Very Severe 2-3 hour delay	Extremely heavy congestion, longer queues, more numerous breakdown points, longer stop periods.
"F(3)"	>1.45	Extremely Severe 3+ hours of delay	Gridlock

Source: Caltrans, 1992.

LEVEL OF SERVICE (LOS) DEFINITIONS

The concept of LOS is defined as a qualitative measure describing operational conditions within a traffic stream, and the motorist's and/or passengers' perception of operations. A LOS definition generally describes these conditions in terms of such factors as speed, travel time, freedom to maneuver, comfort, convenience, and safety. Levels of service for freeway segments can generally be categorized as shown in the table above.

Roadway Capacity Standards

Street Classification	Lanes	Cross Sections ¹	Level of Service ADT ²				
			A	B	C	D	E
Freeway	8 lanes		60,000	84,000	120,000	140,000	150,000
Freeway	6 lanes		45,000	63,000	60,000	70,000	80,000
Freeway	4 lanes		30,000	42,000	60,000	70,000	80,000
Expressway	6 lanes	102/122	30,000	42,000	60,000	70,000	80,000
Prime Arterial	6 lanes	102/122	25,000	35,000	50,000	55,000	60,000
Major Arterial	6 lanes	102/122	20,000	28,000	40,000	45,000	50,000
Major Arterial	4 lanes	78/98	15,000	21,000	30,000	35,000	40,000
Collector	4 lanes	72/92	10,000	14,000	20,000	25,000	30,000
Collector (no center lane (continuous left-turn lane)	4 lanes 2 lanes	64/84 50/70	5,000	7,000	10,000	13,000	15,000
Collector (no fronting property)	2 lanes	40/60	4,000	5,500	7,500	9,000	10,000
Collector (commercial- industrial fronting)	2 lanes	50/70	2,500	3,500	5,000	6,500	8,000
Collector (multi-family)	2 lanes	40/60	2,500	3,500	5,000	6,500	8,000
Sub-Collector (single- family)	2 lanes	36/56	---	---	2,200	---	---

Legend:

¹XXX/XXX = Curb to curb width (feet)/right of way width (feet): based upon the City of San Diego Street Design Manual.

²Approximate recommended ADT based upon the City of San Diego Street Design Manual.

Notes:

The volumes and the average daily level of service listed above are only intended as a general planning guideline. Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

Arterial Level of Service Definitions

LOS	Class I (45 to 35 mph)	Class II (35-30 mph)	Class III (35 to 25)	LOS Characteristic
"A"	≥35	≥30	≥25	Speeds 90% of free-flow speed, minimal stopped delay
"B"	≥28	≥24	≥19	Speeds 70% of free-flow speed, delay not bothersome
"C"	≥22	≥18	≥13	Speeds 50% of free-flow speed, longer queues, noticeable delay
"D"	≥17	≥14	≥9	Speeds 40% of free-flow, substantial delay.
"E"	≥13	≥10	≥7	Speeds 30% of free-flow, high delay.
"F"	<13	<10	<7	Speeds 25% of free-flow, high delay, extensive queuing

LEVEL OF SERVICE (LOS) DEFINITIONS

The concept of LOS is defined as a qualitative measure describing operational conditions within a traffic stream, and the motorist's and/or passengers' perception of operations. A LOS definition generally describes these conditions in terms of such factors as speed, travel time, freedom to maneuver, comfort, convenience, and safety. Levels of service for arterial segments with a range of free-flow speeds can generally be categorized as shown in the table above.

Signalized Intersection Level of Service Highway Capacity Manual Operational Analysis Method

The operational analysis method for evaluation of signalized intersections presented in the *2000 Highway Capacity Manual* (Transportation Research Board Special Report 209) defines level of service in terms of delay, or more specifically, control stopped delay per vehicle. Delay is a measure of driver and/or passenger discomfort, frustration, fuel consumption, and lost travel time.

Control Stopped Delay Per Vehicle (seconds)	Level of Service (LOS) Characteristics
<10	LOS A describes operations with very low delay. This occurs when progression is extremely favorable, and most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
>10 – 20	LOS B describes operations with generally good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
>20 – 35	LOS C describes operations with higher delays, which may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
>35 – 55	LOS D describes operations with high delay, resulting from some combination of unfavorable progression, long cycle lengths, or high volumes. The influence of congestion becomes more noticeable, and individual cycle failures are noticeable.
>55 – 80	LOS E is considered to be the limit of acceptable delay. Individual cycle failures are frequent occurrences.
>80	LOS F describes a condition of excessively high delay, considered unacceptable to most drivers. This condition often occurs when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes to such delay.

Source: Highway Capacity Manual 2000, Exhibit 16-2

MINOR STREET STOP AND ALL-WAY STOP CONTROLLED INTERSECTION LEVEL OF SERVICE HIGHWAY CAPACITY MANUAL OPERATIONAL ANALYSIS METHOD

The Highway Capacity Manual (HCM) analysis method for evaluating minor street stop intersections is based on the average total delay for each impeded movement. For all-way stop controlled intersections it is based on the average total delay for the entire intersection. As used here, total delay is defined as the total elapsed time from when a vehicle stops at the end of a queue until the vehicle departs from the stop line; this time includes the time required for the vehicle to travel from the last-in-queue to the first-in-queue position. The average total delay for any particular minor movement is a function of the service rate or capacity of the approach and the degree of saturation. The resulting delay is used to determine the level of service as shown in the following table.

Average Total Delay	Level of Service (LOS) Characteristics
0-10	<i>LOS A</i> – Little or no delay
>10 – 15	<i>LOS B</i> – Short traffic delay
>15 – 25	<i>LOS C</i> – Average traffic delay
>25 – 35	<i>LOS D</i> – Long traffic delays
>35 – 50	<i>LOS E</i> – Very long traffic delays
>50	<i>LOS F</i> – When the demand exceeds the capacity of the lane, extreme delays will be encountered and queuing may cause severe congestion to the intersection.

Source: Highway Capacity Manual 2000, Exhibit 17-22

Measure of Significant Project Impacts

Level of Service With Project	Allowable Change due to Project Impact					
	Freeways		Roadway Segments		Intersections	Ramp Metering
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec.)	Delay (min)
E, & F (or ramp meter delays above 15 min.)	0.01	1	0.02	1	2	2

HCM 2010 Roundabouts Thresholds

Level of Service Average total delay for $v/c \leq 1.0$	Average delay per vehicle in seconds (d)
	Sign Stop Control (HCM 2010 roundabouts)
A	$d \leq 10$
B	$10 < d \leq 15$
C	$15 < d \leq 25$
D	$25 < d \leq 35$
E	$35 < d \leq 50$
F	$50 < d$

Note: Average delay per vehicle in seconds (d)

v/c (demand volume / capacity) ratio, or degree of saturation: $v/c > 1.0$ represents oversaturated conditions LOS F.

APPENDIX C

TRAFFIC COUNT DATA

True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.01.HWY 101 CAMINO DEL MAR.VIA DE LA VALLE
Site Code : 00000000
Start Date : 10/27/2011
Page No : 1

Groups Printed- Vehicles

Start Time	HWY 101 Southbound				VIA DE LA VALLE Westbound				CAMINO DEL MAR Northbound				BORDER AVE Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00	61	47	0	0	22	11	17	0	1	15	12	0	0	16	5	0	207
07:15	72	78	1	0	20	18	27	0	3	20	22	0	0	34	6	0	301
07:30	94	112	1	0	18	23	37	0	1	23	25	0	0	32	8	0	374
07:45	122	129	2	0	22	26	39	0	2	22	32	0	0	30	5	0	431
Total	349	366	4	0	82	78	120	0	7	80	91	0	0	112	24	0	1313
08:00	133	152	1	0	26	30	38	0	6	36	21	0	0	19	5	0	467
08:15	123	114	7	0	24	28	44	0	3	23	19	0	1	27	9	0	422
08:30	126	107	4	0	18	24	41	0	1	37	19	0	0	22	4	0	403
08:45	108	125	5	0	21	30	46	0	6	43	16	0	0	26	7	0	433
Total	490	498	17	0	89	112	169	0	16	139	75	0	1	94	25	0	1725

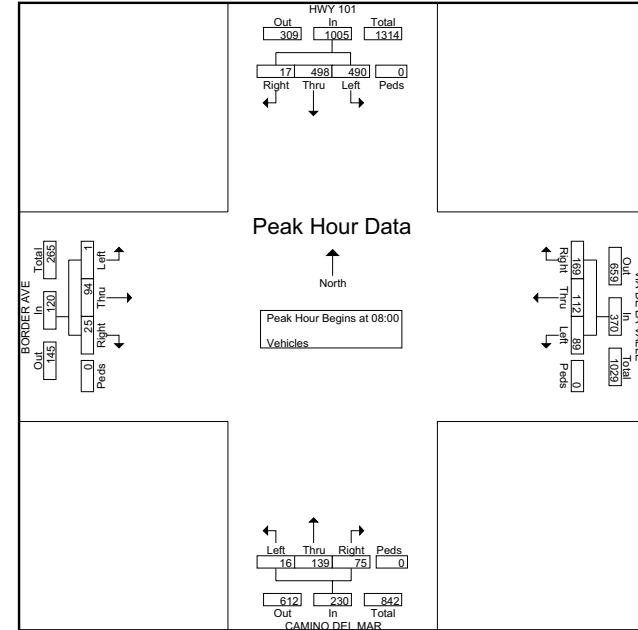
*** BREAK ***

16:00	65	96	3	0	34	16	133	0	13	154	26	0	4	32	4	0	580
16:15	74	90	2	0	30	27	102	0	7	159	16	0	1	22	5	0	535
16:30	86	70	1	0	22	17	102	0	5	162	22	0	0	28	10	0	525
16:45	57	68	1	0	38	24	84	0	4	159	19	0	1	17	5	0	477
Total	282	324	7	0	124	84	421	0	29	634	83	0	6	99	24	0	2117
17:00	58	49	3	0	24	25	66	0	6	106	34	0	1	27	9	0	408
17:15	63	61	3	0	33	25	86	0	4	74	32	0	0	27	4	0	412
17:30	70	79	2	0	48	19	101	0	2	105	18	0	0	32	10	0	486
17:45	76	74	1	0	35	18	129	0	5	122	42	0	0	21	4	0	527
Total	267	263	9	0	140	87	382	0	17	407	126	0	1	107	27	0	1833
Grand Total	1388	1451	37	0	435	361	1092	0	69	1260	375	0	8	412	100	0	6988
Apprch %	48.3	50.5	1.3	0	23	19.1	57.8	0	4	73.9	22	0	1.5	79.2	19.2	0	
Total %	19.9	20.8	0.5	0	6.2	5.2	15.6	0	1	18	5.4	0	0.1	5.9	1.4	0	

True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.01.HWY 101 CAMINO DEL MAR.VIA DE LA VALLE
Site Code : 00000000
Start Date : 10/27/2011
Page No : 2

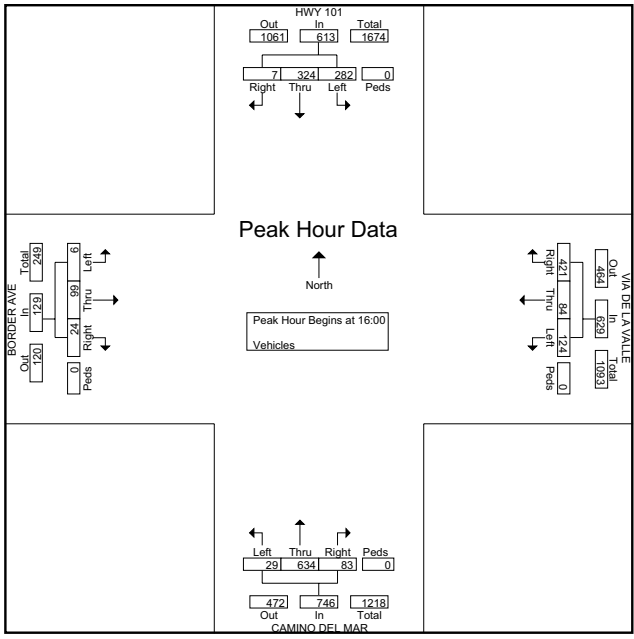
Start Time	HWY 101 Southbound					VIA DE LA VALLE Westbound					CAMINO DEL MAR Northbound					BORDER AVE Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
08:00	133	152	1	0	286	26	30	38	0	94	6	36	21	0	63	0	19	5	0	24	467
08:15	123	114	7	0	244	24	28	44	0	96	3	23	19	0	45	1	27	9	0	37	422
08:30	126	107	4	0	237	18	24	41	0	83	1	37	19	0	57	0	22	4	0	26	403
08:45	108	125	5	0	238	21	30	46	0	97	6	43	16	0	65	0	26	7	0	33	433
Total Volume	490	498	17	0	1005	89	112	169	0	370	16	139	75	0	230	1	94	25	0	120	1725
% App. Total	48.8	49.6	1.7	0		24.1	30.3	45.7	0		7	60.4	32.6	0		0.8	78.3	20.8	0		
PHF	.921	.819	.607	.000	.878	.856	.933	.918	.000	.954	.667	.808	.893	.000	.885	.250	.870	.694	.000	.811	.923



True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.01.HWY 101 CAMINO DEL MAR.VIA DE LA VALLE
Site Code : 00000000
Start Date : 10/27/2011
Page No : 3

Start Time	HWY 101 Southbound				VIA DE LA VALLE Westbound				CAMINO DEL MAR Northbound				BORDER AVE Eastbound				Int. Total				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds					
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	65	96	3	0	164	34	16	133	0	183	13	154	26	0	193	4	32	4	0	40	580
16:15	74	90	2	0	166	30	27	102	0	159	7	159	16	0	182	1	22	5	0	28	535
16:30	86	70	1	0	157	22	17	102	0	141	5	162	22	0	189	0	28	10	0	38	525
16:45	57	68	1	0	126	38	24	84	0	146	4	159	19	0	182	1	17	5	0	23	477
Total Volume	282	324	7	0	613	124	84	421	0	629	29	634	83	0	746	6	99	24	0	129	2117
% App. Total	46	52.9	1.1	0	19.7	13.4	66.9	0	3.9	85	11.1	0	4.7	76.7	18.6	0	0	0	0	0	0
PHF	.820	.844	.583	.000	.923	.816	.778	.791	.000	.859	.558	.978	.798	.000	.966	.375	.773	.600	.000	.806	.913



True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.20.EL CAMINO REAL.DEL MAR
Site Code : 00000000
Start Date : 10/18/2011
Page No : 1

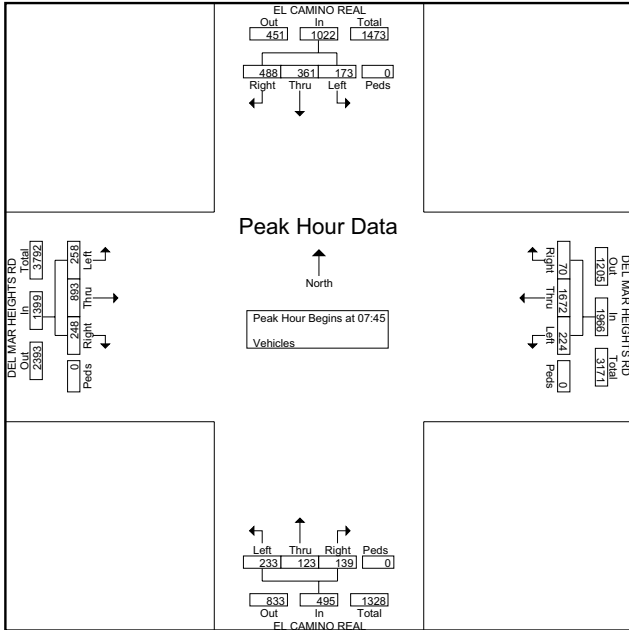
Groups Printed- Vehicles

Start Time	EL CAMINO REAL Southbound				DEL MAR HEIGHTS RD Westbound				EL CAMINO REAL Northbound				DEL MAR HEIGHTS RD Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00	24	34	54	0	9	226	12	0	32	11	18	0	41	188	17	0	666
07:15	70	67	116	0	23	240	15	0	38	15	19	0	50	231	32	0	916
07:30	31	89	100	0	37	338	16	0	72	22	23	0	46	261	49	0	1084
07:45	37	96	117	0	50	391	14	0	42	32	22	0	49	176	69	0	1095
Total	162	286	387	0	119	1195	57	0	184	80	82	0	186	856	167	0	3761
08:00	40	89	127	0	54	399	26	0	66	34	25	0	65	176	67	0	1168
08:15	61	102	124	0	60	438	16	0	61	37	45	0	69	310	60	0	1383
08:30	35	74	120	0	60	444	14	0	64	20	47	0	75	231	52	0	1236
08:45	30	63	86	0	55	328	16	0	45	25	30	0	59	173	49	0	959
Total	166	328	457	0	229	1609	72	0	236	116	147	0	268	890	228	0	4746
*** BREAK ***																	
16:00	28	45	61	0	19	197	37	0	66	54	26	0	72	264	75	0	944
16:15	35	30	43	0	24	168	30	0	77	63	30	0	81	235	86	0	902
16:30	28	46	46	0	25	157	46	0	65	72	35	0	78	283	67	0	948
16:45	32	44	57	0	29	164	31	0	70	83	53	0	124	284	79	0	1050
Total	123	165	207	0	97	686	144	0	278	272	144	0	355	1066	307	0	3844
17:00	44	40	38	0	14	197	42	0	78	90	58	0	116	347	78	0	1142
17:15	55	37	48	0	36	150	48	0	96	108	53	0	116	317	74	0	1138
17:30	34	48	51	0	25	198	48	0	79	114	64	0	107	425	91	0	1284
17:45	49	48	55	0	40	165	34	0	83	110	70	0	147	357	103	0	1261
Total	182	173	192	0	115	710	172	0	336	422	245	0	486	1446	346	0	4825
Grand Total	633	952	1243	0	560	4200	445	0	1034	890	618	0	1295	4258	1048	0	17176
Apprch %	22.4	33.7	44	0	10.8	80.7	8.5	0	40.7	35	24.3	0	19.6	64.5	15.9	0	0
Total %	3.7	5.5	7.2	0	3.3	24.5	2.6	0	6	5.2	3.6	0	7.5	24.8	6.1	0	0

True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.20.EL CAMINO REAL.DEL MAR
Site Code : 00000000
Start Date : 10/18/2011
Page No : 2

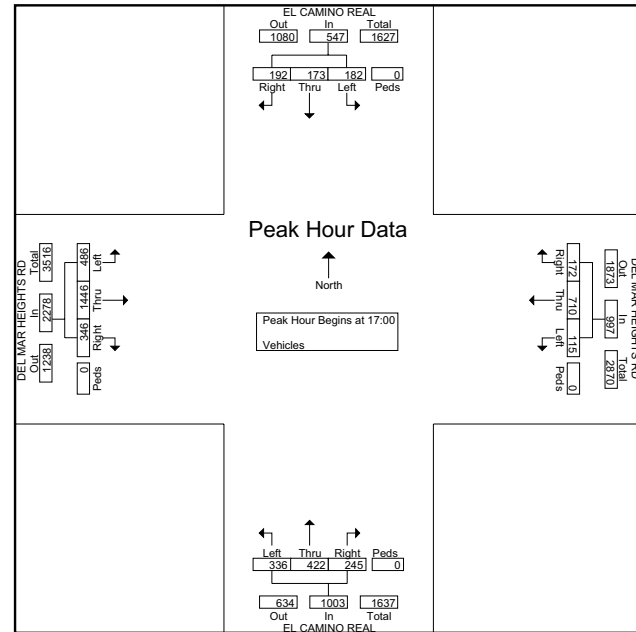
Start Time	EL CAMINO REAL Southbound					DEL MAR HEIGHTS RD Westbound					EL CAMINO REAL Northbound					DEL MAR HEIGHTS RD Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	37	96	117	0	250	50	391	14	0	455	42	32	22	0	96	49	176	69	0	294	1095
08:00	40	89	127	0	256	54	399	26	0	479	66	34	25	0	125	65	176	67	0	308	1168
08:15	61	102	124	0	287	60	438	16	0	514	61	37	45	0	143	69	310	60	0	439	1383
08:30	35	74	120	0	229	60	444	14	0	518	64	20	47	0	131	75	231	52	0	358	1236
Total Volume	173	361	488	0	1022	224	1672	70	0	1966	233	123	139	0	495	258	893	248	0	1399	4882
% App. Total	16.9	35.3	47.7	0		11.4	85	3.6	0		47.1	24.8	28.1	0		18.4	63.8	17.7	0		
PHF	.709	.885	.961	.000	.890	.933	.941	.673	.000	.949	.883	.831	.739	.000	.865	.860	.720	.899	.000	.797	.883



True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.20.EL CAMINO REAL.DEL MAR
Site Code : 00000000
Start Date : 10/18/2011
Page No : 3

Start Time	EL CAMINO REAL Southbound					DEL MAR HEIGHTS RD Westbound					EL CAMINO REAL Northbound					DEL MAR HEIGHTS RD Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	44	40	38	0	122	14	197	42	0	253	78	90	58	0	226	116	347	78	0	541	1142
17:15	55	37	48	0	140	36	150	48	0	234	96	108	53	0	257	116	317	74	0	507	1138
17:30	34	48	51	0	133	25	198	48	0	271	79	114	64	0	257	107	425	91	0	623	1284
17:45	49	48	55	0	152	40	165	34	0	239	83	110	70	0	263	147	357	103	0	607	1261
Total Volume	182	173	192	0	547	115	710	172	0	997	336	422	245	0	1003	486	1446	346	0	2278	4825
% App. Total	33.3	31.6	35.1	0		11.5	71.2	17.3	0		33.5	42.1	24.4	0		21.3	63.5	15.2	0		
PHF	.827	.901	.873	.000	.900	.719	.896	.896	.000	.920	.875	.925	.875	.000	.953	.827	.851	.840	.000	.914	.939



True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.19.HIGH BLUFF DR.DEL MAR HEIGHTS RD
Site Code : 00000000
Start Date : 10/18/2011
Page No : 1

Groups Printed- Vehicles

Start Time	HIGH BLUFF DR Southbound				DEL MAR HEIGHTS RD Westbound				HIGH BLUFF DR Northbound				DEL MAR HEIGHTS RD Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00	3	4	47	0	10	230	2	0	27	5	1	0	9	234	87	0	659
07:15	6	6	42	0	9	373	10	0	26	0	2	0	12	417	126	0	1029
07:30	11	12	77	0	26	520	3	0	47	2	0	0	21	328	164	0	1211
07:45	7	8	69	0	27	461	8	0	51	1	0	0	25	353	203	0	1213
Total	27	30	235	0	72	1584	23	0	151	8	3	0	67	1332	580	0	4112
08:00	19	13	70	0	17	458	22	0	41	6	3	0	20	244	207	0	1120
08:15	47	9	121	0	41	460	37	0	37	3	2	0	24	239	211	0	1231
08:30	24	14	101	0	31	488	6	0	48	1	3	0	21	213	198	0	1148
08:45	6	9	66	0	37	361	5	0	44	1	2	0	16	224	197	0	968
Total	96	45	358	0	126	1767	70	0	170	11	10	0	81	920	813	0	4467

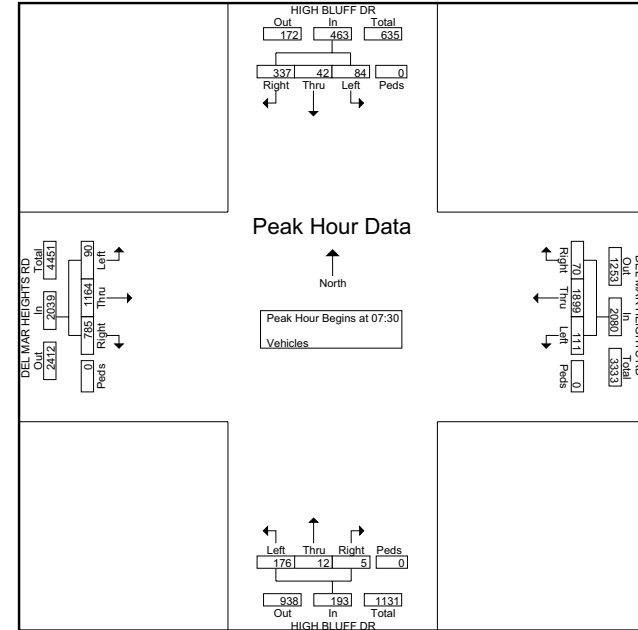
*** BREAK ***

16:00	11	7	32	0	7	316	14	0	110	11	18	0	46	356	50	0	978
16:15	11	6	34	0	4	277	16	0	122	15	11	0	53	371	57	0	977
16:30	8	1	28	0	6	326	12	0	128	20	27	0	62	445	48	0	1111
16:45	14	9	35	0	3	237	12	0	141	22	32	0	45	405	44	0	999
Total	44	23	129	0	20	1156	54	0	501	68	88	0	206	1577	199	0	4065
17:00	9	7	49	0	6	266	16	0	168	18	62	0	46	456	53	0	1156
17:15	11	12	38	0	4	299	15	0	165	35	41	0	47	403	51	0	1121
17:30	16	13	41	0	4	320	17	0	157	17	37	0	80	468	57	0	1227
17:45	16	9	30	0	6	233	11	0	138	18	30	0	67	456	54	0	1068
Total	52	41	158	0	20	1118	59	0	628	88	170	0	240	1783	215	0	4572
Grand Total	219	139	880	0	238	5625	206	0	1450	175	271	0	594	5612	1807	0	17216
Apprch %	17.7	11.2	71.1	0	3.9	92.7	3.4	0	76.5	9.2	14.3	0	7.4	70	22.6	0	
Total %	1.3	0.8	5.1	0	1.4	32.7	1.2	0	8.4	1	1.6	0	3.5	32.6	10.5	0	

True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.19.HIGH BLUFF DR.DEL MAR HEIGHTS RD
Site Code : 00000000
Start Date : 10/18/2011
Page No : 2

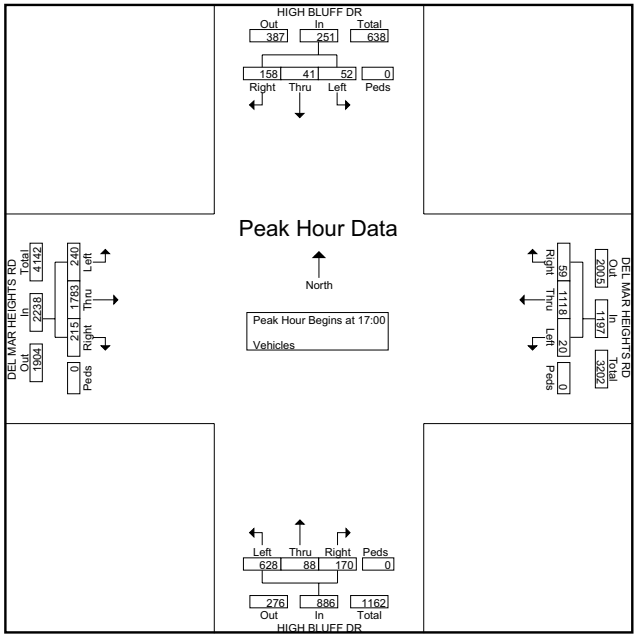
Start Time	HIGH BLUFF DR Southbound					DEL MAR HEIGHTS RD Westbound					HIGH BLUFF DR Northbound					DEL MAR HEIGHTS RD Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	11	12	77	0	100	26	520	3	0	549	47	2	0	0	49	21	328	164	0	513	1211
07:45	7	8	69	0	84	27	461	8	0	496	51	1	0	0	52	25	353	203	0	581	1213
08:00	19	13	70	0	102	17	458	22	0	497	41	6	3	0	50	20	244	207	0	471	1120
08:15	47	9	121	0	177	41	460	37	0	538	37	3	2	0	42	24	239	211	0	474	1231
Total Volume	84	42	337	0	463	111	1899	70	0	2080	176	12	5	0	193	90	1164	785	0	2039	4775
% App. Total	18.1	9.1	72.8	0		5.3	91.3	3.4	0		91.2	6.2	2.6	0		4.4	57.1	38.5	0		
PHF	.447	.808	.696	.000	.654	.677	.913	.473	.000	.947	.863	.500	.417	.000	.928	.900	.824	.930	.000	.877	.970



True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.19.HIGH BLUFF DR.DEL MAR HEIGHTS RD
Site Code : 00000000
Start Date : 10/18/2011
Page No : 3

Start Time	HIGH BLUFF DR Southbound				DEL MAR HEIGHTS RD Westbound				HIGH BLUFF DR Northbound				DEL MAR HEIGHTS RD Eastbound				Int. Total				
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left		Thru	Right	Peds	App. Total
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	9	7	49	0	65	6	266	16	0	288	168	18	62	0	248	46	456	53	0	555	1156
17:15	11	12	38	0	61	4	299	15	0	318	165	35	41	0	241	47	403	51	0	501	1121
17:30	16	13	41	0	70	4	320	17	0	341	157	17	37	0	211	80	468	57	0	605	1227
17:45	16	9	30	0	55	6	233	11	0	250	138	18	30	0	186	67	456	54	0	577	1068
Total Volume	52	41	158	0	251	20	1118	59	0	1197	628	88	170	0	886	240	1783	215	0	2238	4572
% App. Total	20.7	16.3	62.9	0		1.7	93.4	4.9	0		70.9	9.9	19.2	0		10.7	79.7	9.6	0		
PHF	.813	.788	.806	.000	.896	.833	.873	.868	.000	.878	.935	.629	.685	.000	.893	.750	.952	.943	.000	.925	.932



True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.18.I-5 NB RAMP. DEL MAR HEIGHTS RD
Site Code : 00000000
Start Date : 10/20/2011
Page No : 1

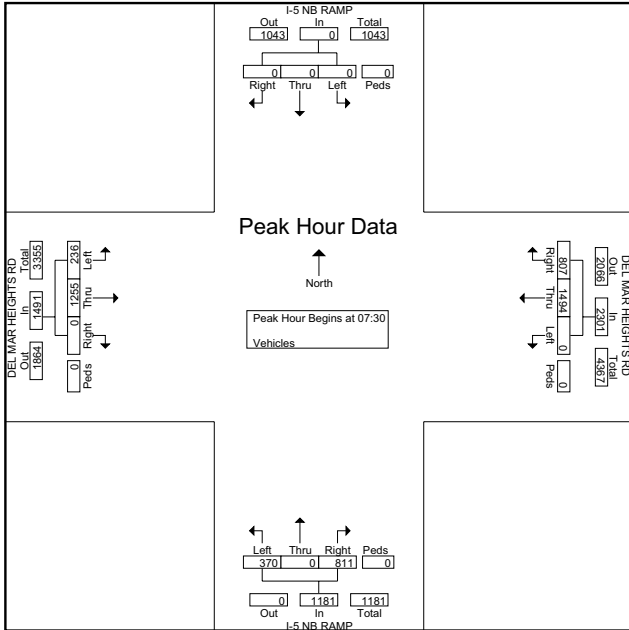
Groups Printed- Vehicles

Start Time	I-5 NB RAMP Southbound				DEL MAR HEIGHTS RD Westbound				I-5 NB RAMP Northbound				DEL MAR HEIGHTS RD Eastbound				Int. Total				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds					
07:00	0	0	0	0	0	178	136	0	54	0	116	0	54	243	0	0	781				
07:15	0	0	0	0	0	242	168	0	98	0	166	0	51	385	0	0	1110				
07:30	0	0	0	0	0	375	187	0	83	0	157	0	50	379	0	0	1231				
07:45	0	0	0	0	0	365	201	0	104	0	212	0	71	350	0	0	1303				
Total	0	0	0	0	0	1160	692	0	339	0	651	0	226	1357	0	0	4425				
08:00	0	0	0	0	0	378	207	0	81	0	189	0	62	290	0	0	1207				
08:15	0	0	0	0	0	376	212	0	102	0	253	0	53	236	0	0	1232				
08:30	0	0	0	0	0	424	199	0	77	0	196	0	58	215	0	0	1169				
08:45	0	0	0	0	0	305	196	0	111	0	196	0	53	230	0	0	1091				
Total	0	0	0	0	0	1483	814	0	371	0	834	0	226	971	0	0	4699				
*** BREAK ***																					
16:00	0	0	0	0	0	200	171	0	111	0	175	0	56	245	0	0	958				
16:15	0	0	0	0	0	192	167	0	141	0	191	0	59	320	0	0	1070				
16:30	0	0	0	0	0	192	181	0	126	0	213	0	67	326	0	0	1105				
16:45	0	0	0	0	0	215	135	0	136	0	163	0	62	356	0	0	1067				
Total	0	0	0	0	0	799	654	0	514	0	742	0	244	1247	0	0	4200				
17:00	0	0	0	0	0	262	125	0	124	0	147	0	42	377	0	0	1077				
17:15	0	0	0	0	0	275	155	0	127	0	124	0	49	389	0	0	1119				
17:30	0	0	0	0	0	238	161	0	148	0	151	0	45	405	0	0	1148				
17:45	0	0	0	0	0	254	147	0	142	0	180	0	52	384	0	0	1159				
Total	0	0	0	0	0	1029	588	0	541	0	602	0	188	1555	0	0	4503				
Grand Total	0	0	0	0	0	4471	2748	0	1765	0	2829	0	884	5130	0	0	17827				
Approch %	0	0	0	0	0	61.9	38.1	0	38.4	0	61.6	0	14.7	85.3	0	0					
Total %	0	0	0	0	0	25.1	15.4	0	9.9	0	15.9	0	5	28.8	0	0					

True Count
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San Diego, CA 92120

File Name : 11105.18.I-5 NB RAMP. DEL MAR HEIGHTS RD
Site Code : 00000000
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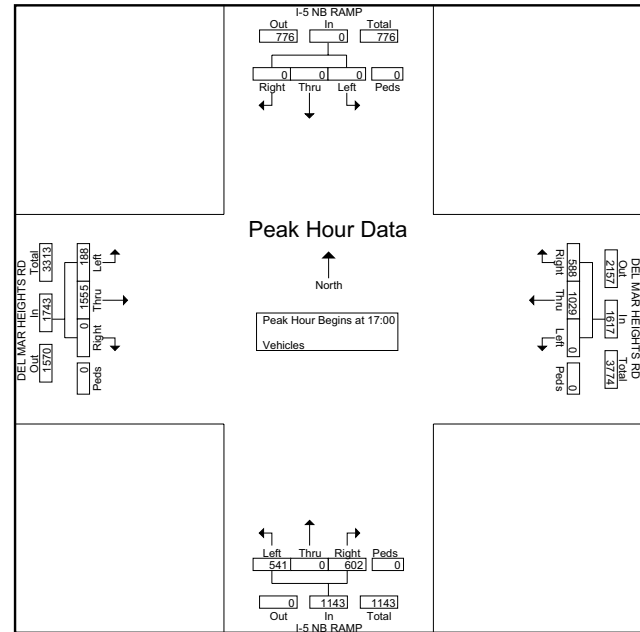
Start Time	I-5 NB RAMP Southbound					DEL MAR HEIGHTS RD Westbound					I-5 NB RAMP Northbound					DEL MAR HEIGHTS RD Eastbound					Int. Total	
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total		
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 07:30																						
07:30	0	0	0	0	0	0	375	187	0	562	83	0	157	0	240	50	379	0	0	429	1231	
07:45	0	0	0	0	0	0	365	201	0	566	104	0	212	0	316	71	350	0	0	421	1303	
08:00	0	0	0	0	0	0	378	207	0	585	81	0	189	0	270	62	290	0	0	352	1207	
08:15	0	0	0	0	0	0	376	212	0	588	102	0	253	0	355	53	236	0	0	289	1232	
Total Volume	0	0	0	0	0	0	1494	807	0	2301	370	0	811	0	1181	236	1255	0	0	1491	4973	
% App. Total	0	0	0	0	0	0	64.9	35.1	0	31.3	0	68.7	0	15.8	84.2	0	0	0	0	10.8	89.2	0
PHF	.000	.000	.000	.000	.000	.000	.988	.952	.000	.978	.889	.000	.801	.000	.832	.831	.828	.000	.000	.869	.954	



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File Name : 11105.18.I-5 NB RAMP. DEL MAR HEIGHTS RD
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Start Time	I-5 NB RAMP Southbound					DEL MAR HEIGHTS RD Westbound					I-5 NB RAMP Northbound					DEL MAR HEIGHTS RD Eastbound					Int. Total	
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total		
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 17:00																						
17:00	0	0	0	0	0	0	262	125	0	387	124	0	147	0	271	42	377	0	0	419	1077	
17:15	0	0	0	0	0	0	275	155	0	430	127	0	124	0	251	49	389	0	0	438	1119	
17:30	0	0	0	0	0	0	238	161	0	399	148	0	151	0	299	45	405	0	0	450	1148	
17:45	0	0	0	0	0	0	254	147	0	401	142	0	180	0	322	52	384	0	0	436	1159	
Total Volume	0	0	0	0	0	0	1029	588	0	1617	541	0	602	0	1143	188	1555	0	0	1743	4503	
% App. Total	0	0	0	0	0	0	63.6	36.4	0	47.3	0	52.7	0	10.8	89.2	0	0	0	0	10.8	89.2	0
PHF	.000	.000	.000	.000	.000	.000	.935	.913	.000	.940	.914	.000	.836	.000	.887	.904	.960	.000	.000	.968	.971	



True Count
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Groups Printed- Vehicles

Start Time	I-5 SB RAMP Southbound				DEL MAR HEIGHTS RD Westbound				I-5 SB RAMP Northbound				DEL MAR HEIGHTS RD Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00	160	0	52	0	0	112	125	0	0	0	0	0	0	99	105	0	653
07:15	227	0	73	0	0	185	164	0	0	0	0	0	0	178	108	0	935
07:30	232	0	84	0	0	231	252	0	0	0	0	0	0	164	158	0	1121
07:45	271	0	90	0	0	248	220	0	0	0	0	0	0	187	194	0	1210
Total	890	0	299	0	0	776	761	0	0	0	0	0	0	628	565	0	3919
08:00	153	0	57	0	0	237	232	0	0	0	0	0	0	174	182	0	1035
08:15	159	0	66	0	0	220	261	0	0	0	0	0	0	117	164	0	987
08:30	128	0	72	0	0	228	273	0	0	0	0	0	0	144	149	0	994
08:45	172	0	77	0	0	202	215	0	0	0	0	0	0	145	159	0	970
Total	612	0	272	0	0	887	981	0	0	0	0	0	0	580	654	0	3986

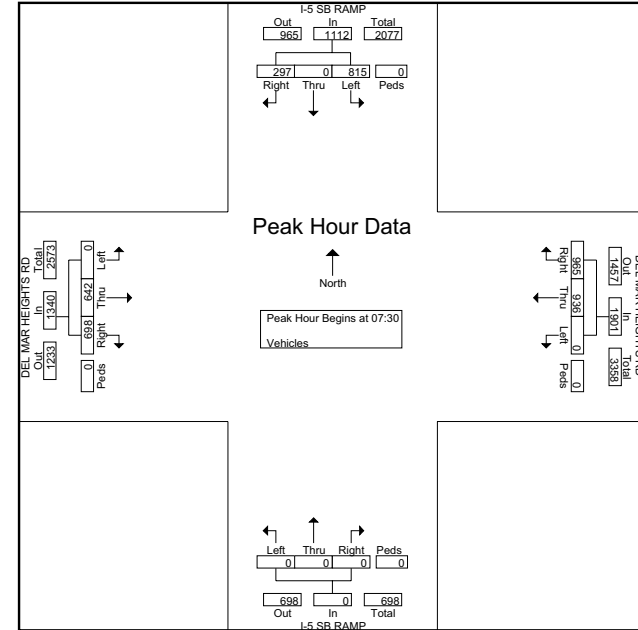
*** BREAK ***

16:00	164	0	66	0	0	190	145	0	0	0	0	0	0	200	119	0	884
16:15	152	0	63	0	0	198	114	0	0	0	0	0	0	186	91	0	804
16:30	193	0	49	0	0	225	129	0	0	0	0	0	0	207	108	0	911
16:45	199	0	68	0	0	211	151	0	0	0	0	0	0	189	102	0	920
Total	708	0	246	0	0	824	539	0	0	0	0	0	0	782	420	0	3519
17:00	220	0	53	0	0	242	141	0	0	0	0	0	0	209	125	0	990
17:15	235	0	62	0	0	216	125	0	0	0	0	0	0	215	100	0	953
17:30	232	0	76	0	0	259	138	0	0	0	0	0	0	225	75	0	1005
17:45	194	0	68	0	0	255	154	0	0	0	0	0	0	177	74	0	922
Total	881	0	259	0	0	972	558	0	0	0	0	0	0	826	374	0	3870
Grand Total	3091	0	1076	0	0	3459	2839	0	0	0	0	0	0	2816	2013	0	15294
Apprch %	74.2	0	25.8	0	0	54.9	45.1	0	0	0	0	0	0	58.3	41.7	0	
Total %	20.2	0	7	0	0	22.6	18.6	0	0	0	0	0	0	18.4	13.2	0	

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File Name : 11105.17.I-5 SB RAMPS.DEL MAR HEIGHTS RD
Site Code : 00000000
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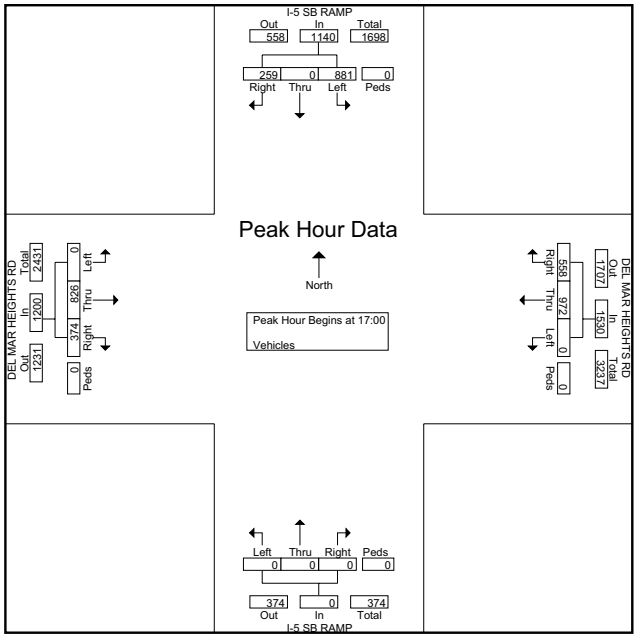
Start Time	I-5 SB RAMP Southbound					DEL MAR HEIGHTS RD Westbound					I-5 SB RAMP Northbound					DEL MAR HEIGHTS RD Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	232	0	84	0	316	0	231	252	0	483	0	0	0	0	0	0	164	158	0	322	1121
07:45	271	0	90	0	361	0	248	220	0	468	0	0	0	0	0	0	187	194	0	381	1210
08:00	153	0	57	0	210	0	237	232	0	469	0	0	0	0	0	0	174	182	0	356	1035
08:15	159	0	66	0	225	0	220	261	0	481	0	0	0	0	0	0	117	164	0	281	987
Total Volume	815	0	297	0	1112	0	936	965	0	1901	0	0	0	0	0	0	642	698	0	1340	4353
% App. Total	73.3	0	26.7	0		0	49.2	50.8	0		0	0	0	0	0	0	47.9	52.1	0		
PHF	.752	.000	.825	.000	.770	.000	.944	.924	.000	.984	.000	.000	.000	.000	.000	.000	.858	.899	.000	.879	.899



True Count
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File Name : 11105.17.I-5 SB RAMPS.DEL MAR HEIGHTS RD
Site Code : 00000000
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Start Time	I-5 SB RAMP Southbound				DEL MAR HEIGHTS RD Westbound				I-5 SB RAMP Northbound				DEL MAR HEIGHTS RD Eastbound				Int. Total			
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total					
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																				
Peak Hour for Entire Intersection Begins at 17:00																				
17:00	220	0	53	0	273	0	242	141	0	383	0	0	0	0	0	209	125	0	334	990
17:15	235	0	62	0	297	0	216	125	0	341	0	0	0	0	0	215	100	0	315	953
17:30	232	0	76	0	308	0	259	138	0	397	0	0	0	0	0	225	75	0	300	1005
17:45	194	0	68	0	262	0	255	154	0	409	0	0	0	0	0	177	74	0	251	922
Total Volume	881	0	259	0	1140	0	972	558	0	1530	0	0	0	0	0	826	374	0	1200	3870
% App. Total	77.3	0	22.7	0		0	63.5	36.5	0		0	0	0	0	0	68.8	31.2	0		
PHF	.937	.000	.852	.000	.925	.000	.938	.906	.000	.935	.000	.000	.000	.000	.000	.918	.748	.000	.898	.963



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File Name : 11105.16.DEL MAR HEIGHTS RD.CREST WAY
Site Code : 00000000
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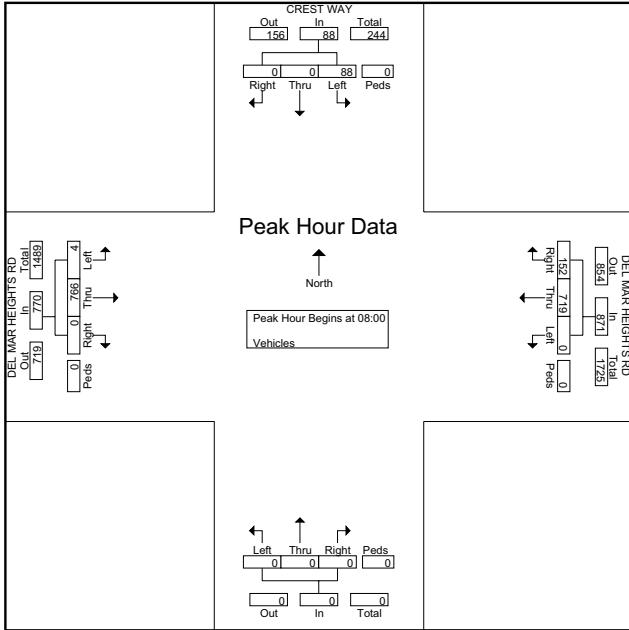
Groups Printed- Vehicles

Start Time	CREST WAY Southbound				DEL MAR HEIGHTS RD Westbound				DEL MAR HEIGHTS RD Northbound				DEL MAR HEIGHTS RD Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00	25	0	1	0	0	127	25	0	0	0	0	0	2	160	0	0	340
07:15	30	0	1	0	0	169	36	0	0	0	0	0	5	173	0	0	414
07:30	32	0	0	0	0	153	36	0	0	0	0	0	0	186	0	0	407
07:45	16	0	1	0	0	159	41	0	0	0	0	0	1	192	0	0	410
Total	103	0	3	0	0	608	138	0	0	0	0	0	8	711	0	0	1571
08:00	25	0	0	0	0	150	39	0	0	0	0	0	1	220	0	0	435
08:15	26	0	0	0	0	187	45	0	0	0	0	0	3	184	0	0	445
08:30	19	0	0	0	0	182	36	0	0	0	0	0	0	183	0	0	420
08:45	18	0	0	0	0	200	32	0	0	0	0	0	0	179	0	0	429
Total	88	0	0	0	0	719	152	0	0	0	0	0	4	766	0	0	1729
*** BREAK ***																	
16:00	16	0	1	0	0	100	14	0	0	0	0	0	0	60	0	0	191
16:15	43	0	1	0	0	142	21	0	0	0	0	0	0	108	0	0	315
16:30	49	0	0	0	0	165	18	0	0	0	0	0	1	139	0	0	372
16:45	42	0	2	0	0	210	15	0	0	0	0	0	2	165	0	0	436
Total	150	0	4	0	0	617	68	0	0	0	0	0	3	472	0	0	1314
17:00	35	0	0	0	0	197	30	0	0	0	0	0	1	105	0	0	368
17:15	26	0	0	0	0	225	21	0	0	0	0	0	0	112	0	0	384
17:30	33	0	1	0	0	203	13	0	0	0	0	0	0	125	0	0	375
17:45	25	0	1	0	0	200	10	0	0	0	0	0	3	124	0	0	363
Total	119	0	2	0	0	825	74	0	0	0	0	0	4	466	0	0	1490
Grand Total	460	0	9	0	0	2769	432	0	0	0	0	0	19	2415	0	0	6104
Approch %	98.1	0	1.9	0	0	86.5	13.5	0	0	0	0	0	0.8	99.2	0	0	
Total %	7.5	0	0.1	0	0	45.4	7.1	0	0	0	0	0	0.3	39.6	0	0	

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4401 Twain Ave, Suite 27
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File Name : 11105.16.DEL MAR HEIGHTS RD.CREST WAY
Site Code : 00000000
Start Date : 10/27/2011
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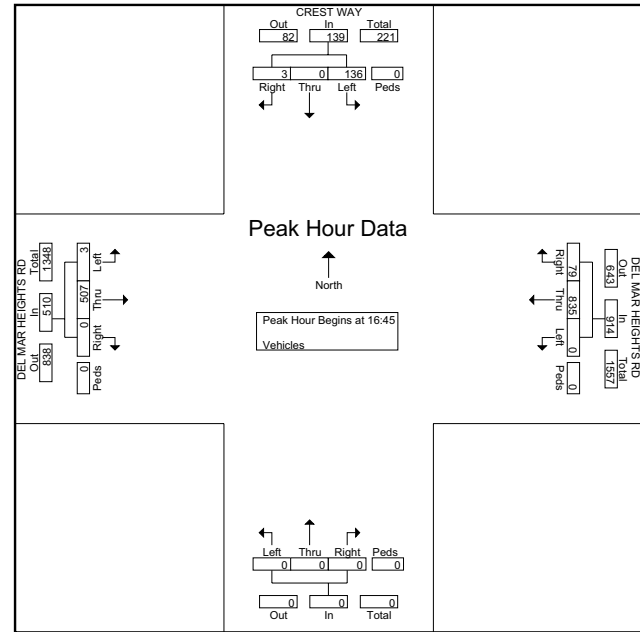
Start Time	CREST WAY Southbound					DEL MAR HEIGHTS RD Westbound					Northbound					DEL MAR HEIGHTS RD Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	25	0	0	0	25	0	150	39	0	189	0	0	0	0	0	1	220	0	0	221	435
08:15	26	0	0	0	26	0	187	45	0	232	0	0	0	0	0	3	184	0	0	187	445
08:30	19	0	0	0	19	0	182	36	0	218	0	0	0	0	0	0	183	0	0	183	420
08:45	18	0	0	0	18	0	200	32	0	232	0	0	0	0	0	0	179	0	0	179	429
Total Volume	88	0	0	0	88	0	719	152	0	871	0	0	0	0	0	4	766	0	0	770	1729
% App. Total	100	0	0	0		0	82.5	17.5	0		0	0	0	0	0	0.5	99.5	0	0		
PHF	.846	.000	.000	.000	.846	.000	.899	.844	.000	.939	.000	.000	.000	.000	.000	.333	.870	.000	.000	.871	.971



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File Name : 11105.16.DEL MAR HEIGHTS RD.CREST WAY
Site Code : 00000000
Start Date : 10/27/2011
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Start Time	CREST WAY Southbound					DEL MAR HEIGHTS RD Westbound					Northbound					DEL MAR HEIGHTS RD Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	42	0	2	0	44	0	210	15	0	225	0	0	0	0	0	2	165	0	0	167	436
17:00	35	0	0	0	35	0	197	30	0	227	0	0	0	0	0	1	105	0	0	106	368
17:15	26	0	0	0	26	0	225	21	0	246	0	0	0	0	0	0	112	0	0	112	384
17:30	33	0	1	0	34	0	203	13	0	216	0	0	0	0	0	0	125	0	0	125	375
Total Volume	136	0	3	0	139	0	835	79	0	914	0	0	0	0	0	3	507	0	0	510	1563
% App. Total	97.8	0	2.2	0		0	91.4	8.6	0		0	0	0	0	0	0.6	99.4	0	0		
PHF	.810	.000	.375	.000	.790	.000	.928	.658	.000	.929	.000	.000	.000	.000	.000	.375	.768	.000	.000	.763	.896



True Count
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File Name : 11105.15.CAMINO DEL MAR.CARMEL VALLEY RD
Site Code : 00000000
Start Date : 10/18/2011
Page No : 1

Groups Printed- Vehicles

Start Time	CAMINO DEL MAR Southbound				CARMEL VALLEY RD Westbound				CAMINO DEL MAR Northbound				Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00	13	70	0	0	64	0	22	0	0	12	6	0	0	0	0	0	187
07:15	32	135	0	0	81	0	17	0	0	18	10	0	0	0	0	0	293
07:30	18	160	0	0	110	0	24	0	0	25	10	0	0	0	0	0	347
07:45	37	213	0	0	128	0	31	0	0	23	8	0	0	0	0	0	440
Total	100	578	0	0	383	0	94	0	0	78	34	0	0	0	0	0	1267
08:00	42	212	0	0	135	0	15	0	0	26	15	0	0	0	0	0	445
08:15	46	185	0	0	152	0	15	0	0	24	18	0	0	0	0	0	440
08:30	47	207	0	0	140	0	21	0	0	26	14	0	0	0	0	0	455
08:45	43	224	0	0	143	0	17	0	0	28	3	0	0	0	0	0	458
Total	178	828	0	0	570	0	68	0	0	104	50	0	0	0	0	0	1798

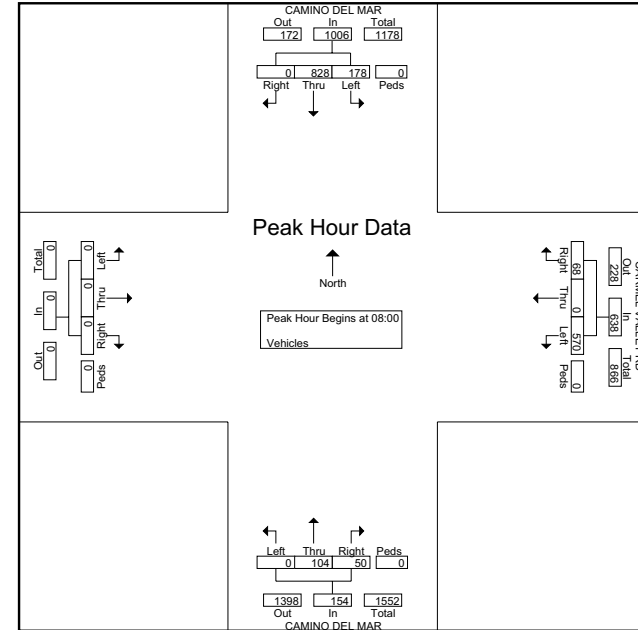
*** BREAK ***

16:00	43	55	0	0	29	0	43	0	0	121	64	0	0	0	0	0	355
16:15	27	46	0	0	34	0	41	0	0	160	66	0	0	0	0	0	374
16:30	43	46	0	0	27	0	31	0	0	193	72	0	0	0	0	0	412
16:45	28	58	0	0	27	0	30	0	0	214	83	0	0	0	0	0	440
Total	141	205	0	0	117	0	145	0	0	688	285	0	0	0	0	0	1581
17:00	32	50	0	0	35	0	32	0	0	211	81	0	0	0	0	0	441
17:15	42	67	0	0	35	0	36	0	0	214	81	0	0	0	0	0	475
17:30	33	39	0	0	35	0	43	0	0	220	75	0	0	0	0	0	445
17:45	33	46	0	0	36	0	39	0	0	164	42	0	0	0	0	0	360
Total	140	202	0	0	141	0	150	0	0	809	279	0	0	0	0	0	1721
Grand Total	559	1813	0	0	1211	0	457	0	0	1679	648	0	0	0	0	0	6367
Apprch %	23.6	76.4	0	0	72.6	0	27.4	0	0	72.2	27.8	0	0	0	0	0	
Total %	8.8	28.5	0	0	19	0	7.2	0	0	26.4	10.2	0	0	0	0	0	

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File Name : 11105.15.CAMINO DEL MAR.CARMEL VALLEY RD
Site Code : 00000000
Start Date : 10/18/2011
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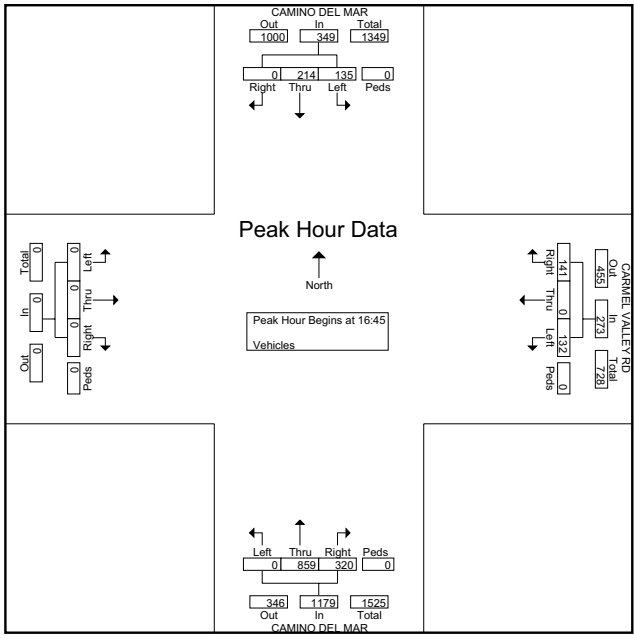
Start Time	CAMINO DEL MAR Southbound					CARMEL VALLEY RD Westbound					CAMINO DEL MAR Northbound					Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
08:00	42	212	0	0	254	135	0	15	0	150	0	26	15	0	41	0	0	0	0	0	445
08:15	46	185	0	0	231	152	0	15	0	167	0	24	18	0	42	0	0	0	0	0	440
08:30	47	207	0	0	254	140	0	21	0	161	0	26	14	0	40	0	0	0	0	0	455
08:45	43	224	0	0	267	143	0	17	0	160	0	28	3	0	31	0	0	0	0	0	458
Total Volume	178	828	0	0	1006	570	0	68	0	638	0	104	50	0	154	0	0	0	0	0	1798
% App. Total	17.7	82.3	0	0		89.3	0	10.7	0		0	67.5	32.5	0		0	0	0	0	0	
PHF	.947	.924	.000	.000	.942	.938	.000	.810	.000	.955	.000	.929	.694	.000	.917	.000	.000	.000	.000	.000	.981



True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.15.CAMINO DEL MAR.CARMEL VALLEY RD
Site Code : 00000000
Start Date : 10/18/2011
Page No : 3

Start Time	CAMINO DEL MAR Southbound				CARMEL VALLEY RD Westbound				CAMINO DEL MAR Northbound				Eastbound				Int. Total				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds					
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	28	58	0	0	86	27	0	30	0	57	0	214	83	0	297	0	0	0	0	0	440
17:00	32	50	0	0	82	35	0	32	0	67	0	211	81	0	292	0	0	0	0	0	441
17:15	42	67	0	0	109	35	0	36	0	71	0	214	81	0	295	0	0	0	0	0	475
17:30	33	39	0	0	72	35	0	43	0	78	0	220	75	0	295	0	0	0	0	0	445
Total Volume	135	214	0	0	349	132	0	141	0	273	0	859	320	0	1179	0	0	0	0	0	1801
% App. Total	38.7	61.3	0	0		48.4	0	51.6	0		0	72.9	27.1	0		0	0	0	0	0	
PHF	.804	.799	.000	.000	.800	.943	.000	.820	.000	.875	.000	.976	.964	.000	.992	.000	.000	.000	.000	.000	.948



True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.14.CAMINO DEL MAR.4TH ST
Site Code : 00000000
Start Date : 11/1/2011
Page No : 1

Groups Printed- Vehicles

Start Time	CAMINO DEL MAR Southbound				DEL MAR HEIGHTS RD Westbound				CAMINO DEL MAR Northbound				4TH ST Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00	38	58	2	0	45	12	52	0	1	22	9	0	1	19	7	0	266
07:15	67	82	2	0	76	4	64	0	3	26	11	0	3	29	5	0	372
07:30	93	129	1	0	82	6	90	0	1	20	22	0	1	40	6	0	491
07:45	70	114	2	0	125	19	78	0	4	36	22	0	0	22	7	0	499
Total	268	383	7	0	328	41	284	0	9	104	64	0	5	110	25	0	1628
08:00	72	131	1	0	104	18	80	0	4	33	8	0	2	20	4	0	477
08:15	77	132	1	0	126	18	86	0	7	32	12	0	3	26	15	0	535
08:30	86	142	1	0	139	19	98	0	5	52	19	0	4	25	11	0	601
08:45	92	127	4	0	124	9	135	0	8	30	25	0	3	30	7	0	594
Total	327	532	7	0	493	64	399	0	24	147	64	0	12	101	37	0	2207

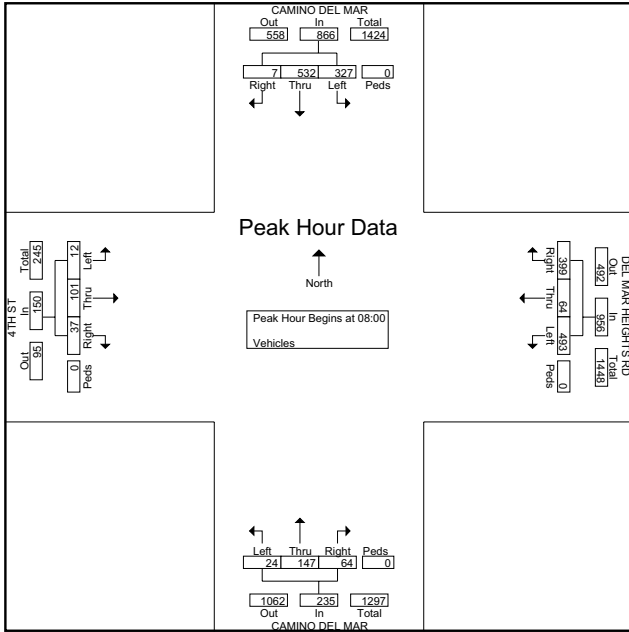
*** BREAK ***

16:00	82	58	0	0	12	19	105	0	8	117	58	0	1	12	2	0	474
16:15	105	55	1	0	24	24	116	0	11	133	79	0	4	14	4	0	570
16:30	92	47	6	0	26	32	141	0	11	136	73	0	1	17	3	0	585
16:45	90	56	4	0	21	36	99	0	10	149	93	0	2	13	2	0	575
Total	369	216	11	0	83	111	461	0	40	535	303	0	8	56	11	0	2204
17:00	122	66	1	0	27	38	85	0	11	133	97	0	2	11	10	0	603
17:15	107	58	1	0	24	39	122	0	8	140	110	0	3	15	4	0	631
17:30	97	78	6	0	32	17	138	0	20	139	109	0	3	12	3	0	654
17:45	89	47	2	0	23	38	106	0	19	153	122	0	2	19	4	0	624
Total	415	249	10	0	106	132	451	0	58	565	438	0	10	57	21	0	2512
Grand Total	1379	1380	35	0	1010	348	1595	0	131	1351	869	0	35	324	94	0	8551
Apprch %	49.4	49.4	1.3	0	34.2	11.8	54	0	5.6	57.5	37	0	7.7	71.5	20.8	0	
Total %	16.1	16.1	0.4	0	11.8	4.1	18.7	0	1.5	15.8	10.2	0	0.4	3.8	1.1	0	

True Count
4401 Twain Ave, Suite 27
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File Name : 11105.14.CAMINO DEL MAR.4TH ST
Site Code : 00000000
Start Date : 11/1/2011
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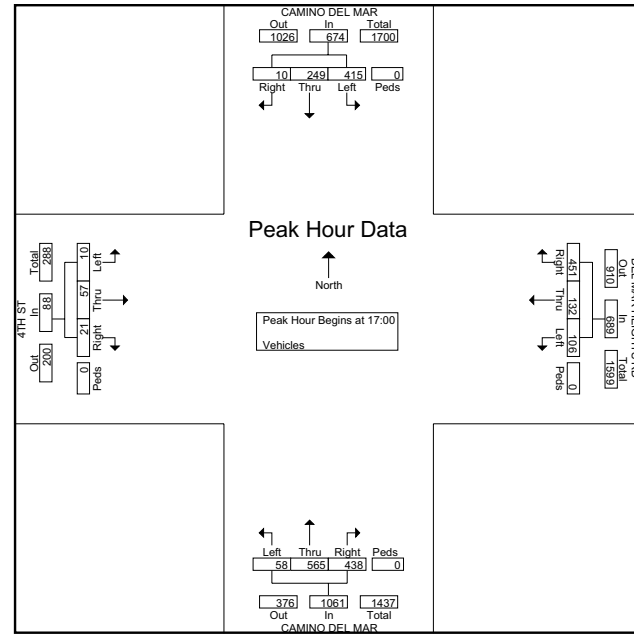
Start Time	CAMINO DEL MAR Southbound					DEL MAR HEIGHTS RD Westbound					CAMINO DEL MAR Northbound					4TH ST Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	72	131	1	0	204	104	18	80	0	202	4	33	8	0	45	2	20	4	0	26	477
08:15	77	132	1	0	210	126	18	86	0	230	7	32	12	0	51	3	26	15	0	44	535
08:30	86	142	1	0	229	139	19	98	0	256	5	52	19	0	76	4	25	11	0	40	601
08:45	92	127	4	0	223	124	9	135	0	268	8	30	25	0	63	3	30	7	0	40	594
Total Volume	327	532	7	0	866	493	64	399	0	956	24	147	64	0	235	12	101	37	0	150	2207
% App. Total	37.8	61.4	0.8	0		51.6	6.7	41.7	0		10.2	62.6	27.2	0		8	67.3	24.7	0		
PHF	.889	.937	.438	.000	.945	.887	.842	.739	.000	.892	.750	.707	.640	.000	.773	.750	.842	.617	.000	.852	.918



True Count
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File Name : 11105.14.CAMINO DEL MAR.4TH ST
Site Code : 00000000
Start Date : 11/1/2011
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Start Time	CAMINO DEL MAR Southbound					DEL MAR HEIGHTS RD Westbound					CAMINO DEL MAR Northbound					4TH ST Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	122	66	1	0	189	27	38	85	0	150	11	133	97	0	241	2	11	10	0	23	603
17:15	107	58	1	0	166	24	39	122	0	185	8	140	110	0	258	3	15	4	0	22	631
17:30	97	78	6	0	181	32	17	138	0	187	20	139	109	0	268	3	12	3	0	18	654
17:45	89	47	2	0	138	23	38	106	0	167	19	153	122	0	294	2	19	4	0	25	624
Total Volume	415	249	10	0	674	106	132	451	0	689	58	565	438	0	1061	10	57	21	0	88	2512
% App. Total	61.6	36.9	1.5	0		15.4	19.2	65.5	0		5.5	53.3	41.3	0		11.4	64.8	23.9	0		
PHF	.850	.798	.417	.000	.892	.828	.846	.817	.000	.921	.725	.923	.898	.000	.902	.833	.750	.525	.000	.880	.960



True Count
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File Name : 11105.13.CAMINO DEL MAR.9TH ST
Site Code : 00000000
Start Date : 10/18/2011
Page No : 1

Groups Printed- Vehicles

Start Time	CAMINO DEL MAR Southbound				9TH ST Westbound				CAMINO DEL MAR Northbound				9TH ST Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00	4	99	5	0	2	0	1	0	4	80	3	0	4	0	2	0	204
07:15	4	139	2	0	0	1	2	0	5	82	4	0	2	0	2	0	243
07:30	6	164	5	0	4	0	2	0	11	77	1	0	1	0	1	0	272
07:45	6	193	7	0	3	1	2	0	7	113	2	0	1	0	9	0	344
Total	20	595	19	0	9	2	7	0	27	352	10	0	8	0	14	0	1063
08:00	4	188	7	0	4	0	1	0	9	103	1	0	8	0	6	0	331
08:15	7	152	12	0	1	2	0	0	15	100	1	0	8	1	11	0	310
08:30	7	183	10	0	3	0	3	0	13	103	3	0	14	0	12	0	351
08:45	6	194	5	0	5	0	2	0	3	129	3	0	6	0	2	0	355
Total	24	717	34	0	13	2	6	0	40	435	8	0	36	1	31	0	1347

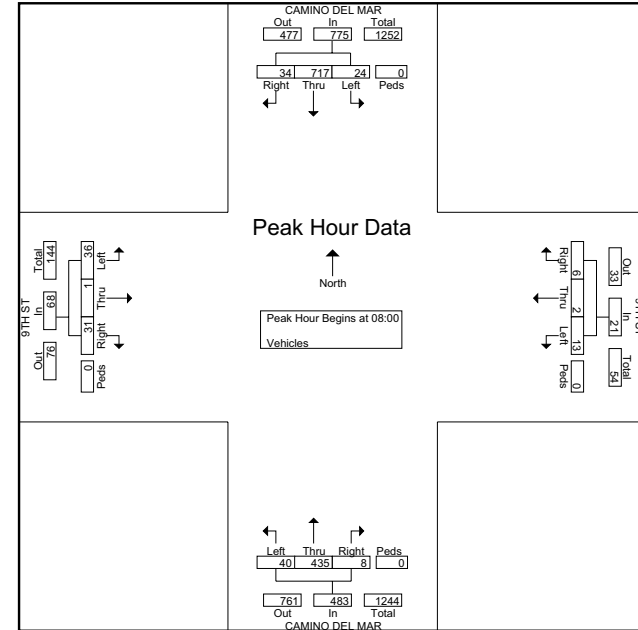
*** BREAK ***

16:00	6	142	2	0	1	0	3	0	3	177	3	0	3	0	2	0	342
16:15	4	137	3	0	2	0	2	0	1	194	3	0	3	0	5	0	354
16:30	9	165	3	0	5	0	4	0	6	213	6	0	5	0	4	0	420
16:45	7	112	3	0	1	2	1	0	5	224	3	0	3	0	4	0	365
Total	26	556	11	0	9	2	10	0	15	808	15	0	14	0	15	0	1481
17:00	2	175	2	0	6	0	0	0	7	220	1	0	2	0	11	0	426
17:15	4	142	5	0	6	2	4	0	3	204	7	0	4	0	3	0	384
17:30	13	113	3	0	2	1	4	0	2	222	2	0	1	0	5	0	368
17:45	7	115	7	0	3	1	2	0	5	240	4	0	2	0	5	0	391
Total	26	545	17	0	17	4	10	0	17	886	14	0	9	0	24	0	1569
Grand Total	96	2413	81	0	48	10	33	0	99	2481	47	0	67	1	84	0	5460
Apprch %	3.7	93.2	3.1	0	52.7	11	36.3	0	3.8	94.4	1.8	0	44.1	0.7	55.3	0	
Total %	1.8	44.2	1.5	0	0.9	0.2	0.6	0	1.8	45.4	0.9	0	1.2	0	1.5	0	

True Count
4401 Twain Ave, Suite 27
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File Name : 11105.13.CAMINO DEL MAR.9TH ST
Site Code : 00000000
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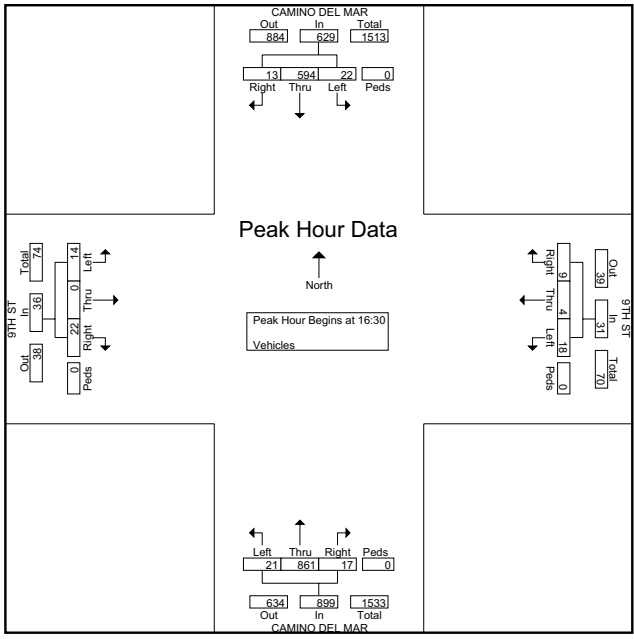
Start Time	CAMINO DEL MAR Southbound					9TH ST Westbound					CAMINO DEL MAR Northbound					9TH ST Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
08:00	4	188	7	0	199	4	0	1	0	5	9	103	1	0	113	8	0	6	0	14	331
08:15	7	152	12	0	171	1	2	0	0	3	15	100	1	0	116	8	1	11	0	20	310
08:30	7	183	10	0	200	3	0	3	0	6	13	103	3	0	119	14	0	12	0	26	351
08:45	6	194	5	0	205	5	0	2	0	7	3	129	3	0	135	6	0	2	0	8	355
Total Volume	24	717	34	0	775	13	2	6	0	21	40	435	8	0	483	36	1	31	0	68	1347
% App. Total	3.1	92.5	4.4	0		61.9	9.5	28.6	0		8.3	90.1	1.7	0		52.9	1.5	45.6	0		
PHF	.857	.924	.708	.000	.945	.650	.250	.500	.000	.750	.667	.843	.667	.000	.894	.643	.250	.646	.000	.654	.949



True Count
4401 Twain Ave, Suite 27
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File Name : 11105.13.CAMINO DEL MAR.9TH ST
Site Code : 00000000
Start Date : 10/18/2011
Page No : 3

Start Time	CAMINO DEL MAR Southbound				9TH ST Westbound				CAMINO DEL MAR Northbound				9TH ST Eastbound				Int. Total				
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left		Thru	Right	Peds	App. Total
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	9	165	3	0	177	5	0	4	0	9	6	213	6	0	225	5	0	4	0	9	420
16:45	7	112	3	0	122	1	2	1	0	4	5	224	3	0	232	3	0	4	0	7	365
17:00	2	175	2	0	179	6	0	0	0	6	7	220	1	0	228	2	0	11	0	13	426
17:15	4	142	5	0	151	6	2	4	0	12	3	204	7	0	214	4	0	3	0	7	384
Total Volume	22	594	13	0	629	18	4	9	0	31	21	861	17	0	899	14	0	22	0	36	1595
% App. Total	3.5	94.4	2.1	0		58.1	12.9	29	0		2.3	95.8	1.9	0		38.9	0	61.1	0		
PHF	.611	.849	.650	.000	.878	.750	.500	.563	.000	.646	.750	.961	.607	.000	.969	.700	.000	.500	.000	.692	.936



True Count
4401 Twain Ave, Suite 27
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File Name : 11105.12.CAMINO DEL MAR.11TH ST
Site Code : 00000000
Start Date : 10/18/2011
Page No : 1

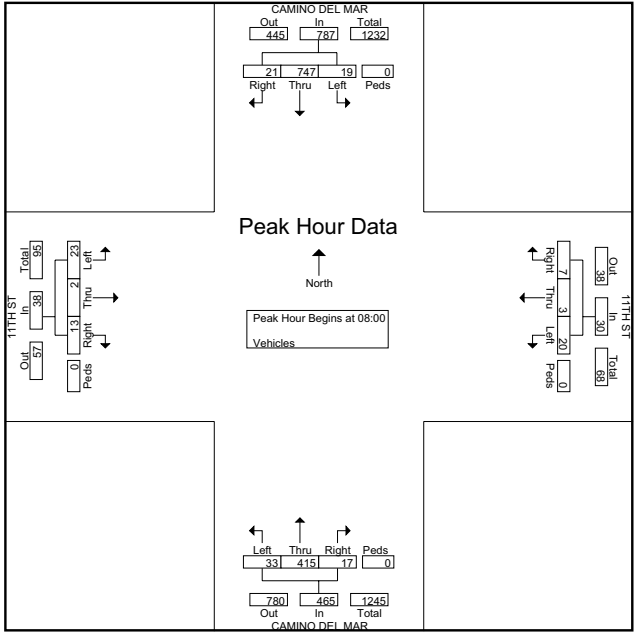
Groups Printed- Vehicles

Start Time	CAMINO DEL MAR Southbound				11TH ST Westbound				CAMINO DEL MAR Northbound				11TH ST Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00	2	95	5	0	4	0	1	0	10	74	3	0	2	0	4	0	200
07:15	0	130	2	0	7	1	0	0	6	76	4	0	5	0	4	0	235
07:30	2	169	4	0	12	0	0	0	7	67	4	0	6	0	4	0	275
07:45	6	189	3	0	6	0	0	0	7	102	3	0	4	0	7	0	327
Total	10	583	14	0	29	1	1	0	30	319	14	0	17	0	19	0	1037
*** BREAK ***																	
16:00	8	135	5	0	6	0	1	0	10	187	6	0	4	0	4	0	366
16:15	13	130	7	0	6	2	2	0	8	189	4	0	4	1	9	0	375
16:30	3	152	2	0	10	0	2	0	4	191	2	0	5	1	8	0	380
16:45	5	109	4	0	6	0	3	0	6	243	6	0	1	1	1	0	385
Total	29	526	18	0	28	2	8	0	28	810	18	0	14	3	22	0	1506
17:00	16	153	1	0	8	2	4	0	12	198	4	0	11	0	7	0	416
17:15	12	131	3	0	7	1	3	0	8	218	3	0	2	0	5	0	393
17:30	4	108	5	0	3	0	1	0	14	215	0	0	6	0	6	0	362
17:45	3	108	3	0	7	1	0	0	4	231	7	0	3	0	3	0	370
Total	35	500	12	0	25	4	8	0	38	862	14	0	22	0	21	0	1541
Grand Total	93	2356	65	0	102	10	24	0	129	2406	63	0	76	5	75	0	5404
Approch %	3.7	93.7	2.6	0	75	7.4	17.6	0	5	92.6	2.4	0	48.7	3.2	48.1	0	
Total %	1.7	43.6	1.2	0	1.9	0.2	0.4	0	2.4	44.5	1.2	0	1.4	0.1	1.4	0	

True Count
4401 Twain Ave, Suite 27
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File Name : 11105.12.CAMINO DEL MAR.11TH ST
Site Code : 00000000
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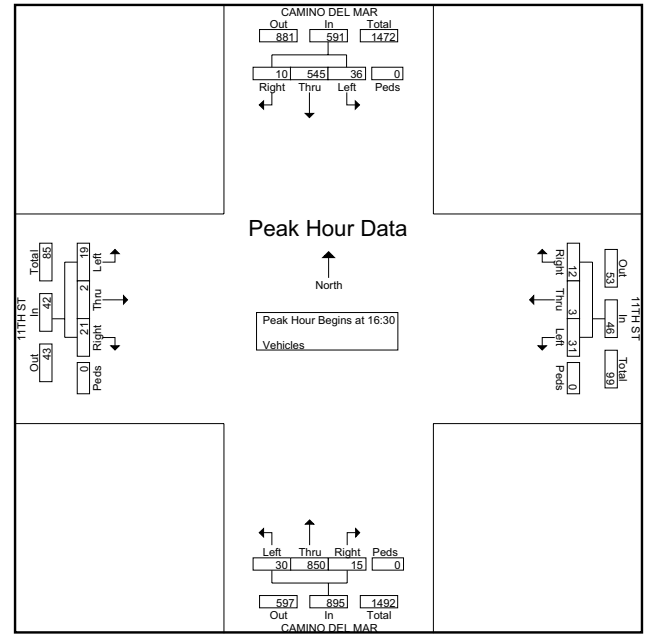
Start Time	CAMINO DEL MAR Southbound					11TH ST Westbound					CAMINO DEL MAR Northbound					11TH ST Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	5	189	2	0	196	4	1	1	0	6	8	102	6	0	116	7	1	4	0	12	330
08:15	3	171	5	0	179	5	0	1	0	6	6	88	5	0	99	5	1	1	0	7	291
08:30	3	201	8	0	212	3	1	0	0	4	7	108	2	0	117	7	0	4	0	11	344
08:45	8	186	6	0	200	8	1	5	0	14	12	117	4	0	133	4	0	4	0	8	355
Total Volume	19	747	21	0	787	20	3	7	0	30	33	415	17	0	465	23	2	13	0	38	1320
% App. Total	2.4	94.9	2.7	0		66.7	10	23.3	0		7.1	89.2	3.7	0		60.5	5.3	34.2	0		
PHF	.594	.929	.656	.000	.928	.625	.750	.350	.000	.536	.688	.887	.708	.000	.874	.821	.500	.813	.000	.792	.930



True Count
4401 Twain Ave, Suite 27
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File Name : 11105.12.CAMINO DEL MAR.11TH ST
Site Code : 00000000
Start Date : 10/18/2011
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Start Time	CAMINO DEL MAR Southbound					11TH ST Westbound					CAMINO DEL MAR Northbound					11TH ST Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	3	152	2	0	157	10	0	2	0	12	4	191	2	0	197	5	1	8	0	14	380
16:45	5	109	4	0	118	6	0	3	0	9	6	243	6	0	255	1	1	1	0	3	385
17:00	16	153	1	0	170	8	2	4	0	14	12	198	4	0	214	11	0	7	0	18	416
17:15	12	131	3	0	146	7	1	3	0	11	8	218	3	0	229	2	0	5	0	7	393
Total Volume	36	545	10	0	591	31	3	12	0	46	30	850	15	0	895	19	2	21	0	42	1574
% App. Total	6.1	92.2	1.7	0		67.4	6.5	26.1	0		3.4	95	1.7	0		45.2	4.8	50	0		
PHF	.563	.891	.625	.000	.869	.775	.375	.750	.000	.821	.625	.874	.625	.000	.877	.432	.500	.656	.000	.583	.946



True Count
4401 Twain Ave, Suite 27
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File Name : 11105.11.CAMINO DEL MAR.12TH ST
Site Code : 00000000
Start Date : 10/18/2011
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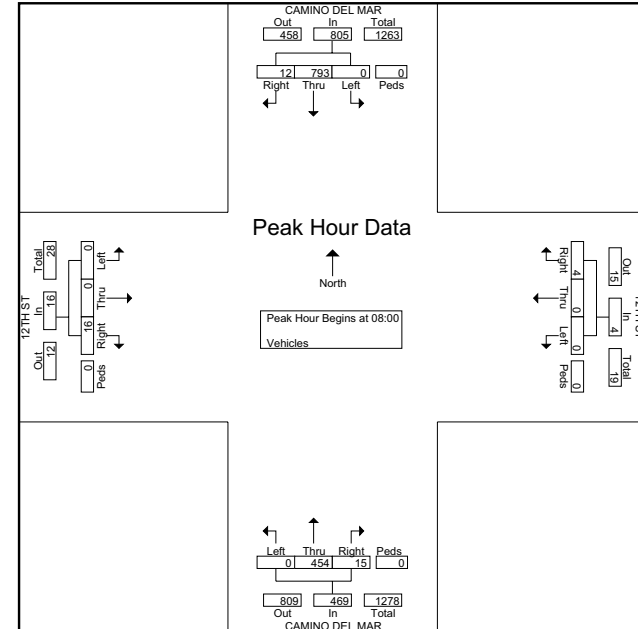
Groups Printed- Vehicles

Start Time	CAMINO DEL MAR Southbound				12TH ST Westbound				CAMINO DEL MAR Northbound				12TH ST Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00	0	104	4	0	0	0	0	0	0	68	1	0	0	0	0	0	177
07:15	0	133	1	0	0	0	0	0	0	77	3	0	0	0	1	0	215
07:30	0	178	0	0	0	0	1	0	0	82	3	0	0	0	4	0	268
07:45	0	187	1	0	0	0	0	0	0	100	1	0	0	0	2	0	291
Total	0	602	6	0	0	0	1	0	0	327	8	0	0	0	7	0	951
08:00	0	187	3	0	0	0	1	0	0	116	5	0	0	0	2	0	314
08:15	0	203	2	0	0	0	0	0	0	96	6	0	0	0	3	0	310
08:30	0	208	4	0	0	0	2	0	0	114	0	0	0	0	4	0	332
08:45	0	195	3	0	0	0	1	0	0	128	4	0	0	0	7	0	338
Total	0	793	12	0	0	0	4	0	0	454	15	0	0	0	16	0	1294
*** BREAK ***																	
16:00	0	143	2	0	0	0	2	0	0	180	5	0	0	0	9	0	341
16:15	0	140	2	0	0	0	3	0	0	214	4	0	0	0	9	0	372
16:30	0	143	1	0	0	0	3	0	0	211	3	0	0	0	2	0	363
16:45	0	116	0	0	0	0	3	0	0	230	4	0	0	0	9	0	362
Total	0	542	5	0	0	0	11	0	0	835	16	0	0	0	29	0	1438
17:00	0	160	1	0	0	0	2	0	0	221	1	0	0	0	7	0	392
17:15	0	125	2	0	0	0	3	0	0	221	2	0	0	0	5	0	358
17:30	0	110	0	0	0	0	0	0	0	218	2	0	0	0	4	0	334
17:45	0	112	0	0	0	0	3	0	0	221	4	0	0	0	4	0	344
Total	0	507	3	0	0	0	8	0	0	881	9	0	0	0	20	0	1428
Grand Total	0	2444	26	0	0	0	24	0	0	2497	48	0	0	0	72	0	5111
Apprch %	0	98.9	1.1	0	0	0	100	0	0	98.1	1.9	0	0	0	100	0	
Total %	0	47.8	0.5	0	0	0	0.5	0	0	48.9	0.9	0	0	0	1.4	0	

True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.11.CAMINO DEL MAR.12TH ST
Site Code : 00000000
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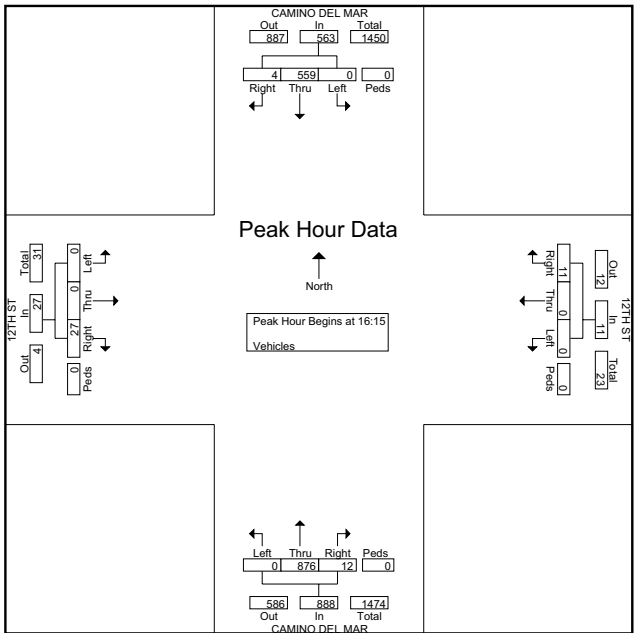
Start Time	CAMINO DEL MAR Southbound					12TH ST Westbound					CAMINO DEL MAR Northbound					12TH ST Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	0	187	3	0	190	0	0	1	0	1	0	116	5	0	121	0	0	2	0	2	314
08:15	0	203	2	0	205	0	0	0	0	0	0	96	6	0	102	0	0	3	0	3	310
08:30	0	208	4	0	212	0	0	2	0	2	0	114	0	0	114	0	0	4	0	4	332
08:45	0	195	3	0	198	0	0	1	0	1	0	128	4	0	132	0	0	7	0	7	338
Total Volume	0	793	12	0	805	0	0	4	0	4	0	454	15	0	469	0	0	16	0	16	1294
% App. Total	0	98.5	1.5	0		0	0	100	0		0	96.8	3.2	0		0	0	100	0		
PHF	.000	.953	.750	.000	.949	.000	.000	.500	.000	.500	.000	.887	.625	.000	.888	.000	.000	.571	.000	.571	.957



True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.11.CAMINO DEL MAR.12TH ST
Site Code : 00000000
Start Date : 10/18/2011
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Start Time	CAMINO DEL MAR Southbound				12TH ST Westbound				CAMINO DEL MAR Northbound				12TH ST Eastbound				Int. Total				
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total						
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	0	140	2	0	142	0	0	3	0	3	0	214	4	0	218	0	0	9	0	9	372
16:30	0	143	1	0	144	0	0	3	0	3	0	211	3	0	214	0	0	2	0	2	363
16:45	0	116	0	0	116	0	0	3	0	3	0	230	4	0	234	0	0	9	0	9	362
17:00	0	160	1	0	161	0	0	2	0	2	0	221	1	0	222	0	0	7	0	7	392
Total Volume	0	559	4	0	563	0	0	11	0	11	0	876	12	0	888	0	0	27	0	27	1489
% App. Total	0	99.3	0.7	0		0	0	100	0		0	98.6	1.4	0		0	0	100	0		
PHF	.000	.873	.500	.000	.874	.000	.000	.917	.000	.917	.000	.952	.750	.000	.949	.000	.000	.750	.000	.750	.950



True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.10.CAMINO DEL MAR.13TH ST
Site Code : 00000000
Start Date : 10/18/2011
Page No : 1

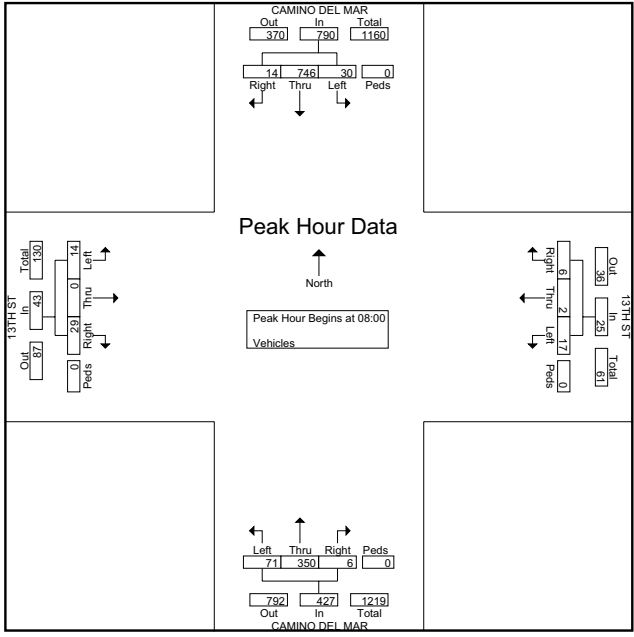
Groups Printed- Vehicles

Start Time	CAMINO DEL MAR Southbound				13TH ST Westbound				CAMINO DEL MAR Northbound				13TH ST Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00	5	91	3	0	2	1	0	0	7	67	0	0	1	0	5	0	182
07:15	1	134	1	0	3	0	1	0	13	72	1	0	3	1	9	0	239
07:30	2	152	3	0	6	0	0	0	14	54	3	0	3	0	8	0	245
07:45	5	174	2	0	3	0	1	0	19	87	0	0	2	0	16	0	309
Total	13	551	9	0	14	1	2	0	53	280	4	0	9	1	38	0	975
*** BREAK ***																	
16:00	6	110	7	0	4	2	2	0	28	158	5	0	9	1	22	0	354
16:15	4	108	5	0	2	0	3	0	25	170	5	0	5	0	17	0	344
16:30	4	115	4	0	9	1	3	0	20	177	2	0	4	0	17	0	356
16:45	7	93	10	0	11	2	3	0	29	215	5	0	4	0	18	0	397
Total	21	426	26	0	26	5	11	0	102	720	17	0	22	1	74	0	1451
17:00	12	114	8	0	8	0	8	0	27	188	5	0	6	1	20	0	397
17:15	4	110	3	0	10	0	1	0	20	199	2	0	5	1	18	0	373
17:30	7	83	6	0	6	3	1	0	26	204	3	0	2	0	16	0	357
17:45	6	85	10	0	6	1	1	0	20	198	4	0	4	0	14	0	349
Total	29	392	27	0	30	4	11	0	93	789	14	0	17	2	68	0	1476
Grand Total	93	2115	76	0	87	12	30	0	319	2139	41	0	62	4	209	0	5187
Approch %	4.1	92.6	3.3	0	67.4	9.3	23.3	0	12.8	85.6	1.6	0	22.5	1.5	76	0	
Total %	1.8	40.8	1.5	0	1.7	0.2	0.6	0	6.1	41.2	0.8	0	1.2	0.1	4	0	

True Count
4401 Twain Ave, Suite 27
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File Name : 11105.10.CAMINO DEL MAR.13TH ST
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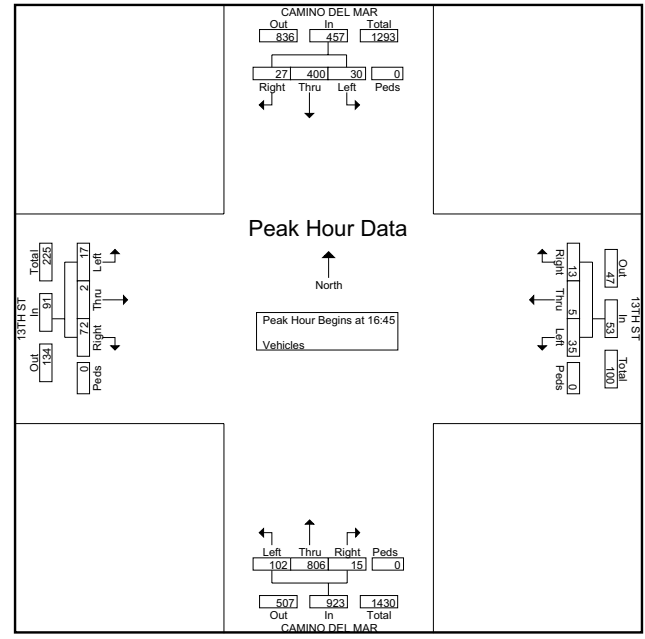
Start Time	CAMINO DEL MAR Southbound					13TH ST Westbound					CAMINO DEL MAR Northbound					13TH ST Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	6	185	4	0	195	3	1	1	0	5	9	89	1	0	99	3	0	3	0	6	305
08:15	6	179	3	0	188	3	0	3	0	6	20	70	1	0	91	3	0	8	0	11	296
08:30	6	195	2	0	203	5	1	2	0	8	19	93	2	0	114	3	0	11	0	14	339
08:45	12	187	5	0	204	6	0	0	0	6	23	98	2	0	123	5	0	7	0	12	345
Total Volume	30	746	14	0	790	17	2	6	0	25	71	350	6	0	427	14	0	29	0	43	1285
% App. Total	3.8	94.4	1.8	0		68	8	24	0		16.6	82	1.4	0		32.6	0	67.4	0		
PHF	.625	.956	.700	.000	.968	.708	.500	.500	.000	.781	.772	.893	.750	.000	.868	.700	.000	.659	.000	.768	.931



True Count
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File Name : 11105.10.CAMINO DEL MAR.13TH ST
Site Code : 00000000
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Start Time	CAMINO DEL MAR Southbound					13TH ST Westbound					CAMINO DEL MAR Northbound					13TH ST Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	7	93	10	0	110	11	2	3	0	16	29	215	5	0	249	4	0	18	0	22	397
17:00	12	114	8	0	134	8	0	8	0	16	27	188	5	0	220	6	1	20	0	27	397
17:15	4	110	3	0	117	10	0	1	0	11	20	199	2	0	221	5	1	18	0	24	373
17:30	7	83	6	0	96	6	3	1	0	10	26	204	3	0	233	2	0	16	0	18	357
Total Volume	30	400	27	0	457	35	5	13	0	53	102	806	15	0	923	17	2	72	0	91	1524
% App. Total	6.6	87.5	5.9	0		66	9.4	24.5	0		11.1	87.3	1.6	0		18.7	2.2	79.1	0		
PHF	.625	.877	.675	.000	.853	.795	.417	.406	.000	.828	.879	.937	.750	.000	.927	.708	.500	.900	.000	.843	.960



True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.09.CAMINO DEL MAR.15TH ST
Site Code : 00000000
Start Date : 10/18/2011
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Groups Printed- Vehicles

Start Time	CAMINO DEL MAR Southbound				15TH ST Westbound				CAMINO DEL MAR Northbound				15TH ST Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00	10	80	13	0	7	1	12	0	13	33	13	0	2	3	11	0	198
07:15	16	105	5	0	11	4	19	0	24	41	7	0	4	2	16	0	254
07:30	16	135	10	0	9	3	20	0	14	33	7	0	2	5	11	0	265
07:45	15	137	10	0	7	5	16	0	27	46	9	0	11	4	16	0	303
Total	57	457	38	0	34	13	67	0	78	153	36	0	19	14	54	0	1020
08:00	25	188	7	0	7	0	15	0	14	74	10	0	5	3	10	0	358
08:15	25	152	4	0	7	1	18	0	19	43	9	0	5	2	14	0	299
08:30	17	160	7	0	8	2	11	0	19	72	16	0	7	3	25	0	347
08:45	21	151	18	0	14	4	13	0	9	68	14	0	2	2	14	0	330
Total	88	651	36	0	36	7	57	0	61	257	49	0	19	10	63	0	1334

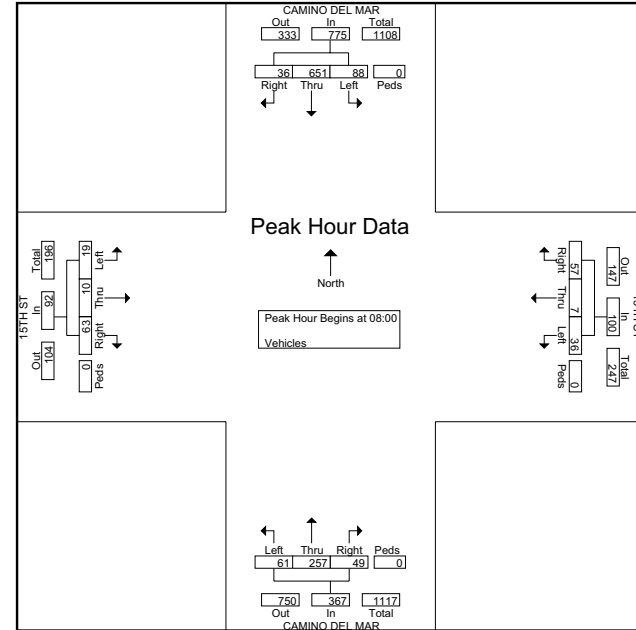
*** BREAK ***

16:00	17	90	20	0	5	5	19	0	30	139	6	0	18	2	16	0	367
16:15	18	91	22	0	8	1	24	0	20	152	16	0	14	2	23	0	391
16:30	13	75	15	0	14	6	18	0	25	133	13	0	15	3	21	0	351
16:45	18	68	24	0	18	9	22	0	36	187	16	0	20	1	16	0	435
Total	66	324	81	0	45	21	83	0	111	611	51	0	67	8	76	0	1544
17:00	14	91	23	0	15	4	21	0	24	172	11	0	25	5	20	0	425
17:15	14	96	15	0	10	2	17	0	30	167	15	0	9	5	17	0	397
17:30	14	65	14	0	10	5	15	0	23	159	16	0	15	2	12	0	350
17:45	30	77	18	0	10	4	19	0	30	165	21	0	12	6	12	0	404
Total	72	329	70	0	45	15	72	0	107	663	63	0	61	18	61	0	1576
Grand Total	283	1761	225	0	160	56	279	0	357	1684	199	0	166	50	254	0	5474
Apprch %	12.5	77.6	9.9	0	32.3	11.3	56.4	0	15.9	75.2	8.9	0	35.3	10.6	5.4	0	
Total %	5.2	32.2	4.1	0	2.9	1	5.1	0	6.5	30.8	3.6	0	3	0.9	4.6	0	

True Count
4401 Twain Ave, Suite 27
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File Name : 11105.09.CAMINO DEL MAR.15TH ST
Site Code : 00000000
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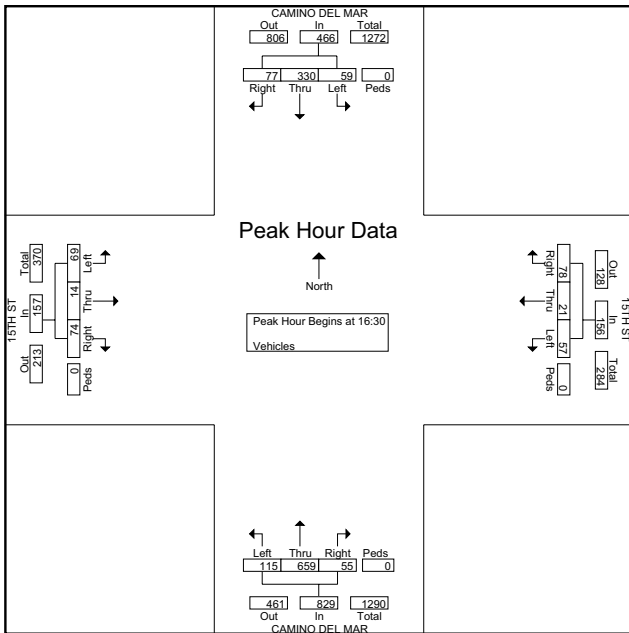
Start Time	CAMINO DEL MAR Southbound				15TH ST Westbound				CAMINO DEL MAR Northbound				15TH ST Eastbound				Int. Total				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds					
08:00	25	188	7	0	7	0	15	0	22	14	74	10	0	98	5	3	10	0	18	358	
08:15	25	152	4	0	7	1	18	0	26	19	43	9	0	71	5	2	14	0	21	299	
08:30	17	160	7	0	8	2	11	0	21	19	72	16	0	107	7	3	25	0	35	347	
08:45	21	151	18	0	14	4	13	0	31	9	68	14	0	91	2	2	14	0	18	330	
Total Volume	88	651	36	0	36	7	57	0	100	61	257	49	0	367	19	10	63	0	92	1334	
% App. Total	11.4	84	4.6	0	36	7	57	0	16.6	70	13.4	0		20.7	10.9	68.5	0				
PHF	.880	.866	.500	.000	.881	.643	.438	.792	.000	.806	.803	.868	.766	.000	.857	.679	.833	.630	.000	.657	.932



True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.09.CAMINO DEL MAR.15TH ST
Site Code : 00000000
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Start Time	CAMINO DEL MAR Southbound				15TH ST Westbound				CAMINO DEL MAR Northbound				15TH ST Eastbound				Int. Total				
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total						
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	13	75	15	0	103	14	6	18	0	38	25	133	13	0	171	15	3	21	0	39	351
16:45	18	68	24	0	110	18	9	22	0	49	36	187	16	0	239	20	1	16	0	37	435
17:00	14	91	23	0	128	15	4	21	0	40	24	172	11	0	207	25	5	20	0	50	425
17:15	14	96	15	0	125	10	2	17	0	29	30	167	15	0	212	9	5	17	0	31	397
Total Volume	59	330	77	0	466	57	21	78	0	156	115	659	55	0	829	69	14	74	0	157	1608
% App. Total	12.7	70.8	16.5	0		36.5	13.5	50	0		13.9	79.5	6.6	0		43.9	8.9	47.1	0		
PHF	.819	.859	.802	.000	.910	.792	.583	.886	.000	.796	.799	.881	.859	.000	.867	.690	.700	.881	.000	.785	.924



True Count
4401 Twain Ave, Suite 27
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File Name : 11105.08.STARTFORD CT.12TH ST
Site Code : 00000000
Start Date : 10/18/2011
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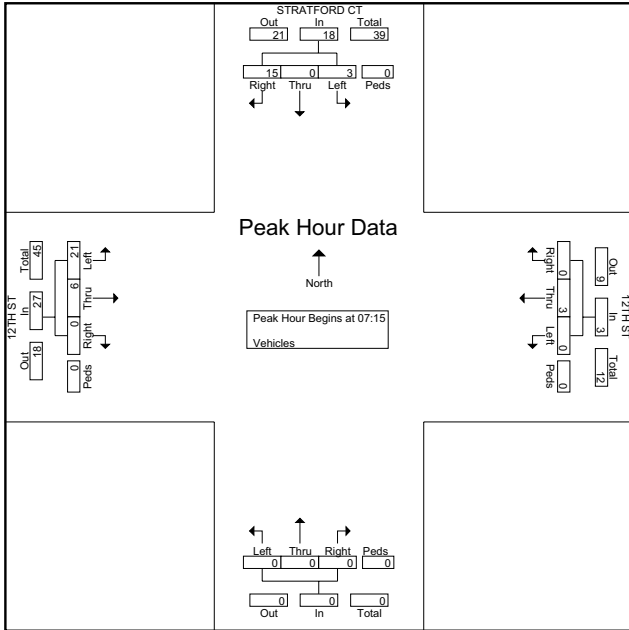
Groups Printed- Vehicles

Start Time	STRATFORD CT Southbound				12TH ST Westbound				12TH ST Northbound				12TH ST Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00	0	0	1	0	0	3	3	0	0	0	0	0	1	1	0	0	9
07:15	0	0	3	0	0	1	0	0	0	0	0	0	6	1	0	0	11
07:30	1	0	5	0	0	0	0	0	0	0	0	0	4	1	0	0	11
07:45	1	0	5	0	0	0	0	0	0	0	0	0	8	2	0	0	16
Total	2	0	14	0	0	4	3	0	0	0	0	0	19	5	0	0	47
08:00	1	0	2	0	0	2	0	0	0	0	0	0	3	2	0	0	10
08:15	1	0	2	0	0	1	0	0	0	0	0	0	4	2	0	0	10
08:30	3	0	1	0	0	1	0	0	0	0	0	0	3	2	0	0	10
08:45	1	0	2	0	0	0	3	0	0	0	0	0	5	7	0	0	18
Total	6	0	7	0	0	4	3	0	0	0	0	0	15	13	0	0	48
*** BREAK ***																	
16:00	1	0	2	0	0	1	2	0	0	0	0	0	6	5	0	0	17
16:15	6	0	3	0	0	0	1	0	0	0	0	0	4	2	0	0	16
16:30	0	0	3	0	0	2	1	0	0	0	0	0	14	2	0	0	22
16:45	2	0	5	0	0	0	0	0	0	0	0	0	8	1	0	0	16
Total	9	0	13	0	0	3	4	0	0	0	0	0	32	10	0	0	71
17:00	4	0	2	0	0	1	2	0	0	0	0	0	11	4	0	0	24
17:15	1	0	3	0	0	2	2	0	0	0	0	0	6	2	0	0	16
17:30	0	0	3	0	0	1	0	0	0	0	0	0	10	4	0	0	18
17:45	4	0	4	0	0	0	0	0	0	0	0	0	9	1	0	0	18
Total	9	0	12	0	0	4	4	0	0	0	0	0	36	11	0	0	76
Grand Total	26	0	46	0	0	15	14	0	0	0	0	0	102	39	0	0	242
Approch %	36.1	0	63.9	0	0	51.7	48.3	0	0	0	0	0	72.3	27.7	0	0	
Total %	10.7	0	19	0	0	6.2	5.8	0	0	0	0	0	42.1	16.1	0	0	

True Count
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File Name : 11105.08.STARTFORD CT.12TH ST
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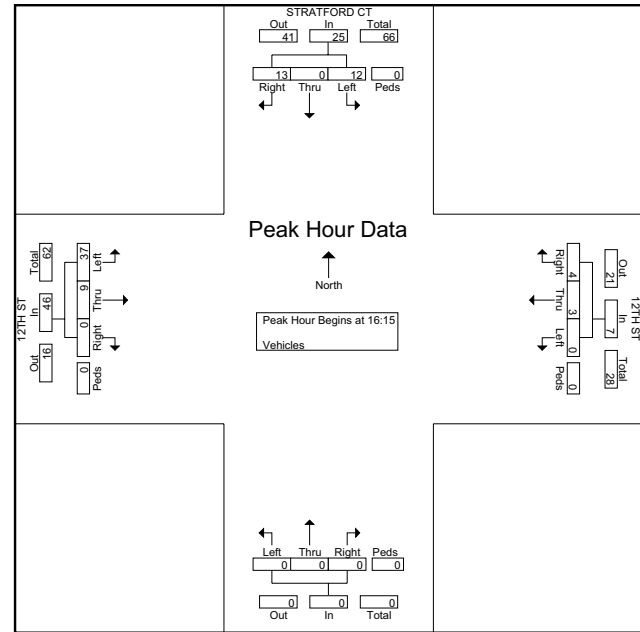
Start Time	STRATFORD CT Southbound					12TH ST Westbound					Northbound					12TH ST Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15																					
07:15	0	0	3	0	3	0	1	0	0	1	0	0	0	0	0	6	1	0	0	7	11
07:30	1	0	5	0	6	0	0	0	0	0	0	0	0	0	0	4	1	0	0	5	11
07:45	1	0	5	0	6	0	0	0	0	0	0	0	0	0	0	8	2	0	0	10	16
08:00	1	0	2	0	3	0	2	0	0	2	0	0	0	0	0	3	2	0	0	5	10
Total Volume	3	0	15	0	18	0	3	0	0	3	0	0	0	0	0	21	6	0	0	27	48
% App. Total	16.7	0	83.3	0		0	100	0	0	0	0	0	0	0	0	77.8	22.2	0	0		
PHF	.750	.000	.750	.000	.750	.000	.375	.000	.000	.375	.000	.000	.000	.000	.000	.656	.750	.000	.000	.675	.750



True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.08.STARTFORD CT.12TH ST
Site Code : 00000000
Start Date : 10/18/2011
Page No : 3

Start Time	STRATFORD CT Southbound					12TH ST Westbound					Northbound					12TH ST Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	6	0	3	0	9	0	0	1	0	1	0	0	0	0	0	4	2	0	0	6	16
16:30	0	0	3	0	3	0	2	1	0	3	0	0	0	0	0	14	2	0	0	16	22
16:45	2	0	5	0	7	0	0	0	0	0	0	0	0	0	0	8	1	0	0	9	16
17:00	4	0	2	0	6	0	1	2	0	3	0	0	0	0	0	11	4	0	0	15	24
Total Volume	12	0	13	0	25	0	3	4	0	7	0	0	0	0	0	37	9	0	0	46	78
% App. Total	48	0	52	0		0	42.9	57.1	0	0	0	0	0	0	0	80.4	19.6	0	0		
PHF	.500	.000	.650	.000	.694	.000	.375	.500	.000	.583	.000	.000	.000	.000	.000	.661	.563	.000	.000	.719	.813



True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.07.STRATFORD CT.15TH ST
Site Code : 00000000
Start Date : 10/18/2011
Page No : 1

Groups Printed- Vehicles

Start Time	Southbound				15TH ST Westbound				STATFORD CT Northbound				15TH ST Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00	0	0	0	0	2	19	0	0	1	0	2	0	0	19	4	0	47
07:15	0	0	0	0	4	23	0	0	2	0	4	0	0	21	2	0	56
07:30	0	0	0	0	0	20	0	0	2	0	1	0	0	18	3	0	44
07:45	0	0	0	0	3	23	0	0	2	1	6	0	0	26	6	0	67
Total	0	0	0	0	9	85	0	0	7	1	13	0	0	84	15	0	214
08:00	0	0	0	0	2	22	1	0	1	0	2	0	0	15	6	0	49
08:15	0	0	0	0	8	15	0	0	2	0	5	0	0	20	2	0	52
08:30	0	0	0	0	7	19	0	0	4	0	3	0	0	31	3	0	67
08:45	0	0	0	0	6	20	0	0	6	0	4	0	0	18	3	0	57
Total	0	0	0	0	23	76	1	0	13	0	14	0	0	84	14	0	225

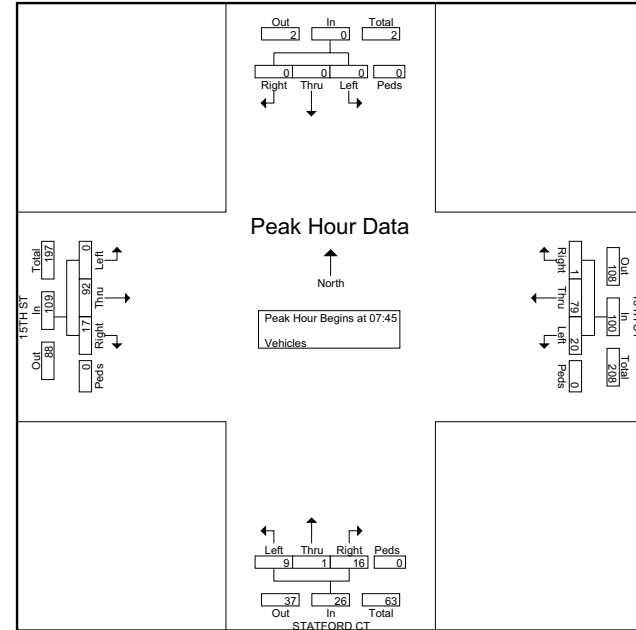
*** BREAK ***

16:00	1	0	0	0	11	33	0	0	4	0	11	0	1	23	5	0	89
16:15	0	0	0	0	6	31	0	0	9	0	7	0	0	33	0	0	86
16:30	0	0	0	0	6	34	0	0	13	0	8	0	0	33	3	0	97
16:45	1	1	0	0	7	40	0	0	6	0	18	0	0	24	2	0	99
Total	2	1	0	0	30	138	0	0	32	0	44	0	1	113	10	0	371
17:00	0	0	0	0	9	44	0	0	10	0	16	0	0	34	1	0	114
17:15	0	0	0	0	8	41	0	0	6	0	9	0	0	28	5	0	97
17:30	2	0	0	0	4	23	0	0	12	0	9	0	0	17	3	0	70
17:45	0	0	0	0	10	37	0	0	6	0	9	0	0	21	2	0	85
Total	2	0	0	0	31	145	0	0	34	0	43	0	0	100	11	0	366
Grand Total	4	1	0	0	93	444	1	0	86	1	114	0	1	381	50	0	1176
Apprch %	80	20	0	0	17.3	82.5	0.2	0	42.8	0.5	56.7	0	0.2	88.2	11.6	0	
Total %	0.3	0.1	0	0	7.9	37.8	0.1	0	7.3	0.1	9.7	0	0.1	32.4	4.3	0	

True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.07.STRATFORD CT.15TH ST
Site Code : 00000000
Start Date : 10/18/2011
Page No : 2

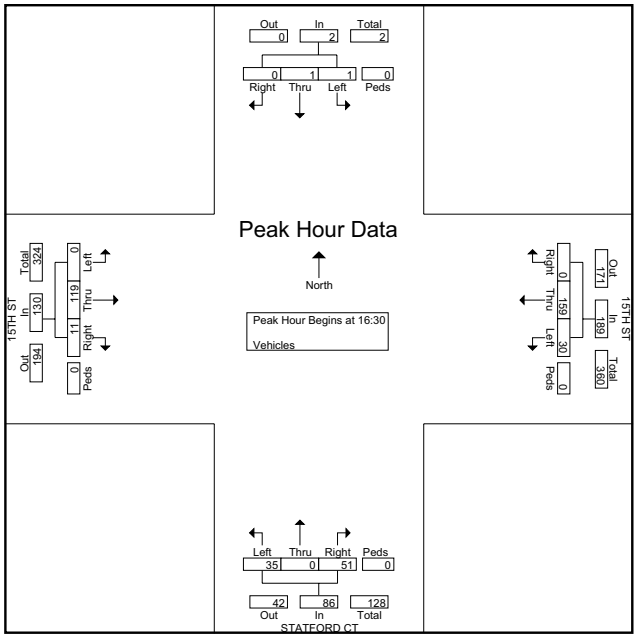
Start Time	Southbound					15TH ST Westbound					STATFORD CT Northbound					15TH ST Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	0	0	0	0	0	3	23	0	0	26	2	1	6	0	9	0	26	6	0	32	67
08:00	0	0	0	0	0	2	22	1	0	25	1	0	2	0	3	0	15	6	0	21	49
08:15	0	0	0	0	0	8	15	0	0	23	2	0	5	0	7	0	20	2	0	22	52
08:30	0	0	0	0	0	7	19	0	0	26	4	0	3	0	7	0	31	3	0	34	67
Total Volume	0	0	0	0	0	20	79	1	0	100	9	1	16	0	26	0	92	17	0	109	235
% App. Total	0	0	0	0	0	20	79	1	0	100	34.6	3.8	61.5	0	0	0	84.4	15.6	0	0	
PHF	.000	.000	.000	.000	.000	.625	.859	.250	.000	.962	.563	.250	.667	.000	.722	.000	.742	.708	.000	.801	.877



True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.07.STRATFORD CT.15TH ST
Site Code : 00000000
Start Date : 10/18/2011
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Start Time	Southbound				15TH ST Westbound				STATFORD CT Northbound				15TH ST Eastbound				Int. Total				
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total						
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	6	34	0	0	40	13	0	8	0	21	0	33	3	0	36	97
16:45	1	1	0	0	2	7	40	0	0	47	6	0	18	0	24	0	24	2	0	26	99
17:00	0	0	0	0	0	9	44	0	0	53	10	0	16	0	26	0	34	1	0	35	114
17:15	0	0	0	0	0	8	41	0	0	49	6	0	9	0	15	0	28	5	0	33	97
Total Volume	1	1	0	0	2	30	159	0	0	189	35	0	51	0	86	0	119	11	0	130	407
% App. Total	50	50	0	0	0	15.9	84.1	0	0	89.2	40.7	0	59.3	0	86.7	0	91.5	8.5	0	90.3	89.3
PHF	.250	.250	.000	.000	.250	.833	.903	.000	.000	.892	.673	.000	.708	.000	.827	.000	.875	.550	.000	.903	.893



True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.06.CAMINO DEL MAR.COAST BLVD
Site Code : 00000000
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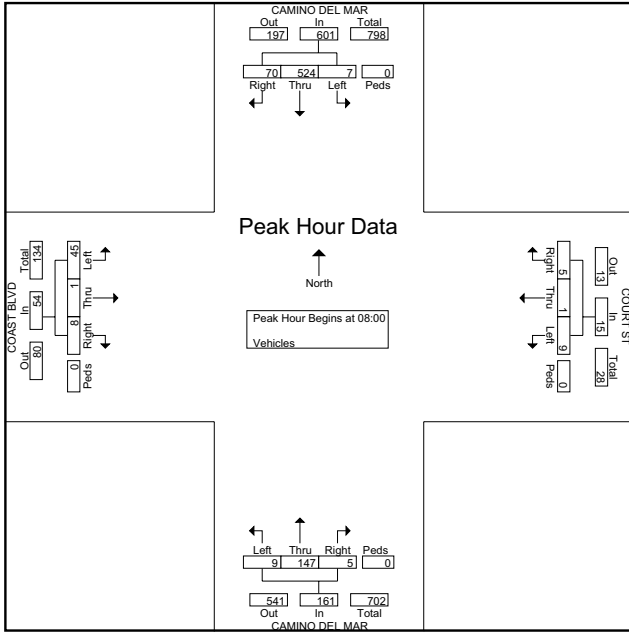
Groups Printed- Vehicles

Start Time	CAMINO DEL MAR Southbound				COURT ST Westbound				CAMINO DEL MAR Northbound				COAST BLVD Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00	4	64	12	0	1	0	0	0	2	23	0	0	10	0	5	0	121
07:15	0	94	20	0	2	1	0	0	0	13	0	0	15	0	2	0	147
07:30	0	119	10	0	3	0	1	0	2	14	0	0	8	0	5	0	162
07:45	2	118	14	0	5	0	2	0	1	33	1	0	15	0	3	0	194
Total	6	395	56	0	11	1	3	0	5	83	1	0	48	0	15	0	624
08:00	4	140	11	0	2	0	0	0	3	42	0	0	9	1	2	0	214
08:15	1	136	22	0	3	1	3	0	2	25	1	0	14	0	1	0	209
08:30	2	131	19	0	1	0	1	0	2	39	3	0	10	0	2	0	210
08:45	0	117	18	0	3	0	1	0	2	41	1	0	12	0	3	0	198
Total	7	524	70	0	9	1	5	0	9	147	5	0	45	1	8	0	831
*** BREAK ***																	
16:00	4	71	17	0	1	0	3	0	1	86	3	0	39	1	2	0	228
16:15	2	48	20	0	2	0	1	0	6	73	1	0	24	0	2	0	179
16:30	5	59	17	0	4	1	0	0	3	93	0	0	22	0	3	0	207
16:45	3	36	14	0	3	1	1	0	2	103	2	0	12	0	2	0	179
Total	14	214	68	0	10	2	5	0	12	355	6	0	97	1	9	0	793
17:00	4	50	19	0	0	0	2	0	3	105	1	0	27	0	2	0	213
17:15	2	61	24	0	2	0	2	0	3	85	2	0	24	0	1	0	206
17:30	3	51	22	0	1	0	0	0	5	98	0	0	15	0	1	0	196
17:45	3	53	21	0	3	0	0	0	5	90	1	0	27	0	3	0	206
Total	12	215	86	0	6	0	4	0	16	378	4	0	93	0	7	0	821
Grand Total	39	1348	280	0	36	4	17	0	42	963	16	0	283	2	39	0	3069
Apprch %	2.3	80.9	16.8	0	63.2	7	29.8	0	4.1	94.3	1.6	0	87.3	0.6	12	0	
Total %	1.3	43.9	9.1	0	1.2	0.1	0.6	0	1.4	31.4	0.5	0	9.2	0.1	1.3	0	

True Count
4401 Twain Ave, Suite 27
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File Name : 11105.06.CAMINO DEL MAR.COAST BLVD
Site Code : 00000000
Start Date : 10/18/2011
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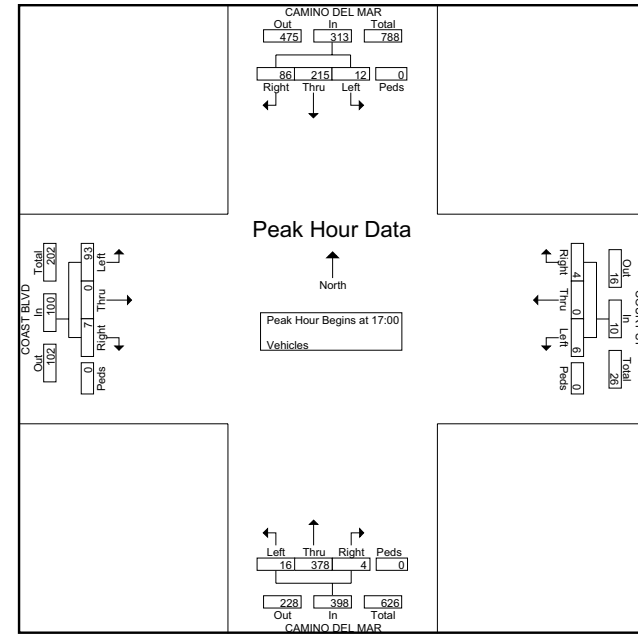
Start Time	CAMINO DEL MAR Southbound					COURT ST Westbound					CAMINO DEL MAR Northbound					COAST BLVD Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	4	140	11	0	155	2	0	0	0	2	3	42	0	0	45	9	1	2	0	12	214
08:15	1	136	22	0	159	3	1	3	0	7	2	25	1	0	28	14	0	1	0	15	209
08:30	2	131	19	0	152	1	0	1	0	2	2	39	3	0	44	10	0	2	0	12	210
08:45	0	117	18	0	135	3	0	1	0	4	2	41	1	0	44	12	0	3	0	15	198
Total Volume	7	524	70	0	601	9	1	5	0	15	9	147	5	0	161	45	1	8	0	54	831
% App. Total	1.2	87.2	11.6	0		6.0	6.7	33.3	0		5.6	91.3	3.1	0		83.3	1.9	14.8	0		
PHF	.438	.936	.795	.000	.945	.750	.250	.417	.000	.536	.750	.875	.417	.000	.894	.804	.250	.667	.000	.900	.971



True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.06.CAMINO DEL MAR.COAST BLVD
Site Code : 00000000
Start Date : 10/18/2011
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Start Time	CAMINO DEL MAR Southbound					COURT ST Westbound					CAMINO DEL MAR Northbound					COAST BLVD Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	4	50	19	0	73	0	0	2	0	2	3	105	1	0	109	27	0	2	0	29	213
17:15	2	61	24	0	87	2	0	2	0	4	3	85	2	0	90	24	0	1	0	25	206
17:30	3	51	22	0	76	1	0	0	0	1	5	98	0	0	103	15	0	1	0	16	196
17:45	3	53	21	0	77	3	0	0	0	3	5	90	1	0	96	27	0	3	0	30	206
Total Volume	12	215	86	0	313	6	0	4	0	10	16	378	4	0	398	93	0	7	0	100	821
% App. Total	3.8	68.7	27.5	0		6.0	0	4.0	0		4	95	1	0		93	0	7	0		
PHF	.750	.881	.896	.000	.899	.500	.000	.500	.000	.625	.800	.900	.500	.000	.913	.861	.000	.583	.000	.833	.964



True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.05.VIA DE LA VALLE.SAN ANDRES DR
Site Code : 00000000
Start Date : 10/27/2011
Page No : 1

Groups Printed- Vehicles

Start Time	SAN ANDRES DR Southbound				VIA DE LA VALLE Westbound				SAN ANDRES DR Northbound				VIA DE LA VALLE Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00	18	3	39	0	8	106	17	0	6	5	13	0	20	97	1	0	333
07:15	23	3	61	0	10	161	25	0	3	0	9	0	20	101	7	0	423
07:30	24	4	70	0	7	210	21	0	5	3	8	0	22	158	3	0	535
07:45	11	9	73	0	8	175	27	0	4	5	6	0	40	121	4	0	483
Total	76	19	243	0	33	652	90	0	18	13	36	0	102	477	15	0	1774
08:00	17	7	54	0	16	186	32	0	4	2	8	0	27	119	5	0	477
08:15	22	9	49	0	21	223	25	0	11	1	7	0	35	157	4	0	564
08:30	18	11	64	0	25	270	27	0	9	2	7	0	40	111	5	0	589
08:45	22	8	49	0	25	246	24	0	6	4	6	0	37	123	2	0	552
Total	79	35	216	0	87	925	108	0	30	9	28	0	139	510	16	0	2182

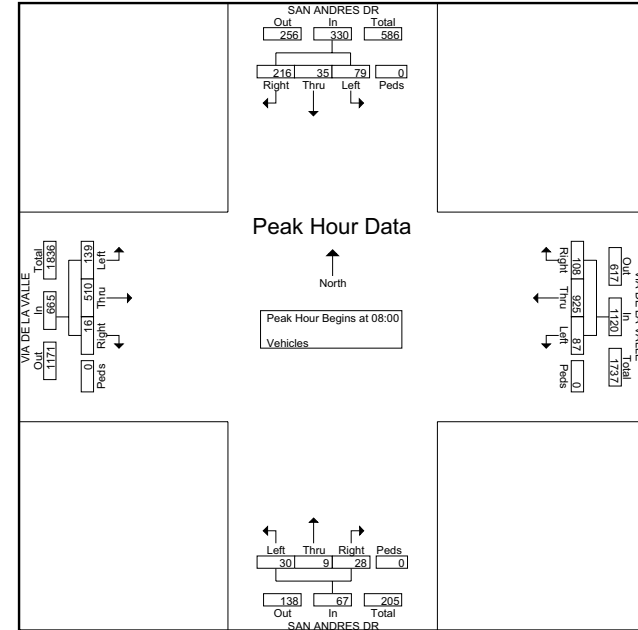
*** BREAK ***

16:00	39	9	44	0	27	191	19	0	30	14	16	0	60	205	12	0	666
16:15	23	11	44	0	34	180	24	0	16	17	18	0	60	152	3	0	582
16:30	35	8	36	0	16	189	28	0	18	15	24	0	79	194	4	0	646
16:45	33	15	34	0	15	155	32	0	17	13	26	0	59	196	4	0	599
Total	130	43	158	0	92	715	103	0	81	59	84	0	258	747	23	0	2493
17:00	27	11	45	0	20	203	27	0	22	21	24	0	87	211	2	0	700
17:15	28	13	39	0	11	207	29	0	18	8	19	0	57	171	7	0	607
17:30	17	8	29	0	27	252	35	0	5	12	13	0	88	152	3	0	641
17:45	32	5	34	0	13	226	34	0	14	9	10	0	73	172	4	0	626
Total	104	37	147	0	71	888	125	0	59	50	66	0	305	706	16	0	2574
Grand Total	389	134	764	0	283	3180	426	0	188	131	214	0	804	2440	70	0	9023
Apprch %	30.2	10.4	59.4	0	7.3	81.8	11	0	35.3	24.6	40.2	0	24.3	73.6	2.1	0	
Total %	4.3	1.5	8.5	0	3.1	35.2	4.7	0	2.1	1.5	2.4	0	8.9	27	0.8	0	

True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.05.VIA DE LA VALLE.SAN ANDRES DR
Site Code : 00000000
Start Date : 10/27/2011
Page No : 2

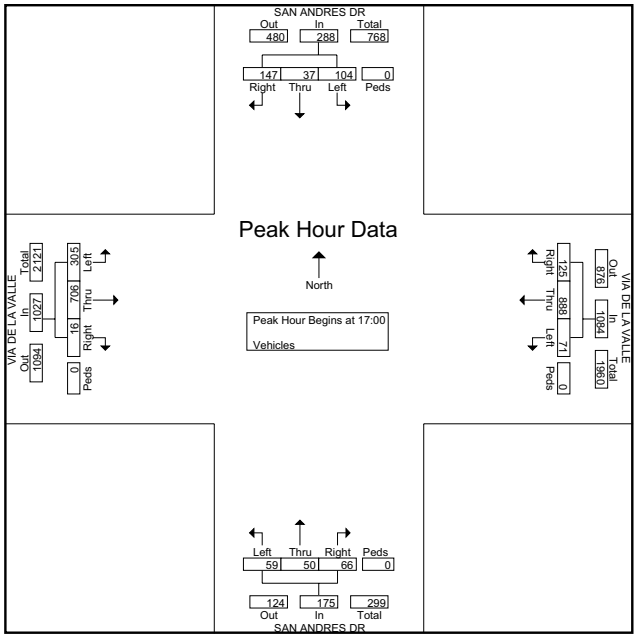
Start Time	SAN ANDRES DR Southbound					VIA DE LA VALLE Westbound					SAN ANDRES DR Northbound					VIA DE LA VALLE Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
08:00	17	7	54	0	78	16	186	32	0	234	4	2	8	0	14	27	119	5	0	151	477
08:15	22	9	49	0	80	21	223	25	0	269	11	1	7	0	19	35	157	4	0	196	564
08:30	18	11	64	0	93	25	270	27	0	322	9	2	7	0	18	40	111	5	0	156	589
08:45	22	8	49	0	79	25	246	24	0	295	6	4	6	0	16	37	123	2	0	162	552
Total Volume	79	35	216	0	330	87	925	108	0	1120	30	9	28	0	67	139	510	16	0	665	2182
% App. Total	23.9	10.6	65.5	0		7.8	82.6	9.6	0		44.8	13.4	41.8	0		20.9	76.7	2.4	0		
PHF	.898	.795	.844	.000	.887	.870	.856	.844	.000	.870	.682	.563	.875	.000	.882	.869	.812	.800	.000	.848	.926



True Count
4401 Twain Ave, Suite 27
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File Name : 11105.05.VIA DE LA VALLE.SAN ANDRES DR
Site Code : 00000000
Start Date : 10/27/2011
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Start Time	SAN ANDRES DR Southbound				VIA DE LA VALLE Westbound				SAN ANDRES DR Northbound				VIA DE LA VALLE Eastbound				Int. Total				
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left		Thru	Right	Peds	App. Total
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	27	11	45	0	83	20	203	27	0	250	22	21	24	0	67	87	211	2	0	300	700
17:15	28	13	39	0	80	11	207	29	0	247	18	8	19	0	45	57	171	7	0	235	607
17:30	17	8	29	0	54	27	252	35	0	314	5	12	13	0	30	88	152	3	0	243	641
17:45	32	5	34	0	71	13	226	34	0	273	14	9	10	0	33	73	172	4	0	249	626
Total Volume	104	37	147	0	288	71	888	125	0	1084	59	50	66	0	175	305	706	16	0	1027	2574
% App. Total	36.1	12.8	51	0		6.5	81.9	11.5	0		33.7	28.6	37.7	0		29.7	68.7	1.6	0		
PHF	.813	.712	.817	.000	.867	.657	.881	.893	.000	.863	.670	.595	.688	.000	.653	.866	.836	.571	.000	.856	.919



True Count
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File Name : 11105.04.VIA DE LA VALLE.I-5 NB RAMP
Site Code : 00000000
Start Date : 10/27/2011
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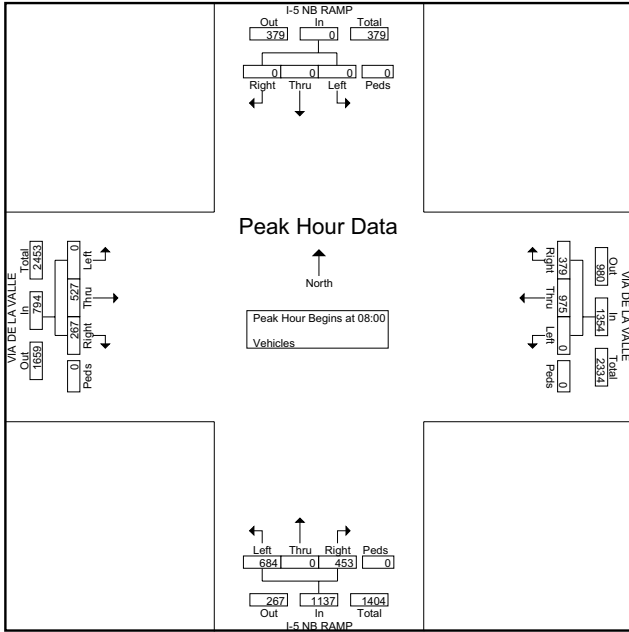
Groups Printed- Vehicles

Start Time	I-5 NB RAMP Southbound				VIA DE LA VALLE Westbound				I-5 NB RAMP Northbound				VIA DE LA VALLE Eastbound				Int. Total				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds					
07:00	0	0	0	0	0	162	46	0	102	0	65	0	0	94	32	0	501				
07:15	0	0	0	0	0	224	54	0	180	0	83	0	0	108	56	0	705				
07:30	0	0	0	0	0	241	86	0	192	0	127	0	0	131	40	0	817				
07:45	0	0	0	0	0	249	63	0	184	0	104	0	0	130	61	0	791				
Total	0	0	0	0	0	876	249	0	658	0	379	0	0	463	189	0	2814				
08:00	0	0	0	0	0	200	82	0	187	0	104	0	0	143	81	0	797				
08:15	0	0	0	0	0	245	99	0	159	0	127	0	0	127	74	0	831				
08:30	0	0	0	0	0	281	92	0	160	0	107	0	0	124	56	0	820				
08:45	0	0	0	0	0	249	106	0	178	0	115	0	0	133	56	0	837				
Total	0	0	0	0	0	975	379	0	684	0	453	0	0	527	267	0	3285				
*** BREAK ***																					
16:00	0	0	0	0	0	194	103	0	175	0	137	0	0	202	103	0	914				
16:15	0	0	0	0	0	203	111	0	181	0	143	0	0	195	97	0	930				
16:30	0	0	0	0	0	206	79	0	163	0	119	0	0	179	91	0	837				
16:45	0	0	0	0	0	185	93	0	189	0	121	0	0	198	106	0	892				
Total	0	0	0	0	0	788	386	0	708	0	520	0	0	774	397	0	3573				
17:00	0	0	0	0	0	216	69	0	203	0	124	0	0	209	103	0	924				
17:15	0	0	0	0	0	221	101	0	192	0	116	0	0	199	115	0	944				
17:30	0	0	0	0	0	202	94	0	198	0	115	0	0	182	104	0	895				
17:45	0	0	0	0	0	218	108	0	167	0	135	0	0	192	98	0	918				
Total	0	0	0	0	0	857	372	0	760	0	490	0	0	782	420	0	3681				
Grand Total	0	0	0	0	0	3496	1386	0	2810	0	1842	0	0	2546	1273	0	13353				
Approch %	0	0	0	0	0	71.6	28.4	0	60.4	0	39.6	0	0	66.7	33.3	0					
Total %	0	0	0	0	0	26.2	10.4	0	21	0	13.8	0	0	19.1	9.5	0					

True Count
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File Name : 11105.04.VIA DE LA VALLE.I-5 NB RAMP
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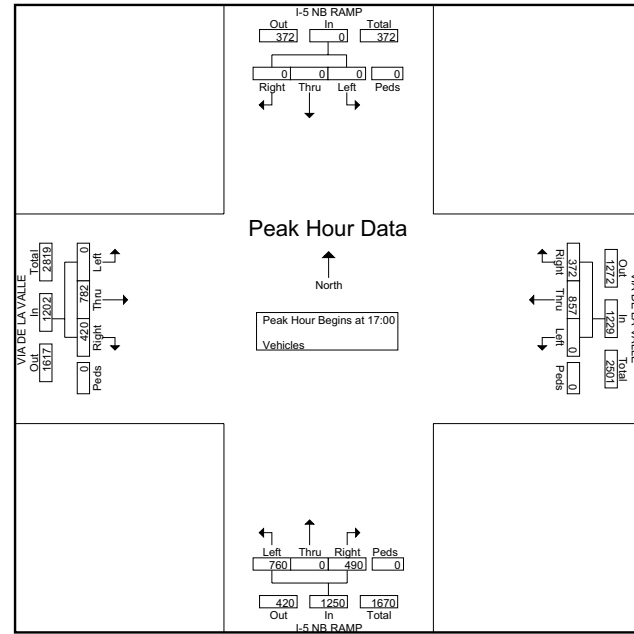
Start Time	I-5 NB RAMP Southbound					VIA DE LA VALLE Westbound					I-5 NB RAMP Northbound					VIA DE LA VALLE Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	0	0	0	0	0	0	200	82	0	282	187	0	104	0	291	0	143	81	0	224	797
08:15	0	0	0	0	0	0	245	99	0	344	159	0	127	0	286	0	127	74	0	201	831
08:30	0	0	0	0	0	0	281	92	0	373	160	0	107	0	267	0	124	56	0	180	820
08:45	0	0	0	0	0	0	249	106	0	355	178	0	115	0	293	0	133	56	0	189	837
Total Volume	0	0	0	0	0	0	975	379	0	1354	684	0	453	0	1137	0	527	267	0	794	3285
% App. Total	0	0	0	0	0	0	72	28	0	60.2	60.2	0	39.8	0	66.4	66.4	33.6	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.867	.894	.000	.908	.914	.000	.892	.000	.970	.000	.921	.824	.000	.886	.981



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File Name : 11105.04.VIA DE LA VALLE.I-5 NB RAMP
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Start Time	I-5 NB RAMP Southbound					VIA DE LA VALLE Westbound					I-5 NB RAMP Northbound					VIA DE LA VALLE Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	0	216	69	0	285	203	0	124	0	327	0	209	103	0	312	924
17:15	0	0	0	0	0	0	221	101	0	322	192	0	116	0	308	0	199	115	0	314	944
17:30	0	0	0	0	0	0	202	94	0	296	198	0	115	0	313	0	182	104	0	286	895
17:45	0	0	0	0	0	0	218	108	0	326	167	0	135	0	302	0	192	98	0	290	918
Total Volume	0	0	0	0	0	0	857	372	0	1229	760	0	490	0	1250	0	782	420	0	1202	3681
% App. Total	0	0	0	0	0	0	69.7	30.3	0	60.8	60.8	0	39.2	0	65.1	65.1	34.9	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.969	.861	.000	.942	.936	.000	.907	.000	.956	.000	.935	.913	.000	.957	.975



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Groups Printed- Vehicles

Start Time	I-5 SB RAMP Southbound				VIA DE LA VALLE Westbound				I-5 SB RAMP Northbound				VIA DE LA VALLE Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00	40	0	38	0	0	177	86	0	0	0	0	0	0	82	148	0	571
07:15	52	0	42	0	0	281	137	0	0	0	0	0	0	121	207	0	840
07:30	36	0	41	0	0	300	161	0	0	0	0	0	0	139	220	0	897
07:45	36	0	43	0	0	306	111	0	0	0	0	0	0	139	197	0	832
Total	164	0	164	0	0	1064	495	0	0	0	0	0	0	481	772	0	3140
08:00	55	0	37	0	0	213	168	0	0	0	0	0	0	185	266	0	924
08:15	55	0	45	0	0	297	153	0	0	0	0	0	0	140	247	0	937
08:30	61	0	52	0	0	256	120	0	0	0	0	0	0	119	258	0	866
08:45	72	0	58	0	0	303	135	0	0	0	0	0	0	112	180	0	860
Total	243	0	192	0	0	1069	576	0	0	0	0	0	0	556	951	0	3587

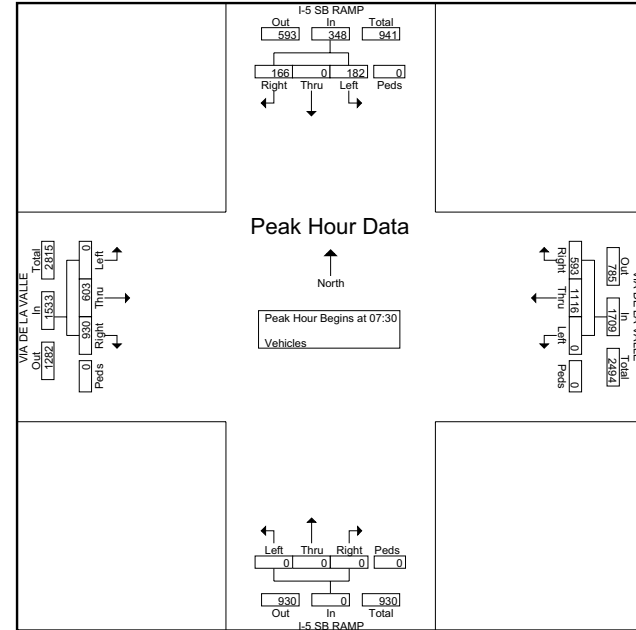
*** BREAK ***

16:00	72	0	66	0	0	291	78	0	0	0	0	0	0	222	192	0	921
16:15	80	0	56	0	0	301	75	0	0	0	0	0	0	204	202	0	918
16:30	79	0	72	0	0	307	81	0	0	0	0	0	0	190	148	0	877
16:45	87	0	72	0	0	311	65	0	0	0	0	0	0	207	151	0	893
Total	318	0	266	0	0	1210	299	0	0	0	0	0	0	823	693	0	3609
17:00	97	0	75	0	0	309	122	0	0	0	0	0	0	233	174	0	1010
17:15	82	0	73	0	0	284	92	0	0	0	0	0	0	230	179	0	940
17:30	94	0	90	0	0	312	70	0	0	0	0	0	0	203	159	0	928
17:45	82	0	74	0	0	323	72	0	0	0	0	0	0	224	161	0	936
Total	355	0	312	0	0	1228	356	0	0	0	0	0	0	890	673	0	3814
Grand Total	1080	0	934	0	0	4571	1726	0	0	0	0	0	0	2750	3089	0	14150
Apprch %	53.6	0	46.4	0	0	72.6	27.4	0	0	0	0	0	0	47.1	52.9	0	
Total %	7.6	0	6.6	0	0	32.3	12.2	0	0	0	0	0	0	19.4	21.8	0	

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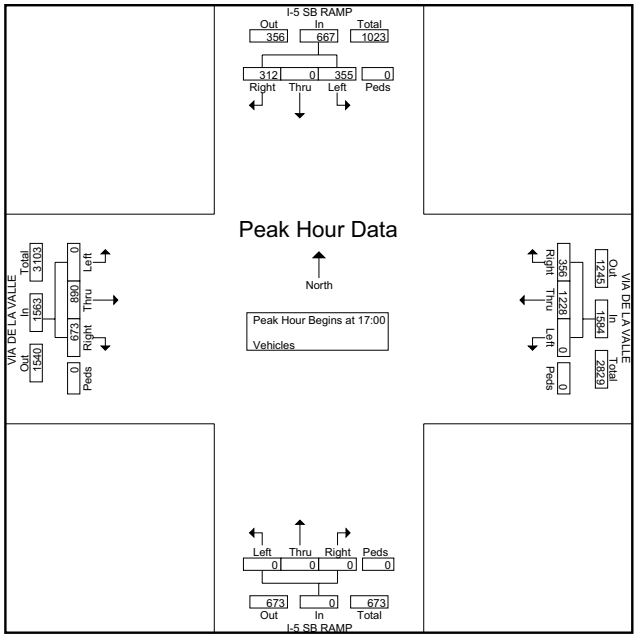
Start Time	I-5 SB RAMP Southbound					VIA DE LA VALLE Westbound					I-5 SB RAMP Northbound					VIA DE LA VALLE Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	36	0	41	0	77	0	300	161	0	461	0	0	0	0	0	0	139	220	0	359	897
07:45	36	0	43	0	79	0	306	111	0	417	0	0	0	0	0	0	139	197	0	336	832
08:00	55	0	37	0	92	0	213	168	0	381	0	0	0	0	0	0	185	266	0	451	924
08:15	55	0	45	0	100	0	297	153	0	450	0	0	0	0	0	0	140	247	0	387	937
Total Volume	182	0	166	0	348	0	1116	593	0	1709	0	0	0	0	0	0	603	930	0	1533	3590
% App. Total	52.3	0	47.7	0		0	65.3	34.7	0		0	0	0	0	0	0	39.3	60.7	0		
PHF	.827	.000	.922	.000	.870	.000	.912	.882	.000	.927	.000	.000	.000	.000	.000	.000	.815	.874	.000	.850	.958



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Start Time	I-5 SB RAMP Southbound				VIA DE LA VALLE Westbound				I-5 SB RAMP Northbound				VIA DE LA VALLE Eastbound				Int. Total				
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left		Thru	Right	Peds	App. Total
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	97	0	75	0	172	0	309	122	0	431	0	0	0	0	0	0	233	174	0	407	1010
17:15	82	0	73	0	155	0	284	92	0	376	0	0	0	0	0	0	230	179	0	409	940
17:30	94	0	90	0	184	0	312	70	0	382	0	0	0	0	0	0	203	159	0	362	928
17:45	82	0	74	0	156	0	323	72	0	395	0	0	0	0	0	0	224	161	0	385	936
Total Volume	355	0	312	0	667	0	1228	356	0	1584	0	0	0	0	0	0	890	673	0	1563	3814
% App. Total	53.2	0	46.8	0		0	77.5	22.5	0		0	0	0	0	0	0	56.9	43.1	0		
PHF	.915	.000	.867	.000	.906	.000	.950	.730	.000	.919	.000	.000	.000	.000	.000	.000	.955	.940	.000	.955	.944



True Count
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File Name : 11105.02.VIA DE LA VALLE.VALLEY AVE
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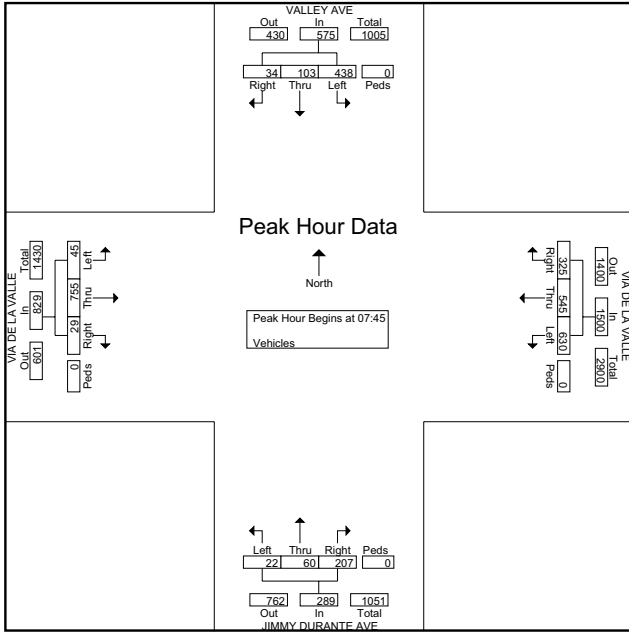
Groups Printed- Vehicles

Start Time	VALLEY AVE Southbound				VIA DE LA VALLE Westbound				JIMMY DURANTE AVE Northbound				VIA DE LA VALLE Eastbound				Int. Total			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds				
07:00	90	8	5	0	66	61	78	0	3	11	26	0	7	103	6	0	464			
07:15	141	18	2	0	58	108	109	0	5	20	38	0	6	151	8	0	664			
07:30	147	23	6	0	98	124	94	0	3	7	37	0	5	192	6	0	742			
07:45	145	29	11	0	129	157	92	0	10	15	48	0	11	164	3	0	814			
Total	523	78	24	0	351	450	373	0	21	53	149	0	29	610	23	0	2684			
08:00	92	23	12	0	151	126	74	0	8	11	50	0	10	190	6	0	753			
08:15	92	27	3	0	168	143	80	0	2	15	54	0	10	195	8	0	797			
08:30	109	24	8	0	182	119	79	0	2	19	55	0	14	206	12	0	829			
08:45	91	15	7	0	191	157	75	0	4	19	62	0	7	163	9	0	800			
Total	384	89	30	0	692	545	308	0	16	64	221	0	41	754	35	0	3179			
*** BREAK ***																				
16:00	114	15	22	0	67	149	114	0	11	40	208	0	14	142	6	0	902			
16:15	102	23	15	0	91	148	114	0	29	37	195	0	13	139	5	0	911			
16:30	105	19	17	0	91	118	99	0	18	27	194	0	11	142	8	0	849			
16:45	118	17	14	0	81	142	69	0	23	31	187	0	7	125	4	0	818			
Total	439	74	68	0	330	557	396	0	81	135	784	0	45	548	23	0	3480			
17:00	137	23	10	0	80	141	88	0	18	44	152	0	9	145	9	0	856			
17:15	98	13	14	0	83	185	92	0	10	22	143	0	10	155	7	0	832			
17:30	103	12	15	0	84	178	82	0	14	24	122	0	9	122	5	0	770			
17:45	87	21	15	0	79	196	84	0	15	14	108	0	9	152	7	0	787			
Total	425	69	54	0	326	700	346	0	57	104	525	0	37	574	28	0	3245			
Grand Total	1771	310	176	0	1699	2252	1423	0	175	356	1679	0	152	2486	109	0	12588			
Apprch %	78.5	13.7	7.8	0	31.6	41.9	26.5	0	7.9	16.1	7.6	0	5.5	90.5	4	0				
Total %	14.1	2.5	1.4	0	13.5	17.9	11.3	0	1.4	2.8	13.3	0	1.2	19.7	0.9	0				

True Count
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File Name : 11105.02.VIA DE LA VALLE.VALLEY AVE
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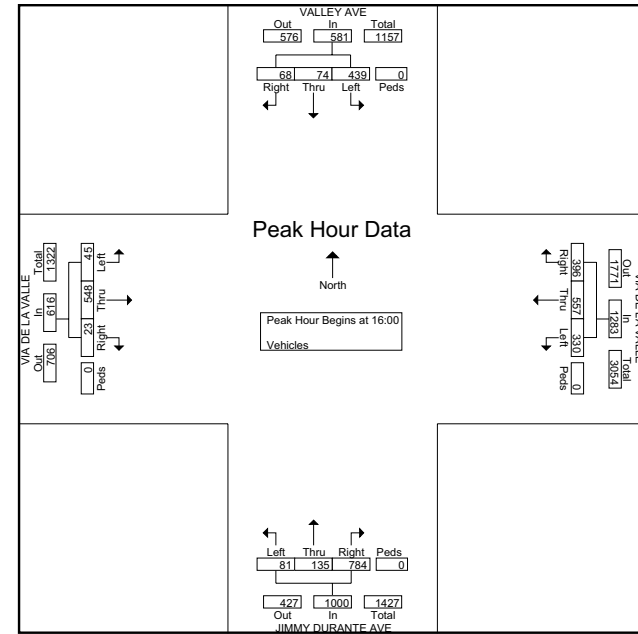
Start Time	VALLEY AVE Southbound					VIA DE LA VALLE Westbound					JIMMY DURANTE AVE Northbound					VIA DE LA VALLE Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	145	29	11	0	185	129	157	92	0	378	10	15	48	0	73	11	164	3	0	178	814
08:00	92	23	12	0	127	151	126	74	0	351	8	11	50	0	69	10	190	6	0	206	753
08:15	92	27	3	0	122	168	143	80	0	391	2	15	54	0	71	10	195	8	0	213	797
08:30	109	24	8	0	141	182	119	79	0	380	2	19	55	0	76	14	206	12	0	232	829
Total Volume	438	103	34	0	575	630	545	325	0	1500	22	60	207	0	289	45	755	29	0	829	3193
% App. Total	76.2	17.9	5.9	0		42	36.3	21.7	0		7.6	20.8	71.6	0		5.4	91.1	3.5	0		
PHF	.755	.888	.708	.000	.777	.865	.868	.883	.000	.959	.550	.789	.941	.000	.951	.804	.916	.604	.000	.893	.963



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File Name : 11105.02.VIA DE LA VALLE.VALLEY AVE
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Start Time	VALLEY AVE Southbound					VIA DE LA VALLE Westbound					JIMMY DURANTE AVE Northbound					VIA DE LA VALLE Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	114	15	22	0	151	67	149	114	0	330	11	40	208	0	259	14	142	6	0	162	902
16:15	102	23	15	0	140	91	148	114	0	353	29	37	195	0	261	13	139	5	0	157	911
16:30	105	19	17	0	141	91	118	99	0	308	18	27	194	0	239	11	142	8	0	161	849
16:45	118	17	14	0	149	81	142	69	0	292	23	31	187	0	241	7	125	4	0	136	818
Total Volume	439	74	68	0	581	330	557	396	0	1283	81	135	784	0	1000	45	548	23	0	616	3480
% App. Total	75.6	12.7	11.7	0		25.7	43.4	30.9	0		8.1	13.5	78.4	0		7.3	89	3.7	0		
PHF	.930	.804	.773	.000	.962	.907	.935	.868	.000	.909	.698	.844	.942	.000	.958	.804	.965	.719	.000	.951	.955



True Count
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File Name : 11105.21.OCEAN AVE.15TH ST
Site Code : 00000000
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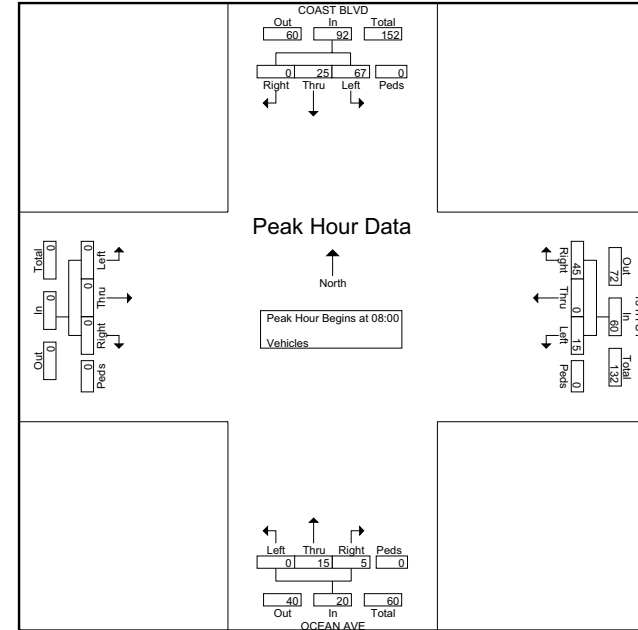
Groups Printed- Vehicles

Start Time	COAST BLVD Southbound				15TH ST Westbound				OCEAN AVE Northbound				Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00	10	3	0	0	1	0	6	0	0	5	0	0	0	0	0	0	25
07:15	10	2	0	0	6	0	10	0	0	2	2	0	0	0	0	0	32
07:30	20	4	0	0	1	0	7	0	0	3	0	0	0	0	0	0	35
07:45	16	3	0	0	0	0	18	0	0	5	1	0	0	0	0	0	43
Total	56	12	0	0	8	0	41	0	0	15	3	0	0	0	0	0	135
08:00	15	6	0	0	2	0	10	0	0	4	2	0	0	0	0	0	39
08:15	20	5	0	0	2	0	9	0	0	7	1	0	0	0	0	0	44
08:30	16	7	0	0	4	0	9	0	0	0	2	0	0	0	0	0	38
08:45	16	7	0	0	7	0	17	0	0	4	0	0	0	0	0	0	51
Total	67	25	0	0	15	0	45	0	0	15	5	0	0	0	0	0	172
*** BREAK ***																	
16:00	17	8	0	0	4	0	31	0	0	8	6	0	0	0	0	0	74
16:15	21	3	0	0	5	0	23	0	0	14	3	0	0	0	0	0	69
16:30	27	5	0	0	10	0	34	0	0	7	1	0	0	0	0	0	84
16:45	16	0	0	0	18	0	48	0	0	6	1	0	0	0	0	0	89
Total	81	16	0	0	37	0	136	0	0	35	11	0	0	0	0	0	316
17:00	20	11	0	0	16	0	36	0	0	7	0	0	0	0	0	0	90
17:15	18	6	0	0	11	0	34	0	0	8	0	0	0	0	0	0	77
17:30	18	3	0	0	7	0	31	0	0	10	1	0	0	0	0	0	70
17:45	34	3	0	0	8	0	39	0	0	9	1	0	0	0	0	0	94
Total	90	23	0	0	42	0	140	0	0	34	2	0	0	0	0	0	331
Grand Total	294	76	0	0	102	0	362	0	0	99	21	0	0	0	0	0	954
Apprch %	79.5	20.5	0	0	22	0	78	0	0	82.5	17.5	0	0	0	0	0	
Total %	30.8	8	0	0	10.7	0	37.9	0	0	10.4	2.2	0	0	0	0	0	

True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.21.OCEAN AVE.15TH ST
Site Code : 00000000
Start Date : 10/19/2011
Page No : 2

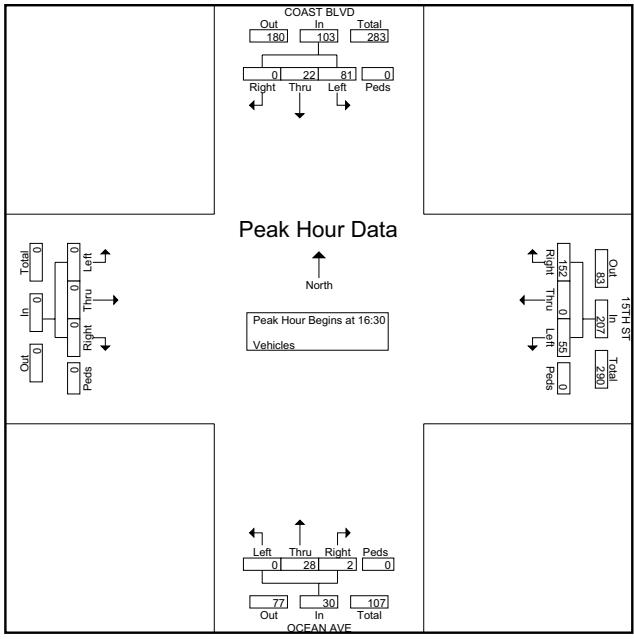
Start Time	COAST BLVD Southbound				15TH ST Westbound				OCEAN AVE Northbound				Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
08:00	15	6	0	0	2	0	10	0	12	0	4	2	0	6	0	0	39
08:15	20	5	0	0	2	0	9	0	11	0	7	1	0	8	0	0	44
08:30	16	7	0	0	4	0	9	0	13	0	0	2	0	2	0	0	38
08:45	16	7	0	0	7	0	17	0	24	0	4	0	0	4	0	0	51
Total Volume	67	25	0	0	15	0	45	0	60	0	15	5	0	20	0	0	172
% App. Total	72.8	27.2	0	0	25	0	75	0	60	0	75	25	0	60	0	0	
PHF	.838	.893	.000	.000	.920	.536	.000	.662	.000	.625	.000	.536	.625	.000	.625	.000	.843



True Count
4401 Twain Ave, Suite 27
San Diego, CA 92120

File Name : 11105.21.OCEAN AVE.15TH ST
Site Code : 00000000
Start Date : 10/19/2011
Page No : 3

Start Time	COAST BLVD Southbound				App. Total	15TH ST Westbound				App. Total	OCEAN AVE Northbound				App. Total	Eastbound				Int. Total	
	Left	Thru	Right	Peds		Left	Thru	Right	Peds		Left	Thru	Right	Peds		Left	Thru	Right	Peds		
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	27	5	0	0	32	10	0	34	0	44	0	7	1	0	8	0	0	0	0	0	84
16:45	16	0	0	0	16	18	0	48	0	66	0	6	1	0	7	0	0	0	0	0	89
17:00	20	11	0	0	31	16	0	36	0	52	0	7	0	0	7	0	0	0	0	0	90
17:15	18	6	0	0	24	11	0	34	0	45	0	8	0	0	8	0	0	0	0	0	77
Total Volume	81	22	0	0	103	55	0	152	0	207	0	28	2	0	30	0	0	0	0	0	340
% App. Total	78.6	21.4	0	0		26.6	0	73.4	0		0	93.3	6.7	0		0	0	0	0	0	
PHF	.750	.500	.000	.000	.805	.764	.000	.792	.000	.784	.000	.875	.500	.000	.938	.000	.000	.000	.000	.000	.944



MetroCount Traffic Executive Vehicle Counts

1896 -- English (ENU)

Datasets:

Site: [11105.12] COAST BLVD (NORTH OF 15TH ST) NORTHBOUND
Direction: 7 - North bound A>B, South bound B>A. Lane: 0
Survey Duration: 13:25 Tuesday, November 15, 2011 => 10:41 Thursday, November 17, 2011
File: 11105B.1217Nov2011.EC0 (Base)
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 0:00 Wednesday, November 16, 2011 => 0:00 Thursday, November 17, 2011
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Direction: North (bound)

* Wednesday, November 16, 2011 - Total=1953, 15 minute drops

	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
	4	5	2	4	2	17	47	100	88	81	137	168	167	141	150	147	184	190	146	85	38	24	16	10
1	0	1	2	0	1	12	20	18	18	32	43	41	43	44	38	38	62	49	27	11	9	5	4	-
0	2	1	0	1	5	9	21	21	22	35	41	38	36	44	37	49	47	39	23	12	8	6	2	-
1	3	0	1	1	6	10	38	13	16	29	47	46	28	27	35	53	34	25	26	7	4	5	2	-
2	0	0	1	0	5	16	21	36	25	41	37	42	34	35	37	44	47	33	9	8	3	0	2	-

AM Peak 1045 - 1145 (172), AM PHF=0.91

**MetroCount Traffic Executive
Event Counts**

1894 -- English (ENU)

Datasets:

Site: [11105.11] DEL MAR HEIGHTS RD (WEST OF CREST WY) WESTBOUND
Input A: 4 - West bound. - Lane= 0, Added to totals. (/2.000)
Input B: 0 - Unused or unknown. - Lane= 0, Excluded from totals.
Survey Duration: 12:57 Tuesday, November 15, 2011 => 10:54 Thursday, November 17, 2011
File: 11105B.11.W17Nov2011.EC0 (Regular)
Data type: Axle sensors - Separate (Count)

Profile:

Filter time: 0:00 Wednesday, November 16, 2011 => 0:00 Thursday, November 17, 2011

* Wednesday, November 16, 2011=8651, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
16	22	9	9	20	93	256	615	843	639	526	610	630	633	536	562	577	640	533	323	227	171	122	43
8	4	2	4	2	10	30	138	202	188	127	138	145	162	138	123	132	157	172	93	69	46	31	15
1	8	2	1	5	14	51	138	262	149	125	136	140	181	134	131	143	150	138	92	57	44	41	12
4	3	0	2	6	30	81	169	187	155	133	144	160	151	130	157	173	172	131	80	53	40	30	10
3	7	5	2	7	39	95	171	193	147	142	192	186	140	135	152	129	162	93	59	48	41	20	6

AM Peak 0800 - 0900 (843), AM PHF=0.80

**MetroCount Traffic Executive
Event Counts**

1895 -- English (ENU)

Datasets:

Site: [11105.11] DEL MAR HEIGHTS RD (WEST OF CREST WY) EASTBOUND
Input A: 2 - East bound. - Lane= 0, Added to totals. (/2.000)
Input B: 0 - Unused or unknown. - Lane= 0, Excluded from totals.
Survey Duration: 12:59 Tuesday, November 15, 2011 => 10:56 Thursday, November 17, 2011
File: 11105B.11.E17Nov2011.EC0 (Regular)
Data type: Axle sensors - Separate (Count)

Profile:

Filter time: 0:00 Wednesday, November 16, 2011 => 0:00 Thursday, November 17, 2011

* Wednesday, November 16, 2011=8352, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
16	19	13	5	20	53	169	515	506	418	453	513	607	656	706	592	679	808	501	368	297	243	137	64
6	6	4	0	1	12	31	66	140	108	107	125	139	152	174	146	172	205	165	103	68	70	46	26
4	1	3	2	4	18	35	108	138	86	102	135	159	158	160	142	162	224	115	77	74	58	41	17
6	10	1	0	9	11	50	165	103	115	127	103	160	170	175	160	181	190	119	98	84	59	37	13
0	2	5	3	6	12	54	176	126	109	119	151	150	177	198	144	165	190	103	90	73	57	13	8

AM Peak 0730 - 0830 (619), AM PHF=0.88

**MetroCount Traffic Executive
Event Counts**

1834 -- English (ENU)

Datasets:

Site: [11105.10] CAMINO DEL MAR (CARMEL VALLEY RD - DEL MAR HEIGHTS RD) SOUTHBOUND
Input A: 1 - North bound. - Lane= 0, Excluded from totals.
Input B: 3 - South bound. - Lane= 0, Added to totals. (/2.000)
Survey Duration: 19:07 Monday, October 17, 2011 => 12:55 Tuesday, October 25, 2011
File: 11105.10.S.25Oct2011.EC0 (Regular)
Data type: Axle sensors - Separate (Count)

Profile:

Filter time: 0:00 Tuesday, October 18, 2011 => 0:00 Wednesday, October 19, 2011

* Tuesday, October 18, 2011=7285, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
7	5	10	10	17	70	227	801	1154	760	430	417	499	505	504	382	372	386	253	157	129	119	53	24
4	0	3	2	3	13	39	110	298	231	108	94	113	137	135	107	103	111	78	39	32	36	13	11
0	2	0	2	4	17	42	189	284	191	118	93	122	117	98	108	90	110	63	42	32	27	9	3
2	0	6	1	2	20	54	234	302	184	107	108	123	128	130	92	96	79	45	37	37	33	18	5
1	3	1	5	9	21	93	268	271	154	99	123	142	125	143	76	83	87	68	39	28	23	14	5

AM Peak 0800 - 0900 (1154), AM PHF=0.96

**MetroCount Traffic Executive
Event Counts**

1832 -- English (ENU)

Datasets:

Site: [11105.10] CAMINO DEL MAR (CARMEL VALLEY RD - DEL MAR HEIGHTS RD) NORTHBOUND
Input A: 1 - North bound. - Lane= 0, Added to totals. (/2.000)
Input B: 0 - Unused or unknown. - Lane= 0, Excluded from totals.
Survey Duration: 19:33 Monday, October 17, 2011 => 12:57 Tuesday, October 25, 2011
File: 11105.10.N.25Oct2011.EC0 (Regular)
Data type: Axle sensors - Separate (Count)

Profile:

Filter time: 0:00 Tuesday, October 18, 2011 => 0:00 Wednesday, October 19, 2011

* Tuesday, October 18, 2011=6349, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
13	12	11	6	11	23	78	186	211	262	311	423	433	376	455	571	825	991	557	234	139	135	70	22
4	4	2	3	3	7	9	35	48	59	72	94	117	97	103	114	163	247	186	75	41	45	23	7
6	1	5	0	1	4	15	40	47	72	73	90	118	103	109	149	207	262	157	60	29	32	24	5
1	3	3	0	5	6	18	49	58	63	93	107	105	92	125	132	217	263	121	64	32	29	14	5
2	4	1	3	2	6	36	62	58	68	75	133	93	84	119	177	240	219	93	36	37	29	10	5

AM Peak 1130 - 1230 (474), AM PHF=0.89

MetroCount Traffic Executive Event Counts

1830 -- English (ENU)

Datasets:

Site: [11105.09] CREST WAY (NORTH OF LA AMATISTA RD) SOUTHBOUND
Input A: 0 - Unused or unknown. - Lane= 0, Excluded from totals.
Input B: 3 - South bound. - Lane= 0, Added to totals. (/2.000)
Survey Duration: 21:03 Wednesday, October 19, 2011 => 10:01 Monday, October 24, 2011
File: 11105.09.24Oct2011.EC0 (Base)
Data type: Axle sensors - Separate (Count)

Profile:

Filter time: 0:00 Thursday, October 20, 2011 => 0:00 Friday, October 21, 2011

* Thursday, October 20, 2011=757, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
3	0	1	1	0	8	15	89	51	55	58	52	44	42	70	62	58	45	40	16	15	24	8	2
1	0	0	1	0	2	3	5	16	13	13	10	7	10	16	10	11	16	12	3	6	6	5	0
0	0	1	0	0	1	4	25	7	15	6	12	12	9	27	16	12	13	14	3	3	7	3	0
2	0	0	0	0	2	2	30	15	13	20	16	15	11	16	24	20	8	9	1	0	5	0	1
0	0	0	0	0	3	6	26	13	14	20	14	10	12	11	12	15	8	5	9	6	6	0	1

AM Peak 0715 - 0815 (96), AM PHF=0.81

MetroCount Traffic Executive Event Counts

1831 -- English (ENU)

Datasets:

Site: [11105.09] CREST WAY (NORTH OF LA AMATISTA RD) NORTHBOUND
Input A: 1 - North bound. - Lane= 0, Added to totals. (/2.000)
Input B: 0 - Unused or unknown. - Lane= 0, Excluded from totals.
Survey Duration: 21:01 Wednesday, October 19, 2011 => 9:50 Monday, October 24, 2011
File: 11105.09.NB.24Oct2011.EC0 (Regular)
Data type: Axle sensors - Separate (Count)

Profile:

Filter time: 0:00 Thursday, October 20, 2011 => 0:00 Friday, October 21, 2011

* Thursday, October 20, 2011=881, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
2	2	2	1	1	3	23	37	47	58	39	48	68	48	70	71	89	107	64	41	23	21	15	6
2	0	1	1	0	0	4	6	18	11	14	7	18	13	9	17	20	25	22	11	6	3	3	1
0	1	1	0	0	0	6	12	16	17	13	10	11	11	14	17	26	29	19	10	5	8	6	1
0	0	0	0	0	1	3	13	8	6	6	12	25	11	24	22	16	30	9	9	6	6	5	2
0	1	0	0	1	2	10	6	6	24	6	19	14	13	23	15	27	23	14	11	6	4	1	2

AM Peak 1145 - 1245 (72), AM PHF=0.72

**MetroCount Traffic Executive
Event Counts**

1828 -- English (ENU)

Datasets:

Site: [11105.07] DEL MAR HEIGHTS RD (EAST OF I-5 NB RAMPS) WESTBOUND
Input A: 2 - East bound. - Lane= 0, Excluded from totals.
Input B: 4 - West bound. - Lane= 0, Added to totals. (/2.000)
Survey Duration: 20:32 Wednesday, October 19, 2011 => 9:52 Monday, October 24, 2011
File: 11105.07.24Oct2011.EC0 (Base)
Data type: Axle sensors - Split (Count)

Profile:

Filter time: 0:00 Thursday, October 20, 2011 => 0:00 Friday, October 21, 2011

* Thursday, October 20, 2011=22754, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
82	18	28	21	45	212	595	1863	2169	1396	1120	1234	1347	1312	1751	1741	1676	1853	1401	1060	789	463	384	198
37	8	7	6	7	37	93	291	518	373	262	286	391	295	359	475	422	455	425	297	207	127	91	56
16	3	8	4	15	49	121	431	596	368	309	307	323	324	457	458	418	530	334	267	278	117	103	65
14	1	9	5	10	62	161	584	575	322	253	318	307	366	429	412	443	491	348	262	159	103	90	34
15	6	4	6	13	64	221	558	481	334	296	323	326	328	506	397	394	377	295	235	146	116	100	44

AM Peak 0730 - 0830 (2255), AM PHF=0.95

**MetroCount Traffic Executive
Event Counts**

1827 -- English (ENU)

Datasets:

Site: [11105.07] DEL MAR HEIGHTS RD (EAST OF I-5 NB RAMPS) EASTBOUND
Input A: 2 - East bound. - Lane= 0, Added to totals. (/2.000)
Input B: 4 - West bound. - Lane= 0, Excluded from totals.
Survey Duration: 20:32 Wednesday, October 19, 2011 => 9:52 Monday, October 24, 2011
File: 11105.07.24Oct2011.EC0 (Base)
Data type: Axle sensors - Split (Count)

Profile:

Filter time: 0:00 Thursday, October 20, 2011 => 0:00 Friday, October 21, 2011

* Thursday, October 20, 2011=24314, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
95	42	33	29	54	230	629	1875	1797	1421	1141	1311	1422	1445	1869	1700	1942	2178	1821	1145	841	670	410	220
27	9	10	15	6	24	96	311	485	413	319	283	311	376	443	458	421	518	526	303	210	183	142	65
19	8	4	3	9	40	98	541	474	355	271	340	375	339	440	387	498	529	470	291	220	187	102	60
22	10	6	3	10	72	168	510	420	306	265	332	348	369	502	419	500	544	443	276	208	148	81	65
27	15	13	8	29	95	268	513	418	348	287	357	388	361	485	436	524	588	383	276	203	153	86	31

AM Peak 0715 - 0815 (2049), AM PHF=0.95

**MetroCount Traffic Executive
Event Counts**

1826 -- English (ENU)

Datasets:

Site: [11105.03] CAMINO DEL MAR (NORTH OF SANDY LN) SOUTHBOUND
Input A: 1 - North bound. - Lane= 0, Excluded from totals.
Input B: 3 - South bound. - Lane= 0, Added to totals. (/2.000)
Survey Duration: 20:37 Wednesday, October 19, 2011 => 10:06 Monday, October 24, 2011
File: 11105.03.24Oct2011.EC0 (Base)
Data type: Axle sensors - Split (Count)

Profile:

Filter time: 0:00 Thursday, October 20, 2011 => 0:00 Friday, October 21, 2011

* Thursday, October 20, 2011=6298, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
24	10	3	4	10	35	168	507	651	470	357	420	463	460	445	456	438	458	355	198	153	109	61	48
6	1	1	4	1	1	22	74	183	131	92	97	108	114	108	96	85	122	111	54	29	38	11	12
9	2	0	0	1	8	23	125	162	112	73	103	122	100	114	103	102	121	110	56	47	28	16	7
8	3	1	0	1	11	44	147	139	107	110	122	114	125	100	123	136	108	76	50	41	25	18	13
1	4	1	0	7	15	79	162	168	120	83	99	119	121	124	135	116	107	58	38	36	18	16	16

AM Peak 0730 - 0830 (653), AM PHF=0.89

**MetroCount Traffic Executive
Event Counts**

1825 -- English (ENU)

Datasets:

Site: [11105.03] CAMINO DEL MAR (NORTH OF SANDY LN) NORTHBOUND
Input A: 1 - North bound. - Lane= 0, Added to totals. (/2.000)
Input B: 3 - South bound. - Lane= 0, Excluded from totals.
Survey Duration: 20:37 Wednesday, October 19, 2011 => 10:06 Monday, October 24, 2011
File: 11105.03.24Oct2011.EC0 (Base)
Data type: Axle sensors - Split (Count)

Profile:

Filter time: 0:00 Thursday, October 20, 2011 => 0:00 Friday, October 21, 2011

* Thursday, October 20, 2011=6003, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
19	5	3	5	6	31	74	204	253	325	337	390	395	453	496	493	606	797	548	187	141	112	92	34
7	2	3	1	1	1	9	32	65	74	77	97	91	113	114	128	140	196	179	60	41	46	32	11
7	1	0	0	1	8	15	51	57	78	80	95	104	110	137	124	134	209	145	55	33	19	30	7
4	2	0	2	1	11	19	56	68	81	96	100	105	114	126	116	154	198	115	35	39	31	16	5
1	0	0	2	3	11	32	66	64	92	85	99	96	117	119	125	179	195	110	37	29	16	14	11

AM Peak 1145 - 1245 (398), AM PHF=0.95

**MetroCount Traffic Executive
Event Counts**

1823 -- English (ENU)

Datasets:

Site: [11105.02] VIA DE LA VALLE (EAST OF I-5 NB RAMPS) WESTBOUND
Input A: 0 - Unused or unknown. - Lane= 0, Excluded from totals.
Input B: 4 - West bound. - Lane= 0, Added to totals. (/2.000)
Survey Duration: 20:51 Wednesday, October 19, 2011 => 10:03 Monday, October 24, 2011
File: 11105.02.24Oct2011.EC0 (Regular)
Data type: Axle sensors - Separate (Count)

Profile:

Filter time: 0:00 Thursday, October 20, 2011 => 0:00 Friday, October 21, 2011

* Thursday, October 20, 2011=16402, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
65	29	20	23	62	165	481	1063	1272	1063	1048	996	1145	1106	1226	1328	1156	1196	1006	682	469	362	299	145
27	13	5	7	9	18	65	183	271	303	279	245	292	306	301	343	301	289	277	200	120	94	91	39
15	4	4	6	12	28	97	267	308	240	251	260	285	251	304	362	323	301	265	182	108	92	79	37
18	9	5	5	19	47	149	319	358	277	244	258	270	266	318	289	267	298	271	182	132	105	76	38
5	3	6	5	22	73	170	294	336	244	274	233	298	284	304	335	266	309	194	119	111	72	54	31

AM Peak 0815 - 0915 (1304), AM PHF=0.91

**MetroCount Traffic Executive
Event Counts**

1824 -- English (ENU)

Datasets:

Site: [11105.02] VIA DE LA VALLE (EAST OF I-5 NB RAMPS) EASTBOUND
Input A: 2 - East bound. - Lane= 0, Added to totals. (/2.000)
Input B: 0 - Unused or unknown. - Lane= 0, Excluded from totals.
Survey Duration: 20:53 Wednesday, October 19, 2011 => 10:06 Monday, October 24, 2011
File: 11105.02.EB.24Oct2011.EC0 (Base)
Data type: Axle sensors - Separate (Count)

Profile:

Filter time: 0:00 Thursday, October 20, 2011 => 0:00 Friday, October 21, 2011

* Thursday, October 20, 2011=16297, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
61	33	24	29	70	176	540	857	960	983	976	1140	1186	1063	1170	1355	1314	1219	1017	734	500	444	266	186
20	9	3	4	5	20	86	167	221	254	231	262	306	245	280	340	337	317	268	234	127	120	90	43
14	7	9	8	15	33	101	202	252	233	232	275	271	271	286	338	340	296	247	180	136	134	77	52
11	10	2	4	20	53	162	246	243	237	250	284	289	267	300	361	294	303	260	167	143	91	55	63
16	8	10	13	30	71	192	242	245	260	263	320	321	281	305	318	344	303	243	154	94	100	44	28

AM Peak 1145 - 1245 (1184), AM PHF=0.93

**MetroCount Traffic Executive
Event Counts**

825 -- English (ENU)

Datasets:
Site: [1135.F] JIMMY DURANTE BLVD (NORTH OF CAMINO DEL MAR) SOUTHBOUND
Input A: 1 - North bound. - Lane= 0, Excluded from totals.
Input B: 3 - South bound. - Lane= 0, Added to totals. (/2,000)
Survey Duration: 18:19 Monday, April 04, 2011 => 12:59 Thursday, April 07, 2011
File: 1135.F.07Apr2011.EC0 (Base)
Data type: Axle sensors - Separate (Count)

Profile:
Filter time: 0:00 Tuesday, April 05, 2011 => 0:00 Wednesday, April 06, 2011
In profile: Events = 9048 / 21984 (41.16%)

* Tuesday, April 05, 2011=4174, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
10	3	4	5	15	40	130	308	346	285	322	299	328	300	291	328	256	271	239	139	111	89	43	15
6	0	2	2	1	5	14	69	68	69	77	61	91	70	83	68	59	63	74	34	32	34	16	7
0	2	1	2	2	8	24	68	100	76	75	69	96	79	62	79	54	69	73	44	23	22	14	3
1	0	1	0	6	14	43	84	96	63	81	78	81	73	75	83	65	62	51	34	28	15	8	4
3	1	0	1	6	14	49	88	83	77	89	92	61	78	71	99	78	78	42	28	28	18	6	1

AM Peak 1145 - 1245 (359), AM PHF=0.93

**MetroCount Traffic Executive
Event Counts**

824 -- English (ENU)

Datasets:
Site: [1135.F] JIMMY DURANTE BLVD (NORTH OF CAMINO DEL MAR) NORTHBOUND
Input A: 1 - North bound. - Lane= 0, Added to totals. (/2,000)
Input B: 3 - South bound. - Lane= 0, Excluded from totals.
Survey Duration: 18:19 Monday, April 04, 2011 => 12:59 Thursday, April 07, 2011
File: 1135.F.07Apr2011.EC0 (Base)
Data type: Axle sensors - Separate (Count)

Profile:
Filter time: 0:00 Tuesday, April 05, 2011 => 0:00 Wednesday, April 06, 2011
In profile: Events = 9048 / 21984 (41.16%)

* Tuesday, April 05, 2011=4875, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
15	8	8	5	4	18	69	191	211	236	318	325	345	353	396	461	440	472	325	258	162	139	75	44
5	0	1	0	1	3	5	46	56	56	83	76	88	96	98	96	106	133	89	73	43	52	25	17
2	1	3	3	1	7	7	50	52	55	79	64	82	86	88	115	118	109	89	51	38	50	18	10
2	2	3	1	0	4	20	48	49	56	69	94	82	87	114	135	105	117	82	68	34	18	18	8
6	5	1	1	2	4	37	47	55	69	88	91	94	85	97	115	112	113	66	66	47	19	14	9

AM Peak 1130 - 1230 (355), AM PHF=0.94

**MetroCount Traffic Executive
Event Counts**

823 -- English (ENU)

Datasets:
Site: [1135.E] JIMMY DURANTE BLVD (VIA DE LA VALLE-MAIN ENTRANCE) SOUTHBOUND
Input A: 3 - South bound. - Lane= 0, Added to totals. (/2.000)
Input B: 0 - Unused or unknown. - Lane= 0, Excluded from totals.
Survey Duration: 17:52 Monday, April 04, 2011 => 13:00 Thursday, April 07, 2011
File: 1135.E.S07Apr2011.EC0 (Regular)
Data type: Axle sensors - Separate (Count)

Profile:
Filter time: 0:00 Tuesday, April 05, 2011 => 0:00 Wednesday, April 06, 2011
In profile: Events = 5202 / 13346 (38.98%)

* Tuesday, April 05, 2011=5202, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
13	4	5	6	19	45	210	362	439	365	370	364	402	357	361	408	338	341	323	179	134	103	43	17
8	0	2	3	1	4	24	73	83	96	81	75	108	80	99	100	70	79	93	52	35	39	15	7
0	2	1	1	3	8	32	83	115	88	89	92	123	98	84	98	74	89	98	51	31	24	13	4
1	0	1	1	7	15	65	88	124	81	104	87	93	88	83	106	87	82	70	43	29	19	10	5
4	2	1	1	8	18	89	118	117	101	97	111	78	91	96	105	108	91	63	33	39	21	5	1

AM Peak 0815 - 0915 (451), AM PHF=0.91

**MetroCount Traffic Executive
Event Counts**

822 -- English (ENU)

Datasets:
Site: [1135.E] JIMMY DURANTE BLVD (VIA DE LA VALLE-MAIN ENTRANCE) NORTHBOUND
Input A: 1 - North bound. - Lane= 0, Added to totals. (/2.000)
Input B: 0 - Unused or unknown. - Lane= 0, Excluded from totals.
Survey Duration: 17:50 Monday, April 04, 2011 => 12:55 Thursday, April 07, 2011
File: 1135.E.N07Apr2011.EC0 (Regular)
Data type: Axle sensors - Separate (Count)

Profile:
Filter time: 0:00 Tuesday, April 05, 2011 => 0:00 Wednesday, April 06, 2011
In profile: Events = 6056 / 15001 (40.37%)

* Tuesday, April 05, 2011=6056, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
17	9	8	6	6	19	79	215	235	278	360	433	430	434	476	568	580	631	402	321	211	170	124	48
5	0	1	1	4	3	12	49	54	61	100	108	117	134	123	110	137	180	112	107	51	59	29	18
2	1	3	3	0	8	12	56	56	79	91	88	106	92	106	123	138	147	106	66	52	58	36	12
2	2	3	0	0	6	19	54	59	69	72	119	104	114	125	201	141	153	98	74	43	23	38	8
8	6	1	2	2	2	36	57	67	70	97	118	104	95	124	135	165	151	87	75	65	30	21	10

AM Peak 1130 - 1230 (459), AM PHF=0.96

**MetroCount Traffic Executive
Event Counts**

819 -- English (ENU)

Datasets:
Site: [1135.C] VIA DE LA VALLE (JIMMY DURANTE BLVD-I-5 SB RAMPS) WESTBOUND
Input A: 4 - West bound. - Lane= 0, Added to totals. (/2.000)
Input B: 0 - Unused or unknown. - Lane= 0, Excluded from totals.
Survey Duration: 15:45 Tuesday, April 05, 2011 => 13:01 Thursday, April 07, 2011
File: 1135.C.W07Apr2011.EC0 (Base)
Data type: Axle sensors - Separate (Count)

Profile:
Filter time: 0:00 Wednesday, April 06, 2011 => 0:00 Thursday, April 07, 2011
In profile: Events = 17711 / 28987 (61.10%)

* Wednesday, April 06, 2011=17711, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
46	37	24	33	66	190	597	1152	1277	1235	1003	1177	1212	1221	1252	1247	1261	1380	1173	794	516	431	259	131
12	8	7	7	9	25	65	190	296	345	226	265	284	275	287	283	322	338	297	233	150	128	99	47
14	11	5	12	22	29	109	293	337	304	259	279	329	284	285	330	305	309	285	192	129	109	63	25
8	7	6	6	11	51	194	308	309	272	261	282	292	304	297	294	294	367	306	191	111	97	58	36
12	12	6	8	24	85	230	362	336	314	258	351	308	358	384	340	340	367	286	179	128	98	40	24

AM Peak 0815 - 0915 (1326), AM PHF=0.96

**MetroCount Traffic Executive
Event Counts**

818 -- English (ENU)

Datasets:
Site: [1135.C] VIA DE LA VALLE (JIMMY DURANTE BLVD-I-5 SB RAMPS) EASTBOUND
Input A: 2 - East bound. - Lane= 0, Added to totals. (/2.000)
Input B: 0 - Unused or unknown. - Lane= 0, Excluded from totals.
Survey Duration: 15:48 Tuesday, April 05, 2011 => 13:03 Thursday, April 07, 2011
File: 1135.C.E07Apr2011.EC0 (Base)
Data type: Axle sensors - Separate (Count)

Profile:
Filter time: 0:00 Wednesday, April 06, 2011 => 0:00 Thursday, April 07, 2011
In profile: Events = 19001 / 31166 (60.97%)

* Wednesday, April 06, 2011=19001, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
85	37	27	37	62	162	494	1204	1290	1135	1030	1078	1184	1313	1450	1512	1468	1471	1157	1011	747	580	325	146
35	14	10	12	18	30	81	179	302	307	277	219	289	306	362	448	396	418	341	274	200	182	124	50
26	6	4	10	9	26	82	292	344	289	250	257	296	349	369	334	371	388	305	269	180	168	86	34
15	9	10	9	24	53	144	378	350	270	265	305	296	327	362	388	336	359	247	240	187	122	65	33
10	8	4	7	12	54	189	356	295	271	238	298	304	331	357	343	365	307	265	228	181	108	50	30

AM Peak 0730 - 0830 (1378), AM PHF=0.91

MetroCount Traffic Executive
Vehicle Counts

1897 -- English (ENU)

Datasets:

Site: [11105.12] COAST BLVD (NORTH OF 15TH ST) SOUTHBOUND
Direction: 7 - North bound A>B, South bound B>A. Lane: 0
Survey Duration: 13:25 Tuesday, November 15, 2011 => 10:41 Thursday, November 17, 2011
File: 11105B.1217Nov2011.EC0 (Base)
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 0:00 Wednesday, November 16, 2011 => 0:00 Thursday, November 17, 2011
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Direction: South (bound)

* Wednesday, November 16, 2011 - Total=1823, 15 minute drops

	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
	3	0	1	8	10	8	41	127	100	96	119	134	153	144	167	117	124	111	78	83	94	60	29	16	
1	0	0	7	2	1	5	14	28	21	33	32	26	34	37	35	32	39	20	17	25	17	9	6		-
0	0	0	1	1	1	8	31	24	29	32	29	30	40	45	26	26	29	18	17	19	13	12	4		-
0	0	1	0	4	1	12	47	22	20	27	44	64	33	39	27	38	23	21	25	33	18	7	3		-
2	0	0	0	3	5	16	35	26	26	27	29	33	37	46	29	28	20	19	24	17	12	1	3		-

AM Peak 1145 - 1245 (149), AM PHF=0.58

Hour	Flow (Veh/Hour)	HOV	AUXILARY	TOTAL
10/27/2011 0:00	620	36	175	831
10/27/2011 1:00	431	11	106	548
10/27/2011 2:00	367	11	93	471
10/27/2011 3:00	392	2	77	471
10/27/2011 4:00	826	32	236	1094
10/27/2011 5:00	2388	83	677	3148
10/27/2011 6:00	5107	208	1742	7057
10/27/2011 7:00	6696	549	2918	10163
10/27/2011 8:00	6989	626	3106	10721
10/27/2011 9:00	6230	476	2380	9086
10/27/2011 10:00	5360	374	1801	7535
10/27/2011 11:00	5251	428	1833	7512
10/27/2011 12:00	5025	421	1979	7425
10/27/2011 13:00	4894	410	1849	7153
10/27/2011 14:00	5251	509	2274	8034
10/27/2011 15:00	5705	539	2606	8850
10/27/2011 16:00	5202	441	2594	8237
10/27/2011 17:00	4855	334	2583	7772
10/27/2011 18:00	4436	347	2259	7042
10/27/2011 19:00	3506	270	1476	5252
10/27/2011 20:00	2718	268	1138	4124
10/27/2011 21:00	2709	222	1027	3958
10/27/2011 22:00	2128	161	735	3024
10/27/2011 23:00	1428	68	387	1883
	88514	6826	36051	131391

AM PEAK	10721
PM PEAK	8237
Total	131391

I-5 SB South of Del Mar Heights Road

Hour	Flow (Veh/Hour)	VDLV Offramp	SB HOV	Total	# Lane Points
10/27/2011 0:00	694	25	7	726	48
10/27/2011 1:00	479	25	5	509	48
10/27/2011 2:00	407	15	6	428	48
10/27/2011 3:00	450	15	5	470	48
10/27/2011 4:00	971	28	14	1013	48
10/27/2011 5:00	2910	122	79	3111	48
10/27/2011 6:00	6444	347	319	7110	48
10/27/2011 7:00	8212	347	510	9069	48
10/27/2011 8:00	7957	393	508	8858	48
10/27/2011 9:00	7142	533	495	8170	48
10/27/2011 10:00	6074	499	385	6958	48
10/27/2011 11:00	5994	611	367	6972	48
10/27/2011 12:00	5786	572	321	6679	48
10/27/2011 13:00	5808	545	350	6703	48
10/27/2011 14:00	6295	496	401	7192	48
10/27/2011 15:00	6852	560	619	8031	48
10/27/2011 16:00	6946	588	534	8068	48
10/27/2011 17:00	6796	631	468	7895	48
10/27/2011 18:00	5815	495	334	6644	48
10/27/2011 19:00	4229	361	233	4823	48
10/27/2011 20:00	3195	229	195	3619	48
10/27/2011 21:00	3172	193	144	3509	48
10/27/2011 22:00	2366	131	101	2598	48
10/27/2011 23:00	1460	62	36	1558	48
	106454	7823	6436		

AM Peak 9069
PM Peak 8068

I-5 SB North of Via de la Valle

Hour	Flow (Veh/Hour)	# Lane Points	% Observed
10/27/2011 0:00	775	60	100
10/27/2011 1:00	457	60	100
10/27/2011 2:00	367	60	100
10/27/2011 3:00	399	60	100
10/27/2011 4:00	948	60	100
10/27/2011 5:00	2595	60	100
10/27/2011 6:00	5267	60	100
10/27/2011 7:00	6846	60	100
10/27/2011 8:00	7342	60	100
10/27/2011 9:00	7039	60	100
10/27/2011 10:00	6140	60	100
10/27/2011 11:00	6477	60	100
10/27/2011 12:00	6167	60	100
10/27/2011 13:00	6855	60	92
10/27/2011 14:00	7702	60	100
10/27/2011 15:00	7569	60	100
10/27/2011 16:00	7002	60	100
10/27/2011 17:00	7086	60	100
10/27/2011 18:00	7524	60	100
10/27/2011 19:00	5578	60	100
10/27/2011 20:00	4481	60	100
10/27/2011 21:00	3712	60	100
10/27/2011 22:00	2787	60	100
10/27/2011 23:00	1581	60	100
	112696		

AM Peak 7342
PM Peak 7524

I-5 NB South of Via de la Valle

Hour	Flow (Veh/Hour)	HOV	AUXILARY	TOTAL
10/27/2011 0:00	682	36	138	856
10/27/2011 1:00	401	11	75	487
10/27/2011 2:00	351	11	57	419
10/27/2011 3:00	376	2	62	440
10/27/2011 4:00	871	32	119	1022
10/27/2011 5:00	2400	83	360	2843
10/27/2011 6:00	4457	208	984	5649
10/27/2011 7:00	5347	549	1578	7474
10/27/2011 8:00	5514	626	1819	7959
10/27/2011 9:00	5460	476	1756	7692
10/27/2011 10:00	4793	374	1434	6601
10/27/2011 11:00	5075	428	1662	7165
10/27/2011 12:00	5167	421	1693	7281
10/27/2011 13:00	5307	410	1525	7242
10/27/2011 14:00	6045	509	1879	8433
10/27/2011 15:00	5427	539	2405	8371
10/27/2011 16:00	3747	441	2277	6465
10/27/2011 17:00	3906	334	2390	6630
10/27/2011 18:00	4900	347	2564	7811
10/27/2011 19:00	4510	270	1406	6186
10/27/2011 20:00	3542	268	996	4806
10/27/2011 21:00	3106	222	809	4137
10/27/2011 22:00	2348	161	533	3042
10/27/2011 23:00	1348	68	270	1686
Total	85080	6826	28791	120697

AM PEAK	7959
PM PEAK	7811
TOTAL	120697

I-5 NB South of Del Mar Heights Road

Hour	Flow (Veh/Hour)	NB HOV	EB ON RAMP from VDLV	WB ON RAMP from VDLV	Total
10/27/2011 0:00	559	9	19	36	623
10/27/2011 1:00	322	7	12	10	351
10/27/2011 2:00	263	4	7	5	279
10/27/2011 3:00	259	2	3	8	272
10/27/2011 4:00	717	23	10	20	770
10/27/2011 5:00	2223	124	29	67	2443
10/27/2011 6:00	4317	274	85	131	4807
10/27/2011 7:00	5451	309	203	266	6229
10/27/2011 8:00	5703	375	224	379	6681
10/27/2011 9:00	5479	478	183	334	6474
10/27/2011 10:00	4854	390	248	292	5784
10/27/2011 11:00	4943	383	231	320	5877
10/27/2011 12:00	5060	501	243	383	6187
10/27/2011 13:00	5628	612	258	341	6839
10/27/2011 14:00	6207	812	338	408	7765
10/27/2011 15:00	6082	1454	433	414	8383
10/27/2011 16:00	5939	1490	393	353	8175
10/27/2011 17:00	6095	1416	379	394	8284
10/27/2011 18:00	6076	1211	318	342	7947
10/27/2011 19:00	4713	632	259	247	5851
10/27/2011 20:00	3518	250	202	166	4136
10/27/2011 21:00	2969	172	198	137	3476
10/27/2011 22:00	2194	110	140	116	2560
10/27/2011 23:00	1151	29	107	64	1351
	90722	11067	4522	5233	111544
				AM PEAK	6681
				PM PEAK	8284

I-5 NB North of Via de la Valle

Hour	Flow (Veh/Hour)	# Lane Points	% Observed
10/27/2011 0:00	798	60	100
10/27/2011 1:00	526	60	100
10/27/2011 2:00	416	60	100
10/27/2011 3:00	491	60	100
10/27/2011 4:00	1012	60	100
10/27/2011 5:00	2964	60	100
10/27/2011 6:00	6695	60	100
10/27/2011 7:00	9278	60	100
10/27/2011 8:00	9181	60	100
10/27/2011 9:00	8115	60	100
10/27/2011 10:00	6814	60	100
10/27/2011 11:00	6724	60	100
10/27/2011 12:00	6500	60	100
10/27/2011 13:00	6526	60	92
10/27/2011 14:00	7306	60	100
10/27/2011 15:00	7738	60	100
10/27/2011 16:00	7786	60	100
10/27/2011 17:00	7712	60	100
10/27/2011 18:00	6730	60	100
10/27/2011 19:00	4892	60	100
10/27/2011 20:00	3798	60	100
10/27/2011 21:00	3586	60	100
10/27/2011 22:00	2644	60	100
10/27/2011 23:00	1679	60	100
	119911		

AM PEAK 9278
PM PEAK 7786

I-5 SB South of Via de la Valle

RAMP METER RATES

Location (I.D.)	Route	Dir	Period	Cars per green	Fast. rate (cyc./min.)	Slow. rate (cyc./min.)	Rate Delta	Sec./ Cycle	(per lane) Veh./hr	Total # lanes	HOV
EB Lomas Santa Fe Dr (341)	5	NB	1500 - 1900	2	8.3	5.4	0.21	7.2 - 11.2	996 - 643	2	Lt
WB Lomas Santa Fe Dr (132)	5	NB	1500 - 1900	2	8.3	5.4	0.21	7.2 - 11.2	996 - 643	2	Lt
EB Via de la Valle (130)	5	NB	1500 - 1900	1	9.5	6.2	0.30	6.3 - 9.7	570 - 372	2	No
WB Via de la Valle (131)	5	NB	1500 - 1900	1	9.5	7.9	0.27	6.3 - 7.6	570 - 473	2	Lt
Del Mar Heights Rd (129)	5	NB	1500 - 1900	2	8.3	4.9	0.24	7.2 - 12.1	996 - 593	2	No
WB Lomas Santa Fe Dr (340)	5	SB	0530 - 1100	2	8.3	4.1	0.30	7.2 - 14.6	996 - 492	2	Lt
			1400 - 1900	2	8.3	4.1	0.30	7.2 - 14.6	996 - 492	2	Lt
EB Lomas Santa Fe Dr (107)	5	SB	0530 - 1100	2	8.3	4.1	0.30	7.2 - 14.6	996 - 492	2	Lt
			1400 - 1900	2	8.3	4.1	0.30	7.2 - 14.6	996 - 492	2	Lt
WB Via de la Valle (105)	5	SB	0530 - 1100	1	9.5	7.1	0.27	6.3 - 8.5	570 - 424	2	No
			1400 - 1900	1	9.5	7.1	0.27	6.3 - 8.5	570 - 424	2	No
EB Via de la Valle (106)	5	SB	0530 - 1100	2	8.3	8.3	N/A	7.2	996	2	Lt
			1400 - 1900	2	8.3	8.3	N/A	7.2	996	2	Lt
WB Del Mar Heights Rd (82)	5	SB	0530 - 1100	1	9.5	5.9	0.26	6.3 - 10.2	570 - 352	2	No
			1400 - 1900	1	9.5	6.1	0.24	6.3 - 9.8	570 - 368	2	No
EB Del Mar Heights Rd (83)	5	SB	0530 - 1100	2	8.3	8.3	N/A	7.2	996	2	Lt
			1400 - 1900	2	8.3	8.3	N/A	7.2	996	2	Lt

There are 15 separate rates or steps that depend on the mainlane volumes. The Cycles/min. have a definite rate delta whereas the seconds/cycle from one rate to another can vary from 0.1 - 0.4 sec.

APPENDIX D

**PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS
EXISTING CONDITIONS**

HCM Signalized Intersection Capacity Analysis

1: Via De La Valle & Camino Del Mar

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗	↗	↖	↗	↖	↗	↖	↗
Volume (vph)	1	94	25	89	112	169	16	139	75	490	498	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1899	1615	1805	1900	1615	1805	3610	1615	1805	3610	1615	1615
Flt Permitted	1.00	1.00	0.69	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1894	1615	1315	1900	1615	1805	3610	1615	1805	3610	1615	1615
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)	1	99	26	94	118	178	17	146	79	516	524	18
RTOR Reduction (vph)	0	0	21	0	0	145	0	0	66	0	0	8
Lane Group Flow (vph)	0	100	5	94	118	33	17	146	13	516	524	10
Turn Type	Perm	Perm	Perm	Perm	Perm	Prot	Perm	Prot	Perm	Prot	Perm	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Actuated Green, G (s)		9.6	9.6	9.6	9.6	9.6	1.1	8.3	8.3	20.6	27.8	27.8
Effective Green, g (s)		9.6	9.6	9.6	9.6	9.6	1.1	8.3	8.3	20.6	27.8	27.8
Actuated g/C Ratio		0.18	0.18	0.18	0.18	0.18	0.02	0.16	0.16	0.40	0.53	0.53
Clearance Time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		350	298	243	351	298	38	576	258	715	1930	863
v/s Ratio Prot				0.06			0.01	0.04		c0.29	c0.15	
v/s Ratio Perm		0.05	0.00	c0.07		0.02			0.01			0.01
v/c Ratio		0.29	0.02	0.39	0.34	0.11	0.45	0.25	0.05	0.72	0.27	0.01
Uniform Delay, d1		18.2	17.3	18.6	18.4	17.6	25.1	19.1	18.5	13.3	6.6	5.7
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.5	0.0	1.0	0.6	0.2	8.2	0.2	0.1	3.6	0.1	0.0
Delay (s)		18.7	17.4	19.6	19.0	17.8	33.3	19.4	18.6	16.9	6.7	5.7
Level of Service		B	B	B	B	B	C	B	B	B	A	A
Approach Delay (s)		18.4			18.6			20.1			11.6	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	52.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

2: Via De La Valle & Jimmy Durante Blvd

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗	↗	↖	↗	↖	↗	↖	↗
Volume (vph)	45	755	29	630	545	325	22	60	207	438	103	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.0	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	1.00	0.88	0.97	1.00	1.00
Frt	1.00	0.99		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3590		3502	3408		1805	1900	2842	3502	1900	1615
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3590		3502	3408		1805	1900	2842	3502	1900	1615
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)	47	795	31	663	574	342	23	63	218	461	108	36
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	0	29
Lane Group Flow (vph)	47	823	0	663	916	0	23	63	218	461	108	7
Turn Type	Prot	Prot		Prot	Prot		Split	Free	Split	Split	Perm	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases									Free		6	6
Actuated Green, G (s)	4.8	22.9		17.8	35.9		6.6	6.6	79.8	14.5	14.5	14.5
Effective Green, g (s)	4.8	22.9		17.8	35.9		6.6	6.6	79.8	14.5	14.5	14.5
Actuated g/C Ratio	0.06	0.29		0.22	0.45		0.08	0.08	1.00	0.18	0.18	0.18
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	109	1030		781	1533		149	157	2842	636	345	293
v/s Ratio Prot	0.03	c0.23		c0.19	0.27		0.01	c0.03		c0.13	0.06	
v/s Ratio Perm									0.08			0.00
v/c Ratio	0.43	0.80		0.85	0.60		0.15	0.40	0.08	0.72	0.31	0.02
Uniform Delay, d1	36.2	26.3		29.7	16.5		34.0	34.7	0.0	30.8	28.3	26.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	4.4		8.6	0.6		0.5	1.7	0.1	4.1	0.5	0.0
Delay (s)	38.9	30.7		38.3	17.1		34.5	36.4	0.1	34.9	28.9	26.9
Level of Service	D	C		D	B		C	D	A	C	C	C
Approach Delay (s)		31.2			26.0			10.2			33.3	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	27.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	79.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

3: Via De La Valle & I-5 SB Off-Ramp

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑				↓	↓	↓
Volume (vph)	0	603	930	0	1116	593	0	0	0	182	0	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5	4.5	4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	0.93	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.97	1.00
Satd. Flow (prot)		3610	1615		3610	1615				1715	1565	1534
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.97	1.00
Satd. Flow (perm)		3610	1615		3610	1615				1715	1565	1534
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	635	979	0	1175	624	0	0	0	192	0	175
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	23	23	23
Lane Group Flow (vph)	0	635	979	0	1175	624	0	0	0	127	100	94
Turn Type		Free			Free					Split	Perm	
Protected Phases		4			8					6	6	
Permitted Phases		Free			Free						6	
Actuated Green, G (s)		16.6	31.8		16.6	31.8				6.2	6.2	
Effective Green, g (s)		16.6	31.8		16.6	31.8				6.2	6.2	
Actuated g/C Ratio		0.52	1.00		0.52	1.00				0.19	0.19	
Clearance Time (s)		4.5			4.5					4.5	4.5	
Vehicle Extension (s)		3.0			3.0					3.0	3.0	
Lane Grp Cap (vph)		1884	1615		1884	1615				334	305	299
v/s Ratio Prot		0.18			0.33					0.07	0.06	
v/s Ratio Perm		c0.61			0.39						0.06	
v/c Ratio		0.34	0.61		0.62	0.39				0.38	0.33	0.32
Uniform Delay, d1		4.4	0.0		5.4	0.0				11.1	11.0	11.0
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.1	1.7		0.6	0.7				0.7	0.6	0.6
Delay (s)		4.5	1.7		6.0	0.7				11.9	11.6	11.6
Level of Service		A			A					B	B	B
Approach Delay (s)		2.8			4.2			0.0		11.7		
Approach LOS		A			A			A		B		

Intersection Summary			
HCM Average Control Delay	4.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	31.8	Sum of lost time (s)	0.0
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

4: Via De La Valle & I-5 NB On-Ramp

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑				↓	↓	↓
Volume (vph)	0	527	267	0	975	379	684	0	453	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95	0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85	1.00	0.96	0.85	1.00	0.96	0.85
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.96	1.00	0.95	0.96	1.00
Satd. Flow (prot)		3610	1615		3610	1615	1715	1605	1534	1715	1605	1534
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.96	1.00	0.95	0.96	1.00
Satd. Flow (perm)		3610	1615		3610	1615	1715	1605	1534	1715	1605	1534
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	555	281	0	1026	399	720	0	477	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	27	104	0	0	0
Lane Group Flow (vph)	0	555	281	0	1026	399	410	383	273	0	0	0
Turn Type		Free			Free		Perm	Perm			Perm	
Protected Phases		4			8		2	2			2	
Permitted Phases		Free			Free		2	2			2	
Actuated Green, G (s)		15.8	40.0		15.8	40.0	15.2	15.2	15.2		15.2	
Effective Green, g (s)		15.8	40.0		15.8	40.0	15.2	15.2	15.2		15.2	
Actuated g/C Ratio		0.40	1.00		0.40	1.00	0.38	0.38	0.38		0.38	
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5		4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)		1426	1615		1426	1615	652	610	583		583	
v/s Ratio Prot		0.15			c0.28							
v/s Ratio Perm		0.17			0.25		c0.24	0.24	0.18			
v/c Ratio		0.39	0.17		0.72	0.25	0.63	0.63	0.47			
Uniform Delay, d1		8.7	0.0		10.2	0.0	10.1	10.1	9.4			
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.2	0.2		1.8	0.4	1.9	2.0	0.6			
Delay (s)		8.8	0.2		12.0	0.4	12.0	12.1	10.0			
Level of Service		A			B	A	B	B	A			
Approach Delay (s)		5.9			8.7		11.4		0.0			
Approach LOS		A			A		B		A			

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

5: Via De La Valle & San Andres Dr

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑↑	↑	↑	↑↑	↑↑	↑	↑	↑	↑	↑	↑
Volume (vph)	139	510	16	87	925	108	30	9	28	79	35	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.95	0.95			0.95	0.95
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89			0.95	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	1.00
Satd. Flow (prot)	3502	3610	1615	1805	3610	1615	1715	1608			1675	1534
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	1.00
Satd. Flow (perm)	3502	3610	1615	1805	3610	1615	1715	1608			1675	1534
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)	146	537	17	92	974	114	32	9	29	83	37	227
RTOR Reduction (vph)	0	0	11	0	0	69	0	27	0	0	20	135
Lane Group Flow (vph)	146	537	6	92	974	45	29	14	0	0	161	31
Turn Type	Prot	Perm	Perm	Prot	Perm	Split	Split	Split	Perm	Split	Perm	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4		8							6
Actuated Green, G (s)	4.8	23.2	23.2	6.6	25.0	25.0	3.7	3.7			12.0	12.0
Effective Green, g (s)	4.8	23.2	23.2	6.6	25.0	25.0	3.7	3.7			12.0	12.0
Actuated g/C Ratio	0.08	0.37	0.37	0.10	0.39	0.39	0.06	0.06			0.19	0.19
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	265	1319	590	188	1421	636	100	94			317	290
v/s Ratio Prot	0.04	0.15		c0.05	c0.27		c0.02	0.01			c0.10	
v/s Ratio Perm			0.00		0.03							0.02
v/c Ratio	0.55	0.41	0.01	0.49	0.69	0.07	0.29	0.15			0.51	0.11
Uniform Delay, d1	28.3	15.0	12.8	26.9	16.0	12.0	28.6	28.4			23.1	21.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	2.5	0.2	0.0	2.0	1.4	0.0	1.6	0.7			1.3	0.2
Delay (s)	30.8	15.2	12.8	28.9	17.4	12.1	30.3	29.1			24.4	21.5
Level of Service	C	B	B	C	B	B	C	C			C	C
Approach Delay (s)	18.4			17.8			29.6			23.0		
Approach LOS	B			B			C			C		

Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	63.5	Sum of lost time (s)	13.5
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Level of Service Computation Report
 2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #6 Camino Del Mar & Coast Blvd

Cycle (sec): 100 Critical Vol./Cap.(X): 0.805
 Loss Time (sec): 0 Average Delay (sec/veh): 19.7
 Optimal Cycle: 0 Level of Service: C

Street Name: Camino Del Mar Coast Blvd

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Stop Sign	Stop Sign	Stop Sign	Stop Sign
Rights:	Include	Include	Include	Include
Min. Green:	5 5 5	5 5 5	5 5 5	5 5 5
Lanes:	1 0 1 0 1	1 0 1 0 1	0 1 0 0 1	0 0 1! 0 0

Volume Module:

Base Vol:	9 147 5	7 524 70	45 1 8	9 1 5
Growth Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	9 147 5	7 524 70	45 1 8	9 1 5
Added Vol:	0 0 0	0 0 0	0 0 0	0 0 0
PasserByVol:	0 0 0	0 0 0	0 0 0	0 0 0
Initial Fut:	9 147 5	7 524 70	45 1 8	9 1 5
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	0.95 0.95 0.95	0.95 0.95 0.95	0.95 0.95 0.95	0.95 0.95 0.95
PHF Volume:	9 155 5	7 552 74	47 1 8	9 1 5
Reduced Vol:	0 0 0	0 0 0	0 0 0	0 0 0
PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Volume:	9 155 5	7 552 74	47 1 8	9 1 5

Saturation Flow Module:

Adjustment:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Lanes:	1.00 1.00 1.00	1.00 1.00 1.00	0.98 0.02 1.00	0.60 0.07 0.33
Final Sat.:	520 565 630	619 685 782	477 11 580	312 35 173

Capacity Analysis Module:

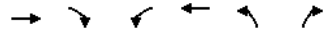
Vol/Sat:	0.02 0.27 0.01	0.01 0.81 0.09	0.10 0.10 0.01	0.03 0.03 0.03
Crit Moves:	****	****	****	****
Delay/Veh:	9.4 10.9 8.1	8.5 25.4 7.7	10.4 10.4 8.5	9.6 9.6 9.6
Delay Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
AdjDel/Veh:	9.4 10.9 8.1	8.5 25.4 7.7	10.4 10.4 8.5	9.6 9.6 9.6
LOS by Move:	A B A	A D A	B B A	A A A
ApproachDel:	10.7	23.2	10.1	9.6
Delay Adj:	1.00	1.00	1.00	1.00
ApprAdjDel:	10.7	23.2	10.1	9.6
LOS by Appr:	B	C	B	A
AllWayAvgQ:	0.4 8.4 0.2	0.3 83.2 2.5	2.4 2.4 0.3	0.7 0.7 0.7

Note: Queue reported is the distance per lane in feet.

HCM Unsignalized Intersection Capacity Analysis

7: 15th St & Stratford Ct

1/31/2012



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Volume (veh/h)	92	17	20	79	9	16
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	97	18	21	83	9	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				311		
pX, platoon unblocked						
vC, conflicting volume			115		231	106
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			115		231	106
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		99	98
cM capacity (veh/h)			1487		751	954

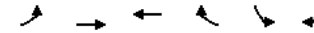
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	115	104	26
Volume Left	0	21	9
Volume Right	18	0	17
cSH	1700	1487	869
Volume to Capacity	0.07	0.01	0.03
Queue Length 95th (ft)	0	1	2
Control Delay (s)	0.0	1.6	9.3
Lane LOS		A	A
Approach Delay (s)	0.0	1.6	9.3
Approach LOS			A

Intersection Summary			
Average Delay		1.7	
Intersection Capacity Utilization	21.9%		ICU Level of Service A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

8: 12th St & Stratford Ct

1/31/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Volume (veh/h)	15	13	4	3	6	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	16	14	4	3	6	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	7				51	6
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	7				51	6
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				99	99
cM capacity (veh/h)	1626				953	1083

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	29	7	14
Volume Left	16	0	6
Volume Right	0	3	7
cSH	1626	1700	1019
Volume to Capacity	0.01	0.00	0.01
Queue Length 95th (ft)	1	0	1
Control Delay (s)	3.9	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	3.9	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay		4.6	
Intersection Capacity Utilization	18.2%		ICU Level of Service A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis

9: 15th St & Camino Del Mar

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Volume (vph)	19	10	63	36	7	57	61	257	49	88	651	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	0.95
Frbp, ped/bikes	1.00	0.83	1.00	1.00	0.86	1.00	0.98	1.00	1.00	1.00	1.00	1.00
Fipb, ped/bikes	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	1.00	0.85	1.00	1.00	0.85	1.00	0.98	1.00	0.99	1.00	0.99	0.99
Flt Protected	0.97	1.00	0.95	0.97	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1841	1340	1715	1744	1383	1805	3451	1805	3568	1805	3568	3568
Flt Permitted	0.97	1.00	0.95	0.97	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1841	1340	1715	1744	1383	1805	3451	1805	3568	1805	3568	3568
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)	20	11	66	38	7	60	64	271	52	93	685	38
RTOR Reduction (vph)	0	0	62	0	0	56	0	20	0	0	5	0
Lane Group Flow (vph)	0	31	4	22	23	4	64	303	0	93	718	0
Confl. Peds. (#/hr)			36			29			78			37
Turn Type	Split	Perm	Split	Perm	Prot	Prot	Prot	Prot	Prot	Prot	Prot	Prot
Protected Phases	7	7		3	3		5	2		1	6	
Permitted Phases			7		3							
Actuated Green, G (s)	3.0	3.0	2.9	2.9	2.9	3.5	17.1			3.8	17.4	
Effective Green, g (s)	3.0	3.0	2.9	2.9	2.9	3.5	17.1			3.8	17.4	
Actuated g/C Ratio	0.07	0.07	0.06	0.06	0.06	0.08	0.38			0.08	0.39	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	
Lane Grp Cap (vph)	123	90	111	113	90	141	1317			153	1386	
v/s Ratio Prot	c0.02		0.01	c0.01		0.04	0.09			c0.05	c0.20	
v/s Ratio Perm		0.00			0.00							
v/c Ratio	0.25	0.05	0.20	0.20	0.04	0.45	0.23			0.61	0.52	
Uniform Delay, d1	19.8	19.6	19.8	19.9	19.6	19.7	9.4			19.8	10.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	
Incremental Delay, d2	1.1	0.2	0.9	0.9	0.2	2.3	0.1			6.7	0.3	
Delay (s)	20.9	19.8	20.7	20.7	19.8	22.0	9.5			26.5	10.8	
Level of Service	C	B	C	C	B	C	A			C	B	
Approach Delay (s)	20.2			20.2			11.6				12.6	
Approach LOS	C			C			B				B	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	44.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #10 Camino Del Mar & 13th St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.583
Loss Time (sec): 0 Average Delay (sec/veh): 12.9
Optimal Cycle: 0 Level Of Service: B

Street Name: Camino Del Mar 13th St

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R

Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 5 5 5 5 5 5 5 5 5 5 5 5
Lanes: 1 0 1 1 0 1 0 1 1 0 0 0 1! 0 0 0 0 1! 0 0

Volume Module:

Base Vol:	71	350	6	30	746	14	14	0	29	17	2	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	71	350	6	30	746	14	14	0	29	17	2	6
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	71	350	6	30	746	14	14	0	29	17	2	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	75	368	6	32	785	15	15	0	31	18	2	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	75	368	6	32	785	15	15	0	31	18	2	6
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	75	368	6	32	785	15	15	0	31	18	2	6

Saturation Flow Module:

Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.97	0.03	1.00	1.96	0.04	0.33	0.00	0.67	0.68	0.08	0.24
Final Sat.:	574	1236	21	621	1346	25	186	0	386	365	43	129

Capacity Analysis Module:

Vol/Sat:	0.13	0.30	0.30	0.05	0.58	0.58	0.08	xxxx	0.08	0.05	0.05	0.05
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Delay/Veh:	9.7	10.6	10.6	8.7	14.8	14.7	9.4	0.0	9.4	9.6	9.6	9.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.7	10.6	10.6	8.7	14.8	14.7	9.4	0.0	9.4	9.6	9.6	9.6
LOS by Move:	A	B	B	A	B	B	A	*	A	A	A	A
ApproachDel:	10.4			14.6			9.4			9.6		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	10.4			14.6			9.4			9.6		
LOS by Appr:	B			B			A			A		
AllWayAvgQ:	3.5	10.0	10.0	1.3	33.0	32.6	1.9	1.9	1.9	1.1	1.1	1.1

Note: Queue reported is the distance per lane in feet.

HCM Unsignalized Intersection Capacity Analysis

11: 12th St & Camino Del Mar

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑		↑↑	↑		↑↑	
Volume (veh/h)	0	0	16	0	0	4	0	454	15	0	793	12
Sign Control	Stop			Stop			Free			Free		
Grade	0%			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
Hourly flow rate (vph)	0	0	17	0	0	4	0	478	16	0	835	13
Pedestrians	4			46			43			4		
Lane Width (ft)	12.0			12.0			12.0			12.0		
Walking Speed (ft/s)	4.0			4.0			4.0			4.0		
Percent Blockage	0			4			4			4		
Right turn flare (veh)												
Median type	None			None			None			None		
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1131	1339	474	958	1329	282	851			494		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1131	1339	474	958	1329	282	851			494		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	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 %	100	100	97	100	100	99	100			100		
cM capacity (veh/h)	153	154	520	199	156	695	793			1080		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	17	4	239	239	16	556	291
Volume Left	0	0	0	0	0	0	0
Volume Right	17	4	0	0	16	0	13
cSH	520	695	1700	1700	1700	1700	1700
Volume to Capacity	0.03	0.01	0.14	0.14	0.01	0.33	0.17
Queue Length 95th (ft)	3	0	0	0	0	0	0
Control Delay (s)	12.2	10.2	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	B					
Approach Delay (s)	12.2	10.2	0.0			0.0	
Approach LOS	B	B					

Intersection Summary		
Average Delay		0.2
Intersection Capacity Utilization	40.5%	ICU Level of Service
Analysis Period (min)	15	A

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #12 Camino Del Mar & 11th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.581
Loss Time (sec): 0 Average Delay (sec/veh): 13.1
Optimal Cycle: 0 Level Of Service: B

Street Name: Camino Del Mar 11th St
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 5 5 5 5 5 5 5 5
Lanes: 1 0 1 1 0 1 0 2 0 1 0 0 1! 0 0 0 0 1! 0 0

Volume Module:
Base Vol: 33 415 17 19 747 21 23 2 13 20 3 7
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 33 415 17 19 747 21 23 2 13 20 3 7
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 33 415 17 19 747 21 23 2 13 20 3 7
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 35 437 18 20 786 22 24 2 14 21 3 7
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 35 437 18 20 786 22 24 2 14 21 3 7
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 35 437 18 20 786 22 24 2 14 21 3 7

Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 1.00 1.92 0.08 1.00 2.00 1.00 0.61 0.05 0.34 0.67 0.10 0.23
Final Sat.: 573 1212 50 616 1353 775 329 29 186 355 53 124

Capacity Analysis Module:
Vol/Sat: 0.06 0.36 0.36 0.03 0.58 0.03 0.07 0.07 0.07 0.06 0.06 0.06
Crit Moves: **** *
Delay/Veh: 9.2 11.3 11.2 8.7 14.9 7.4 9.7 9.7 9.7 9.7 9.7 9.7
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 9.2 11.3 11.2 8.7 14.9 7.4 9.7 9.7 9.7 9.7 9.7 9.7
LOS by Move: A B B A B A A A A A A A
ApproachDel: 11.2 14.5 9.7 9.7
Delay Adj: 1.00 1.00 1.00 1.00
ApprAdjDel: 11.2 14.5 9.7 9.7
LOS by Appr: B B A A
AllWayAvgQ: 1.5 13.3 13.1 0.8 32.4 0.7 1.7 1.7 1.7 1.4 1.4 1.4

Note: Queue reported is the distance per lane in feet.

HCM Signalized Intersection Capacity Analysis

13: 9th St & Camino Del Mar

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↕			↕		
Volume (vph)	36	1	31	13	2	6	40	435	8	24	717	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5				4.5		4.5		4.5		4.5	
Lane Util. Factor	1.00				1.00		0.95		1.00		0.95	
Frbp, ped/bikes	0.98				0.99		1.00		1.00		1.00	
Fipb, ped/bikes	0.99				0.98		1.00		1.00		1.00	
Frt	0.94				0.96		1.00		1.00		0.99	
Fit Protected	0.97				0.97		0.95		1.00		0.95	
Satd. Flow (prot)	1680				1725		1805		3601		1805	
Fit Permitted	1.00				1.00		0.95		1.00		0.95	
Satd. Flow (perm)	1724				1780		1805		3601		1805	
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)	38	1	33	14	2	6	42	458	8	25	755	36
RTOR Reduction (vph)	0	30	0	0	6	0	0	1	0	0	5	0
Lane Group Flow (vph)	0	42	0	0	16	0	42	465	0	25	786	0
Confl. Peds. (#/hr)	43		46		46		43		4		4	
Turn Type	Perm		Perm		Prot		Prot					
Protected Phases	4		8		5		2		1		6	
Permitted Phases	4		8		5		2		1		6	
Actuated Green, G (s)	2.6		2.6		1.8		17.4		0.8		16.4	
Effective Green, g (s)	2.6		2.6		1.8		17.4		0.8		16.4	
Actuated g/C Ratio	0.08		0.08		0.05		0.51		0.02		0.48	
Clearance Time (s)	4.5		4.5		4.5		4.5		4.5		4.5	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	199		170		408		414		808		71	
v/s Ratio Prot	c0.06		0.17		c0.17		0.07		0.01		0.04	
v/s Ratio Perm	0.00		0.06		0.06		0.06		0.01		0.01	
v/c Ratio	0.60		0.02		0.71		0.71		0.26		0.35	
Uniform Delay, d1	28.4		26.6		23.2		23.2		9.5		31.1	
Progression Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Incremental Delay, d2	4.8		0.1		5.8		5.7		0.2		3.0	
Delay (s)	33.1		26.7		29.0		28.9		9.7		34.1	
Level of Service	C		C		C		A		C		C	
Approach Delay (s)	31.5		20.9		27.4		27.4		21.2		21.2	
Approach LOS	C		C		C		C		C		C	
Intersection Summary												
HCM Average Control Delay	7.3		HCM Level of Service		A							
HCM Volume to Capacity ratio	0.44											
Actuated Cycle Length (s)	34.3		Sum of lost time (s)		13.5							
Intersection Capacity Utilization	47.3%		ICU Level of Service		A							
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

14: Del Mar Heights Rd & Camino Del Mar

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↕			↕		
Volume (vph)	12	101	37	493	64	399	24	147	64	327	532	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5		4.5		4.5		4.5	
Lane Util. Factor	1.00		1.00		0.95		1.00		0.95		1.00	
Frt	1.00		0.85		1.00		0.85		1.00		0.85	
Fit Protected	0.99		1.00		0.95		0.96		1.00		0.95	
Satd. Flow (prot)	1890		1615		1715		1738		1615		1805	
Fit Permitted	0.99		1.00		0.95		0.96		1.00		0.95	
Satd. Flow (perm)	1890		1615		1715		1738		1615		1805	
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)	13	106	39	519	67	420	25	155	67	344	560	7
RTOR Reduction (vph)	0	0	35	0	0	210	0	0	59	0	1	0
Lane Group Flow (vph)	0	119	4	291	295	210	25	155	8	344	566	0
Turn Type	Split		Perm		Split		pm+ov		Prot		Perm	
Protected Phases	7		7		3		3		1		5	
Permitted Phases	7		7		3		3		1		5	
Actuated Green, G (s)	7.0		7.0		15.8		15.8		33.2		2.6	
Effective Green, g (s)	7.0		7.0		15.8		15.8		33.2		2.6	
Actuated g/C Ratio	0.11		0.11		0.24		0.24		0.50		0.04	
Clearance Time (s)	4.5		4.5		4.5		4.5		4.5		4.5	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	199		170		408		414		808		71	
v/s Ratio Prot	c0.06		0.17		c0.17		0.07		0.01		0.04	
v/s Ratio Perm	0.00		0.06		0.06		0.06		0.01		0.01	
v/c Ratio	0.60		0.02		0.71		0.71		0.26		0.35	
Uniform Delay, d1	28.4		26.6		23.2		23.2		9.5		31.1	
Progression Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Incremental Delay, d2	4.8		0.1		5.8		5.7		0.2		3.0	
Delay (s)	33.1		26.7		29.0		28.9		9.7		34.1	
Level of Service	C		C		C		A		C		C	
Approach Delay (s)	31.5		20.9		27.4		27.4		21.2		21.2	
Approach LOS	C		C		C		C		C		C	
Intersection Summary												
HCM Average Control Delay	22.4		HCM Level of Service		C							
HCM Volume to Capacity ratio	0.62											
Actuated Cycle Length (s)	66.4		Sum of lost time (s)		13.5							
Intersection Capacity Utilization	55.4%		ICU Level of Service		B							
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

15: Carmel Valley Rd & Camino Del Mar

1/31/2012

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↘	↗	↑
Volume (vph)	570	68	104	50	178	828
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
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)	1805	1615	1900	1615	1805	1900
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1615	1900	1615	1805	1900
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	600	72	109	53	187	872
RTOR Reduction (vph)	0	46	0	37	0	0
Lane Group Flow (vph)	600	26	109	16	187	872
Turn Type	Perm		Perm		Prot	
Protected Phases	8		2		1	6
Permitted Phases	8		2			
Actuated Green, G (s)	25.8	25.8	21.6	21.6	10.1	36.2
Effective Green, g (s)	25.8	25.8	21.6	21.6	10.1	36.2
Actuated g/C Ratio	0.36	0.36	0.30	0.30	0.14	0.51
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	656	587	578	491	257	969
v/s Ratio Prot	c0.33		0.06		0.10	c0.46
v/s Ratio Perm		0.02		0.01		
v/c Ratio	0.91	0.04	0.19	0.03	0.73	0.90
Uniform Delay, d1	21.5	14.6	18.2	17.4	29.1	15.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	17.3	0.0	0.2	0.0	9.8	11.0
Delay (s)	38.9	14.7	18.4	17.4	39.0	26.8
Level of Service	D	B	B	B	D	C
Approach Delay (s)	36.3		18.1			29.0
Approach LOS	D		B			C

Intersection Summary			
HCM Average Control Delay	30.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	71.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

16: Del Mar Heights Rd & Crest Way

1/31/2012

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗	↘	↘	↗
Volume (vph)	4	766	719	152	88	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1805	3610	3610	1615	1805	
Flt Permitted	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1805	3610	3610	1615	1805	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	806	757	160	93	0
RTOR Reduction (vph)	0	0	0	92	0	0
Lane Group Flow (vph)	4	806	757	68	93	0
Turn Type	Prot		Perm		Perm	
Protected Phases	7	4	8		6	
Permitted Phases			8			
Actuated Green, G (s)	0.7	18.3	13.1	13.1	3.7	
Effective Green, g (s)	0.7	18.3	13.1	13.1	3.7	
Actuated g/C Ratio	0.02	0.59	0.42	0.42	0.12	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	41	2131	1526	682	215	
v/s Ratio Prot	0.00	c0.22	c0.21		c0.05	
v/s Ratio Perm				0.04		
v/c Ratio	0.10	0.38	0.50	0.10	0.43	
Uniform Delay, d1	14.8	3.3	6.5	5.4	12.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	0.1	0.3	0.1	1.4	
Delay (s)	15.9	3.5	6.8	5.5	14.1	
Level of Service	B	A	A	A	B	
Approach Delay (s)		3.5	6.6		14.1	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	5.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	31.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

17: Del Mar Heights Rd & I-5 SB Off-Ramp

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑				↓	↓	↓
Volume (vph)	0	642	698	0	936	965	0	0	0	815	0	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5	4.5	4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	0.99	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)		3610	1615		3610	1615				1715	1635	1534
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)		3610	1615		3610	1615				1715	1635	1534
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	676	735	0	985	1016	0	0	0	858	0	313
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	7	17
Lane Group Flow (vph)	0	676	735	0	985	1016	0	0	0	446	436	265
Turn Type		Free			Free					Split	Perm	
Protected Phases		4			8					1	1	
Permitted Phases		Free			Free						1	
Actuated Green, G (s)		14.8	39.6		14.8	39.6				15.8	15.8	15.8
Effective Green, g (s)		14.8	39.6		14.8	39.6				15.8	15.8	15.8
Actuated g/C Ratio		0.37	1.00		0.37	1.00				0.40	0.40	0.40
Clearance Time (s)		4.5			4.5					4.5	4.5	4.5
Vehicle Extension (s)		3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1349	1615		1349	1615				684	652	612
v/s Ratio Prot		0.19			0.27					0.26	0.27	
v/s Ratio Perm		0.46			c0.63						0.17	
v/c Ratio		0.50	0.46		0.73	0.63				0.65	0.67	0.43
Uniform Delay, d1		9.6	0.0		10.7	0.0				9.7	9.8	8.6
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.3	0.9		2.1	1.9				2.2	2.6	0.5
Delay (s)		9.8	0.9		12.7	1.9				11.9	12.4	9.1
Level of Service		A			B					B	B	
Approach Delay (s)		5.2			7.2			0.0		11.4		
Approach LOS		A			A			A		B		
Intersection Summary												
HCM Average Control Delay		7.7			HCM Level of Service			A				
HCM Volume to Capacity ratio		0.63										
Actuated Cycle Length (s)		39.6			Sum of lost time (s)			0.0				
Intersection Capacity Utilization		59.0%			ICU Level of Service			B				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

18: Del Mar Heights Rd & I-5 NB On-Ramp

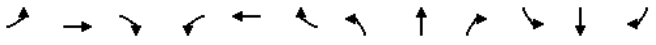
1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑↑	↑				↓	↓	↓
Volume (vph)	236	1255	0	0	1494	807	370	0	811	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5	4.5	4.5	4.5	4.5			
Lane Util. Factor		0.97	0.95		0.91	1.00	0.95	0.91	0.95			
Frt		1.00	1.00		1.00	0.85	1.00	0.86	0.85			
Flt Protected		0.95	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		3502	3610		5187	1615	1715	1486	1534			
Flt Permitted		0.95	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		3502	3610		5187	1615	1715	1486	1534			
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)	248	1321	0	0	1573	849	389	0	854	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	558	0	20	20	0	0	0
Lane Group Flow (vph)	248	1321	0	0	1573	291	350	429	424	0	0	0
Turn Type		Prot			Perm					Split	Perm	
Protected Phases		7			4					8	2	
Permitted Phases										8	2	
Actuated Green, G (s)		6.5	32.6		21.6	21.6	21.5	21.5	21.5			
Effective Green, g (s)		6.5	32.6		21.6	21.6	21.5	21.5	21.5			
Actuated g/C Ratio		0.10	0.52		0.34	0.34	0.34	0.34	0.34			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)		361	1865		1776	553	584	506	523			
v/s Ratio Prot		0.07	c0.37		c0.30		0.20	c0.29				
v/s Ratio Perm							0.18		0.28			
v/c Ratio		0.69	0.71		0.89	0.53	0.60	0.85	0.81			
Uniform Delay, d1		27.3	11.6		19.6	16.6	17.2	19.3	18.9			
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2		5.4	1.3		5.7	0.9	1.7	12.4	9.0			
Delay (s)		32.7	12.9		25.3	17.5	18.9	31.7	28.0			
Level of Service		C			B		B	C	C			
Approach Delay (s)		16.0			22.6			26.8		0.0		
Approach LOS		B			C			C		A		
Intersection Summary												
HCM Average Control Delay		21.6			HCM Level of Service			C				
HCM Volume to Capacity ratio		0.87										
Actuated Cycle Length (s)		63.1			Sum of lost time (s)			13.5				
Intersection Capacity Utilization		86.5%			ICU Level of Service			E				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

19: Del Mar Heights Rd & High Bluff Dr

1/31/2012



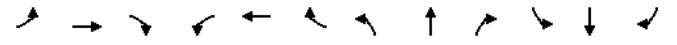
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	90	1164	785	111	1899	70	176	12	5	84	42	337
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.97	0.95	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99	1.00	0.96	1.00	1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1615	1805	5159	3502	3460	1805	1900	1615	1900	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1615	1805	5159	3502	3460	1805	1900	1615	1900	1615
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)	95	1225	826	117	1999	74	185	13	5	88	44	355
RTOR Reduction (vph)	0	0	276	0	4	0	0	5	0	0	0	45
Lane Group Flow (vph)	95	1225	550	117	2069	0	185	13	0	88	44	310
Turn Type	Prot	pm+ov	Prot	Prot	pm+ov	Prot	Prot	pm+ov	Prot	pm+ov	Prot	pm+ov
Protected Phases	7	4	5	3	8	5	2	1	6	7	6	6
Permitted Phases	4											
Actuated Green, G (s)	6.1	35.1	46.1	8.0	37.0	11.0	4.2	13.1	6.3	12.4	12.4	12.4
Effective Green, g (s)	6.1	35.1	46.1	8.0	37.0	11.0	4.2	13.1	6.3	12.4	12.4	12.4
Actuated g/C Ratio	0.08	0.45	0.59	0.10	0.47	0.14	0.05	0.17	0.08	0.16	0.16	0.16
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	140	2322	1042	184	2435	491	185	302	153	348	153	348
v/s Ratio Prot	0.05	0.24	c0.07	0.06	c0.40	0.05	0.00	0.05	0.02	c0.07	c0.07	c0.07
v/s Ratio Perm	0.27											
v/c Ratio	0.68	0.53	0.53	0.64	0.85	0.38	0.07	0.29	0.29	0.89	0.89	0.89
Uniform Delay, d1	35.2	15.7	9.6	33.8	18.3	30.6	35.2	28.6	33.9	32.3	32.3	32.3
Progression 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
Incremental Delay, d2	12.3	0.2	0.5	7.0	3.0	0.5	0.2	0.5	1.0	23.7	23.7	23.7
Delay (s)	47.5	15.9	10.1	40.8	21.2	31.1	35.4	29.1	35.0	56.0	56.0	56.0
Level of Service	D	B	B	D	C	C	D	C	C	C	C	E
Approach Delay (s)	15.1			22.3			31.5			49.2		
Approach LOS	B			C			C			D		

Intersection Summary			
HCM Average Control Delay	22.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	78.4	Sum of lost time (s)	0.0
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

20: Del Mar Heights Rd & El Camino Real

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	258	893	248	224	1672	70	233	123	139	173	361	488
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.91	0.97	0.91	0.97	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Frt	1.00	0.97	1.00	0.99	1.00	0.99	1.00	1.00	0.85	1.00	0.91	0.91
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3502	5018	3502	5156	3502	5156	3502	5187	1615	3502	4740	4740
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5018	3502	5156	3502	5156	3502	5187	1615	3502	4740	4740
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)	272	940	261	236	1760	74	245	129	146	182	380	514
RTOR Reduction (vph)	0	61	0	0	6	0	0	0	21	0	160	0
Lane Group Flow (vph)	272	1140	0	236	1828	0	245	129	125	182	734	0
Turn Type	Prot	pm+ov	Prot	Prot	pm+ov	Prot	Prot	pm+ov	Prot	pm+ov	Prot	pm+ov
Protected Phases	7	4	3	8	5	2	3	1	6	7	6	6
Permitted Phases	2											
Actuated Green, G (s)	7.5	27.6	9.4	29.5	6.9	14.2	23.6	10.1	17.4	17.4	17.4	17.4
Effective Green, g (s)	7.5	27.6	9.4	29.5	6.9	14.2	23.6	10.1	17.4	17.4	17.4	17.4
Actuated g/C Ratio	0.09	0.35	0.12	0.37	0.09	0.18	0.30	0.13	0.22	0.22	0.22	0.22
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	331	1746	415	1918	305	929	572	446	1040	446	1040	1040
v/s Ratio Prot	c0.08	0.23	0.07	c0.35	c0.07	0.02	0.03	0.05	c0.15	c0.15	c0.15	c0.15
v/s Ratio Perm	0.05											
v/c Ratio	0.82	0.65	0.57	0.95	0.80	0.14	0.22	0.41	1.03dr	1.03dr	1.03dr	1.03dr
Uniform Delay, d1	35.2	21.8	33.0	24.2	35.5	27.4	20.9	31.8	28.6	28.6	28.6	28.6
Progression 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
Incremental Delay, d2	15.0	0.9	1.8	11.4	14.1	0.1	0.2	0.6	2.2	2.2	2.2	2.2
Delay (s)	50.3	22.7	34.8	35.6	49.7	27.5	21.1	32.5	30.8	30.8	30.8	30.8
Level of Service	D	C	C	D	D	C	C	C	C	C	C	C
Approach Delay (s)	27.8			35.5			36.1			31.1		
Approach LOS	C			D			D			C		

Intersection Summary			
HCM Average Control Delay	32.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	79.3	Sum of lost time (s)	13.5
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		
dr Defacto Right Lane. Recode with 1 though lane as a right lane.			
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

21: 15th St & Ocean Ave

1/31/2012

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↑	↔	↔	↑
Sign Control	Stop		Stop			Stop
Volume (vph)	15	45	15	5	67	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	16	47	16	5	71	26
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total (vph)	63	21	97			
Volume Left (vph)	16	0	71			
Volume Right (vph)	47	5	0			
Hadj (s)	-0.40	-0.15	0.15			
Departure Headway (s)	3.8	4.0	4.2			
Degree Utilization, x	0.07	0.02	0.11			
Capacity (veh/h)	926	876	842			
Control Delay (s)	7.0	7.1	7.7			
Approach Delay (s)	7.0	7.1	7.7			
Approach LOS	A	A	A			

Intersection Summary			
Delay		7.4	
HCM Level of Service		A	
Intersection Capacity Utilization	22.0%		ICU Level of Service A
Analysis Period (min)		15	

HCM Signalized Intersection Capacity Analysis

1: Via De La Valle & Camino Del Mar

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔		↔	↔	↔	↔	↔
Volume (vph)	6	99	24	124	84	421	29	634	83	282	324	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00
Fit Protected	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		1895	1615	1805	1900	1615	1805	3610	1615	1805	3610	1615
Fit Permitted		0.99	1.00	0.69	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1872	1615	1304	1900	1615	1805	3610	1615	1805	3610	1615
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)	6	104	25	131	88	443	31	667	87	297	341	7
RTOR Reduction (vph)	0	0	20	0	0	354	0	0	58	0	0	3
Lane Group Flow (vph)	0	110	5	131	88	89	31	667	29	297	341	4
Turn Type	Perm	Perm	Perm	Perm	Perm	Prot	Perm	Prot	Perm	Prot	Perm	Perm
Protected Phases		4			8		5	2		1		6
Permitted Phases	4		4	8		8			2			6
Actuated Green, G (s)		12.3	12.3	12.3	12.3	12.3	2.6	20.2	20.2	15.2	32.8	32.8
Effective Green, g (s)		12.3	12.3	12.3	12.3	12.3	2.6	20.2	20.2	15.2	32.8	32.8
Actuated g/C Ratio		0.20	0.20	0.20	0.20	0.20	0.04	0.33	0.33	0.25	0.54	0.54
Clearance Time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		376	325	262	382	325	77	1192	533	448	1935	866
v/s Ratio Prot					0.05		0.02	c0.18		c0.16	0.09	
v/s Ratio Perm		0.06	0.00	c0.10		0.06			0.02			0.00
v/c Ratio		0.29	0.02	0.50	0.23	0.27	0.40	0.56	0.05	0.66	0.18	0.00
Uniform Delay, d1		20.8	19.6	21.7	20.5	20.7	28.5	16.8	14.0	20.7	7.3	6.6
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.4	0.0	1.5	0.3	0.5	3.4	0.6	0.0	3.7	0.0	0.0
Delay (s)		21.2	19.6	23.2	20.8	21.1	32.0	17.4	14.0	24.4	7.3	6.6
Level of Service		C	B	C	C	C	C	B	B	C	A	A
Approach Delay (s)		20.9			21.5			17.6			15.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	61.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

2: Via De La Valle & Jimmy Durante Blvd

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔		↔	↔	↔	↔	↔	↔
Volume (vph)	45	548	23	330	557	396	81	135	784	439	74	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.0	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	1.00	0.88	0.97	1.00	1.00
Frt	1.00	0.99		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3588		3502	3385		1805	1900	2842	3502	1900	1615
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3588		3502	3385		1805	1900	2842	3502	1900	1615
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)	47	577	24	347	586	417	85	142	825	462	78	72
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	0	59
Lane Group Flow (vph)	47	597	0	347	1003	0	85	142	825	462	78	13
Turn Type	Prot			Prot			Split		Free	Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases									Free			6
Actuated Green, G (s)	4.3	23.1		11.6	30.4		11.2	11.2	78.3	14.4	14.4	14.4
Effective Green, g (s)	4.3	23.1		11.6	30.4		11.2	11.2	78.3	14.4	14.4	14.4
Actuated g/C Ratio	0.05	0.30		0.15	0.39		0.14	0.14	1.00	0.18	0.18	0.18
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	99	1059		519	1314		258	272	2842	644	349	297
v/s Ratio Prot	0.03	0.17		c0.10	c0.30		0.05	c0.07		c0.13	0.04	
v/s Ratio Perm								0.29				0.01
v/c Ratio	0.47	0.56		0.67	0.76		0.33	0.52	0.29	0.72	0.22	0.04
Uniform Delay, d1	35.9	23.3		31.5	20.8		30.2	31.1	0.0	30.0	27.2	26.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.6	0.7		3.3	2.7		0.8	1.8	0.3	3.8	0.3	0.1
Delay (s)	39.5	24.0		34.8	23.5		30.9	32.9	0.3	33.9	27.5	26.4
Level of Service	D	C		C	C		C	C	A	C	C	C
Approach Delay (s)		25.2			26.4			7.1			32.2	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	78.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

3: Via De La Valle & I-5 SB Off-Ramp

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔		↔	↔	↔	↔	↔
Volume (vph)	0	890	673	0	1228	356	0	0	0	355	0	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5	4.5	4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	0.93	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.97	1.00
Satd. Flow (prot)		3610	1615		3610	1615				1715	1570	1534
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.97	1.00
Satd. Flow (perm)		3610	1615		3610	1615				1715	1570	1534
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	937	708	0	1293	375	0	0	0	374	0	328
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	15	15
Lane Group Flow (vph)	0	937	708	0	1293	375	0	0	0	243	221	208
Turn Type		Free			Free					Split		Perm
Protected Phases		4			8					6	6	
Permitted Phases			Free			Free						6
Actuated Green, G (s)		18.4	38.7		18.4	38.7				11.3	11.3	11.3
Effective Green, g (s)		18.4	38.7		18.4	38.7				11.3	11.3	11.3
Actuated g/C Ratio		0.48	1.00		0.48	1.00				0.29	0.29	0.29
Clearance Time (s)		4.5			4.5					4.5	4.5	4.5
Vehicle Extension (s)		3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1716	1615		1716	1615				501	458	448
v/s Ratio Prot		0.26			c0.36					0.14	0.14	
v/s Ratio Perm			c0.44			0.23						0.14
v/c Ratio		0.55	0.44		0.75	0.23				0.49	0.48	0.46
Uniform Delay, d1		7.2	0.0		8.3	0.0				11.3	11.3	11.2
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.4	0.9		1.9	0.3				0.7	0.8	0.8
Delay (s)		7.5	0.9		10.2	0.3				12.0	12.1	12.0
Level of Service		A	A		B	A				B	B	B
Approach Delay (s)		4.7			8.0			0.0			12.0	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	38.7	Sum of lost time (s)	4.5
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

4: Via De La Valle & I-5 NB On-Ramp

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑		↔	↔			
Volume (vph)	0	782	420	0	857	372	760	0	490	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frt		1.00	0.85		1.00	0.85	1.00	0.97	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)		3610	1615		3610	1615	1715	1607	1534			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)		3610	1615		3610	1615	1715	1607	1534			
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	823	442	0	902	392	800	0	516	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	25	39	0	0	0
Lane Group Flow (vph)	0	823	442	0	902	392	456	422	374	0	0	0
Turn Type		Free			Free		Perm		Perm			
Protected Phases		4			8		2		2			
Permitted Phases		Free			Free		2		2			
Actuated Green, G (s)		15.0	39.6		15.0	39.6	15.6	15.6	15.6			
Effective Green, g (s)		15.0	39.6		15.0	39.6	15.6	15.6	15.6			
Actuated g/C Ratio		0.38	1.00		0.38	1.00	0.39	0.39	0.39			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)		1367	1615		1367	1615	676	633	604			
v/s Ratio Prot		0.23			c0.25							
v/s Ratio Perm		0.27			0.24		c0.27	0.26	0.24			
v/c Ratio		0.60	0.27		0.66	0.24	0.67	0.67	0.62			
Uniform Delay, d1		9.9	0.0		10.2	0.0	9.9	9.9	9.6			
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.8	0.4		1.2	0.4	2.7	2.7	1.9			
Delay (s)		10.7	0.4		11.4	0.4	12.6	12.5	11.5			
Level of Service		B A			B A		B	B	B			
Approach Delay (s)		7.1			8.0		12.2			0.0		
Approach LOS		A			A		B			A		

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	
HCM Volume to Capacity ratio	0.67	A	
Actuated Cycle Length (s)	39.6	Sum of lost time (s)	
Intersection Capacity Utilization	57.2%	ICU Level of Service	
Analysis Period (min)	15	B	
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

5: Via De La Valle & San Andres Dr

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑		↔	↔			
Volume (vph)	305	706	16	71	888	125	59	50	66	104	37	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92	0.92	0.99	0.85	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.97	1.00	1.00
Satd. Flow (prot)	3502	3610	1615	1805	3610	1615	1715	1655	1721	1534	1534	1534
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.97	1.00	1.00
Satd. Flow (perm)	3502	3610	1615	1805	3610	1615	1715	1655	1721	1534	1534	1534
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)	321	743	17	75	935	132	62	53	69	109	39	155
RTOR Reduction (vph)	0	0	7	0	0	85	0	51	0	0	4	117
Lane Group Flow (vph)	321	743	10	75	935	47	56	77	0	0	160	22
Turn Type	Prot	Perm		Prot	Perm		Split		Split		Perm	
Protected Phases	7	4		3		8		2		2		6
Permitted Phases	4		8		8		6		6		6	
Actuated Green, G (s)	11.1	30.9	30.9	6.7	26.5	26.5	7.4	7.4			12.1	12.1
Effective Green, g (s)	11.1	30.9	30.9	6.7	26.5	26.5	7.4	7.4			12.1	12.1
Actuated g/C Ratio	0.15	0.41	0.41	0.09	0.35	0.35	0.10	0.10			0.16	0.16
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	518	1485	664	161	1274	570	169	163			277	247
v/s Ratio Prot	c0.09	c0.21		0.04	c0.26		0.03	c0.05		c0.09		
v/s Ratio Perm		0.01			0.03			0.01		0.01		
v/c Ratio	0.62	0.50	0.01	0.47	0.73	0.08	0.33	0.47			0.58	0.09
Uniform Delay, d1	30.0	16.4	13.1	32.5	21.2	16.2	31.5	32.0			29.1	26.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	2.2	0.3	0.0	2.1	2.2	0.1	1.2	2.1			2.9	0.2
Delay (s)	32.2	16.6	13.1	34.6	23.4	16.3	32.7	34.1			32.0	27.0
Level of Service	C	B	B	C	C	B	C	C			C	C
Approach Delay (s)	21.2		23.4		33.7		29.7				29.7	
Approach LOS	C		C		C		C				C	

Intersection Summary			
HCM Average Control Delay	23.9	HCM Level of Service	
HCM Volume to Capacity ratio	0.69	C	
Actuated Cycle Length (s)	75.1	Sum of lost time (s)	
Intersection Capacity Utilization	61.9%	ICU Level of Service	
Analysis Period (min)	15	B	
c Critical Lane Group			

Level of Service Computation Report
 2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #6 Camino Del Mar & Coast Blvd

Cycle (sec): 100 Critical Vol./Cap.(X): 0.641
 Loss Time (sec): 0 Average Delay (sec/veh): 14.0
 Optimal Cycle: 0 Level Of Service: B

Street Name:	Camino Del Mar		Coast Blvd	
Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Stop Sign	Stop Sign	Stop Sign	Stop Sign
Rights:	Include	Include	Include	Include
Min. Green:	5 5 5	5 5 5	5 5 5	5 5 5
Lanes:	1 0 1 0 1	1 0 1 0 1	0 1 0 0 1	0 0 1 0 0

Volume Module:

	Camino Del Mar		Coast Blvd	
	North Bound	South Bound	East Bound	West Bound
Base Vol:	16 378 4	12 215 86	93 0 7	6 0 4
Growth Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	16 378 4	12 215 86	93 0 7	6 0 4
Added Vol:	0 0 0	0 0 0	0 0 0	0 0 0
PasserByVol:	0 0 0	0 0 0	0 0 0	0 0 0
Initial Fut:	16 378 4	12 215 86	93 0 7	6 0 4
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	0.95 0.95 0.95	0.95 0.95 0.95	0.95 0.95 0.95	0.95 0.95 0.95
PHF Volume:	17 398 4	13 226 91	98 0 7	6 0 4
Reduced Vol:	0 0 0	0 0 0	0 0 0	0 0 0
Reduced Vol:	17 398 4	13 226 91	98 0 7	6 0 4
PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Volume:	17 398 4	13 226 91	98 0 7	6 0 4

Saturation Flow Module:

	Camino Del Mar		Coast Blvd	
	North Bound	South Bound	East Bound	West Bound
Adjustment:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Lanes:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 0.00 1.00	0.60 0.00 0.40
Final Sat.:	564 621 695	539 587 658	489 0 580	300 0 200

Capacity Analysis Module:

	Camino Del Mar		Coast Blvd	
	North Bound	South Bound	East Bound	West Bound
Vol/Sat:	0.03 0.64 0.01	0.02 0.39 0.14	0.20 xxxx 0.01	0.02 xxxx 0.02
Crit Moves:	****	****	****	****
Delay/Veh:	9.1 17.6 7.7	9.3 12.1 8.7	11.2 0.0 8.5	9.6 0.0 9.6
Delay Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
AdjDel/Veh:	9.1 17.6 7.7	9.3 12.1 8.7	11.2 0.0 8.5	9.6 0.0 9.6
LOS by Move:	A C A	A B A	B * A	A * A
ApproachDel:	17.2	11.1	11.0	9.6
Delay Adj:	1.00	1.00	1.00	1.00
ApprAdjDel:	17.2	11.1	11.0	9.6
LOS by Appr:	C	B	B	A
AllWayAvgQ:	0.7 39.6 0.1	0.6 14.2 3.6	5.4 5.4 0.3	0.4 0.4 0.4

Note: Queue reported is the distance per lane in feet.

HCM Unsignalized Intersection Capacity Analysis
 7: 15th St & Stratford Ct



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	↑
Volume (veh/h)	119	11	30	159	35	51
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	125	12	32	167	37	54
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				311		
pX, platoon unblocked						
vC, conflicting volume			137		362	131
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			137		362	131
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		94	94
cM capacity (veh/h)			1460		628	924

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	137	199	91
Volume Left	0	32	37
Volume Right	12	0	54
cSH	1700	1460	775
Volume to Capacity	0.08	0.02	0.12
Queue Length 95th (ft)	0	2	10
Control Delay (s)	0.0	1.3	10.3
Lane LOS		A	B
Approach Delay (s)	0.0	1.3	10.3
Approach LOS		B	

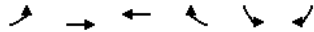
Intersection Summary

Average Delay	2.8
Intersection Capacity Utilization	32.0%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

8: 12th St & Stratford Ct

1/31/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	
Volume (veh/h)	39	9	5	5	7	13
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	41	9	5	5	7	14
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	11				99	8
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	11				99	8
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				99	99
cM capacity (veh/h)	1622				881	1080

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	51	11	21
Volume Left	41	0	7
Volume Right	0	5	14
cSH	1622	1700	1001
Volume to Capacity	0.03	0.01	0.02
Queue Length 95th (ft)	2	0	2
Control Delay (s)	5.9	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	5.9	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay		5.9	
Intersection Capacity Utilization	19.3%		ICU Level of Service A
Analysis Period (min)	15		

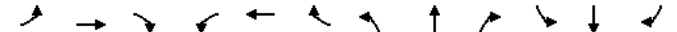
5:00 pm 1/25/2012 Existing PM

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HCM Signalized Intersection Capacity Analysis

9: 15th St & Camino Del Mar

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑	↑		↑	↑	↑	↑	↑
Volume (vph)	69	14	74	57	21	78	115	659	55	59	330	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.83	1.00	1.00	0.76	1.00	0.99	1.00		1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.85	1.00	0.99	1.00		1.00	0.97	
Fit Protected	0.96	1.00	0.95	0.98	1.00	0.95	1.00	0.95		1.00	0.95	
Satd. Flow (prot)	1824	1345	1715	1763	1224	1805	3542	1805		3444	3444	
Fit Permitted	0.96	1.00	0.95	0.98	1.00	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (perm)	1824	1345	1715	1763	1224	1805	3542	1805		3444	3444	
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)	73	15	78	60	22	82	121	694	58	62	347	81
RTOR Reduction (vph)	0	0	70	0	0	74	0	10	0	0	32	0
Lane Group Flow (vph)	0	88	8	40	42	8	121	742	0	62	396	0
Confl. Peds. (#/hr)			52			74			50			50
Turn Type	Split	Split	Perm	Split	Split	Perm	Prot	Prot		Prot	Prot	
Protected Phases	7	7		3	3		5	2		1	6	
Permitted Phases			7			3						
Actuated Green, G (s)		4.9	4.9	4.7	4.7	4.7	5.9	19.1		3.0	16.2	
Effective Green, g (s)		4.9	4.9	4.7	4.7	4.7	5.9	19.1		3.0	16.2	
Actuated g/C Ratio		0.10	0.10	0.09	0.09	0.09	0.12	0.38		0.06	0.33	
Clearance Time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		180	133	162	167	116	214	1361		109	1123	
v/s Ratio Prot		c0.05		0.02	c0.02		c0.07	c0.21		0.03	0.12	
v/s Ratio Perm			0.01			0.01						
v/c Ratio		0.49	0.06	0.25	0.25	0.07	0.57	0.55		0.57	0.35	
Uniform Delay, d1		21.2	20.3	20.9	20.9	20.5	20.7	11.9		22.7	12.8	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.1	0.2	0.8	0.8	0.2	3.4	0.4		6.7	0.2	
Delay (s)		23.3	20.5	21.7	21.7	20.7	24.1	12.4		29.4	13.0	
Level of Service		C	C	C	C	C	C	B		C	B	
Approach Delay (s)		22.0			21.2			14.0			15.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.8		HCM Level of Service B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	49.7		Sum of lost time (s) 18.0
Intersection Capacity Utilization	56.4%		ICU Level of Service B
Analysis Period (min)	15		

c Critical Lane Group

5:00 pm 1/25/2012 Existing PM

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Level of Service Computation Report
 2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #10 Camino Del Mar & 13th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.720
 Loss Time (sec): 0 Average Delay (sec/veh): 16.9
 Optimal Cycle: 0 Level Of Service: C

Street Name:	Camino Del Mar				13th St					
Approach:	North Bound		South Bound		East Bound		West Bound			
Movement:	L	T	R	L	T	R	L	T	R	
Control:	Stop Sign		Stop Sign		Stop Sign		Stop Sign			
Rights:	Include		Include		Include		Include			
Min. Green:	5	5	5	5	5	5	5	5	5	
Lanes:	1	0	1	1	0	0	0	1	0	0

Volume Module:

	EB	WB	NB	WB	NB	SB	WB	NB	SB	WB	NB	
Base Vol:	102	860	15	30	400	27	17	2	72	35	5	13
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	102	860	15	30	400	27	17	2	72	35	5	13
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	102	860	15	30	400	27	17	2	72	35	5	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	107	905	16	32	421	28	18	2	76	37	5	14
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	107	905	16	32	421	28	18	2	76	37	5	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	107	905	16	32	421	28	18	2	76	37	5	14

Saturation Flow Module:

	EB	WB	NB	WB	NB	SB	WB	NB	SB	WB	NB	
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	1.00	1.97	0.03	1.00	1.87	0.13	0.19	0.02	0.79	0.66	0.09	0.25
Final Sat.:	584	1257	22	521	1068	73	104	12	441	336	48	125

Capacity Analysis Module:

	EB	WB	NB	WB	NB	SB	WB	NB	SB	WB	NB	
Vol/Sat:	0.18	0.72	0.72	0.06	0.39	0.39	0.17	0.17	0.17	0.11	0.11	0.11
Crit Moves:	****		****		****		****		****		****	
Delay/Veh:	10.2	21.1	20.9	9.8	12.7	12.5	10.3	10.3	10.3	10.4	10.4	10.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.2	21.1	20.9	9.8	12.7	12.5	10.3	10.3	10.3	10.4	10.4	10.4
LOS by Move:	B	C	C	A	B	B	B	B	B	B	B	B
ApproachDel:	19.9			12.5			10.3			10.4		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	19.9			12.5			10.3			10.4		
LOS by Appr:	C			B			B			B		
AllWayAvgQ:	5.5	57.1	56.3	1.5	15.2	14.9	4.6	4.6	4.6	2.7	2.7	2.7

Note: Queue reported is the distance per lane in feet.

HCM Unsignalized Intersection Capacity Analysis
 11: 12th St & Camino Del Mar



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations			↑			↑		↑↑	↑		↑↑	↑	
Volume (veh/h)	0	0	27	0	0	11	0	876	12	0	559	4	
Sign Control	Stop			Stop			Free			Free			
Grade	0%			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	
Hourly flow rate (vph)	0	0	28	0	0	12	0	922	13	0	588	4	
Pedestrians	13			44			57			57			
Lane Width (ft)	12.0			12.0			12.0			12.0			
Walking Speed (ft/s)	4.0			4.0			4.0			4.0			
Percent Blockage	1			4			5			5			
Right turn flare (veh)							None			None			
Median type							None			None			
Median storage (veh)													
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	1133	1538	353	1289	1528	518	606			935			
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	1133	1538	353	1289	1528	518	606			935			
tC, single (s)	7.5	6.5	6.9	6.9	7.5	6.9	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 %	100	100	95	100	100	98	100			100			
cM capacity (veh/h)	146	116	618	112	117	484	972			741			
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2						
Volume Total	28	12	461	461	13	392	200						
Volume Left	0	0	0	0	0	0	0						
Volume Right	28	12	0	0	13	0	4						
cSH	618	484	1700	1700	1700	1700	1700						
Volume to Capacity	0.05	0.02	0.27	0.27	0.01	0.23	0.12						
Queue Length 95th (ft)	4	2	0	0	0	0	0						
Control Delay (s)	11.1	12.6	0.0	0.0	0.0	0.0	0.0						
Lane LOS	B	B											
Approach Delay (s)	11.1	12.6	0.0					0.0					
Approach LOS	B	B											
Intersection Summary													
Average Delay				0.3									
Intersection Capacity Utilization				43.0%			ICU Level of Service			A			
Analysis Period (min)				15									

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #12 Camino Del Mar & 11th St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.706
Loss Time (sec): 0 Average Delay (sec/veh): 16.9
Optimal Cycle: 0 Level Of Service: C

Street Name: Camino Del Mar 11th St
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 5 5 5 5 5 5 5 5
Lanes: 1 0 1 1 0 1 0 2 0 1 0 0 1 0 0 0 0 1 0 0

Volume Module:
Base Vol: 30 850 15 36 545 10 19 2 21 31 3 12
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 30 850 15 36 545 10 19 2 21 31 3 12
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 30 850 15 36 545 10 19 2 21 31 3 12
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 32 895 16 38 574 11 20 2 22 33 3 13
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 32 895 16 38 574 11 20 2 22 33 3 13
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Volume: 32 895 16 38 574 11 20 2 22 33 3 13

Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 1.00 1.97 0.03 1.00 2.00 1.00 0.45 0.05 0.50 0.67 0.07 0.26
Final Sat.: 586 1268 22 546 1192 666 240 25 265 349 34 135

Capacity Analysis Module:
Vol/Sat: 0.05 0.71 0.70 0.07 0.48 0.02 0.08 0.08 0.08 0.09 0.09 0.09
Crit Moves: **** *
Delay/Veh: 9.1 20.2 20.0 9.6 13.8 8.0 10.0 10.0 10.0 10.3 10.3 10.3
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 9.1 20.2 20.0 9.6 13.8 8.0 10.0 10.0 10.0 10.3 10.3 10.3
LOS by Move: A C C A B A B B B B B
ApproachDel: 19.8 13.4 10.0 10.3
Delay Adj: 1.00 1.00 1.00 1.00
ApprAdjDel: 19.8 13.4 10.0 10.3
LOS by Appr: C B B B
AllWayAvgQ: 1.4 53.7 53.0 1.8 21.4 0.4 2.0 2.0 2.0 2.3 2.3 2.3

Note: Queue reported is the distance per lane in feet.

HCM Signalized Intersection Capacity Analysis

13: 9th St & Camino Del Mar

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Volume (vph)	14	0	22	18	4	9	21	861	17	22	594	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5		4.5		4.5
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.98			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Frt		0.92			0.96		1.00	1.00		1.00	1.00	
Fit Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1652			1728		1796	3599		1805	3596	
Fit Permitted		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1684			1779		1796	3599		1805	3596	
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)	15	0	23	19	4	9	22	906	18	23	625	14
RTOR Reduction (vph)	0	21	0	0	8	0	0	2	0	0	2	0
Lane Group Flow (vph)	0	17	0	0	24	0	22	922	0	23	637	0
Confl. Peds. (#/hr)	57		44	44		57	13					13
Turn Type	Perm		Perm				Prot		Prot			
Protected Phases	4		8				5 2		1 6			
Permitted Phases	4		8									
Actuated Green, G (s)	2.5		2.5				0.7 14.4		0.7 14.4			
Effective Green, g (s)	2.5		2.5				0.7 14.4		0.7 14.4			
Actuated g/C Ratio	0.08		0.08				0.02 0.46		0.02 0.46			
Clearance Time (s)	4.5		4.5				4.5 4.5		4.5 4.5			
Vehicle Extension (s)	3.0		3.0				3.0 3.0		3.0 3.0			
Lane Grp Cap (vph)	135		143				40 1666		41 1665			
v/s Ratio Prot							0.01 c0.26		c0.01 0.18			
v/s Ratio Perm	0.01		c0.01									
v/c Ratio	0.12		0.17				0.55 0.55		0.56 0.38			
Uniform Delay, d1	13.3		13.3				15.0 6.0		15.0 5.4			
Progression Factor	1.00		1.00				1.00 1.00		1.00 1.00			
Incremental Delay, d2	0.4		0.5				15.3 0.4		16.4 0.1			
Delay (s)	13.7		13.9				30.4 6.4		31.4 5.6			
Level of Service	B		B				C A		C A			
Approach Delay (s)	13.7		13.9				7.0		6.5			
Approach LOS	B		B				A		A			
Intersection Summary												
HCM Average Control Delay	7.1		HCM Level of Service				A					
HCM Volume to Capacity ratio	0.50											
Actuated Cycle Length (s)	31.1		Sum of lost time (s)				13.5					
Intersection Capacity Utilization	43.8%		ICU Level of Service				A					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

14: Del Mar Heights Rd & Camino Del Mar

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗	↗	↖	↗	↖	↗	↖	↗
Volume (vph)	10	57	21	106	132	451	58	565	438	415	249	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	1.00	0.99
Flt Protected	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1885	1615	1715	1798	1615	1805	3610	1615	1805	3588		
Flt Permitted	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1885	1615	1715	1798	1615	1805	3610	1615	1805	3588		
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)	11	60	22	112	139	475	61	595	461	437	262	11
RTOR Reduction (vph)	0	0	21	0	0	138	0	0	274	0	4	0
Lane Group Flow (vph)	0	71	1	101	150	337	61	595	187	437	269	0
Turn Type	Split	Perm	Split	pm+ov	Prot	Perm	Prot					
Protected Phases	7	7	3	3	1	5	2			1	6	
Permitted Phases			7		3			2				
Actuated Green, G (s)	3.4	3.4	6.3	6.3	26.0	3.4	18.2	18.2	19.7	34.5		
Effective Green, g (s)	3.4	3.4	6.3	6.3	26.0	3.4	18.2	18.2	19.7	34.5		
Actuated g/C Ratio	0.05	0.05	0.10	0.10	0.40	0.05	0.28	0.28	0.30	0.53		
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	98	84	165	173	640	94	1002	448	542	1887		
v/s Ratio Prot	c0.04		0.06	c0.08	0.16	0.03	c0.16		c0.24	0.08		
v/s Ratio Perm		0.00			0.05		0.12					
v/c Ratio	0.72	0.01	0.61	0.87	0.53	0.65	0.59	0.42	0.81	0.14		
Uniform Delay, d1	30.6	29.5	28.5	29.2	15.1	30.5	20.5	19.4	21.2	8.0		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	23.1	0.1	6.6	33.7	0.8	14.4	1.0	0.6	8.6	0.0		
Delay (s)	53.8	29.6	35.0	62.9	15.9	44.9	21.5	20.0	29.7	8.0		
Level of Service	D	C	D	E	B	D	C	C	C	A		
Approach Delay (s)	48.0			28.3			22.1			21.4		
Approach LOS	D			C			C			C		

Intersection Summary			
HCM Average Control Delay	24.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	65.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

15: Carmel Valley Rd & Camino Del Mar

1/31/2012



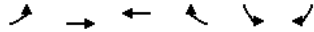
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↖	↗
Volume (vph)	132	141	859	320	135	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1615	1900	1615	1805	1900
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1615	1900	1615	1805	1900
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	139	148	904	337	142	225
RTOR Reduction (vph)	0	125	0	107	0	0
Lane Group Flow (vph)	139	23	904	230	142	225
Turn Type	Perm	Perm	Prot			
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	10.8	10.8	37.4	37.4	7.7	49.6
Effective Green, g (s)	10.8	10.8	37.4	37.4	7.7	49.6
Actuated g/C Ratio	0.16	0.16	0.54	0.54	0.11	0.71
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	281	251	1024	870	200	1358
v/s Ratio Prot	c0.08		c0.48		c0.08	0.12
v/s Ratio Perm		0.01		0.14		
v/c Ratio	0.49	0.09	0.88	0.26	0.71	0.17
Uniform Delay, d1	26.8	25.1	14.1	8.6	29.8	3.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.2	9.1	0.2	11.2	0.1
Delay (s)	28.2	25.3	23.2	8.8	41.0	3.3
Level of Service	C	C	C	A	D	A
Approach Delay (s)	26.7		19.3			17.9
Approach LOS	C		B			B

Intersection Summary			
HCM Average Control Delay	20.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	69.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

16: Del Mar Heights Rd & Crest Way

1/31/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Volume (vph)	3	507	835	79	136	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1805	3610	3610	1615	1806	
Flt Permitted	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1805	3610	3610	1615	1806	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	534	879	83	143	3
RTOR Reduction (vph)	0	0	0	46	2	0
Lane Group Flow (vph)	3	534	879	37	144	0
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	0.5	19.5	14.5	14.5	4.3	
Effective Green, g (s)	0.5	19.5	14.5	14.5	4.3	
Actuated g/C Ratio	0.02	0.59	0.44	0.44	0.13	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	28	2146	1596	714	237	
v/s Ratio Prot	0.00	c0.15	c0.24		c0.08	
v/s Ratio Perm				0.02		
v/c Ratio	0.11	0.25	0.55	0.05	0.61	
Uniform Delay, d1	15.9	3.2	6.7	5.2	13.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.7	0.1	0.4	0.0	4.4	
Delay (s)	17.6	3.2	7.2	5.3	17.8	
Level of Service	B	A	A	A	B	
Approach Delay (s)		3.3	7.0		17.8	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	6.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	32.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

17: Del Mar Heights Rd & I-5 SB Off-Ramp

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕	↕				↕	↕	↕
Volume (vph)	0	826	374	0	972	558	0	0	0	881	0	259
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5	4.5	4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	0.99	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)		3610	1615		3610	1615				1715	1637	1534
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)		3610	1615		3610	1615				1715	1637	1534
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	869	394	0	1023	587	0	0	0	927	0	273
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	5	15
Lane Group Flow (vph)	0	869	394	0	1023	587	0	0	0	482	467	231
Turn Type		Free			Free					Split		Perm
Protected Phases		4			8					1		1
Permitted Phases			Free			Free						1
Actuated Green, G (s)		15.3	40.7		15.3	40.7				16.4	16.4	16.4
Effective Green, g (s)		15.3	40.7		15.3	40.7				16.4	16.4	16.4
Actuated g/C Ratio		0.38	1.00		0.38	1.00				0.40	0.40	0.40
Clearance Time (s)		4.5			4.5					4.5	4.5	4.5
Vehicle Extension (s)		3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1357	1615		1357	1615				691	660	618
v/s Ratio Prot		0.24			c0.28					0.28	c0.29	
v/s Ratio Perm			0.24			0.36						0.15
v/c Ratio		0.64	0.24		0.75	0.36				0.70	0.71	0.37
Uniform Delay, d1		10.4	0.0		11.1	0.0				10.1	10.1	8.5
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		1.0	0.4		2.4	0.6				3.1	3.5	0.4
Delay (s)		11.5	0.4		13.5	0.6				13.2	13.6	8.9
Level of Service		B	A		B	A				B	B	A
Approach Delay (s)		8.0			8.8			0.0			12.5	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	40.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

18: Del Mar Heights Rd & I-5 NB On-Ramp

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔			↔	↔	↔	↔	↔			
Volume (vph)	188	1555	0	0	1029	588	541	0	602	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.91	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98	1.00			
Satd. Flow (prot)	3502	3610			5187	1615	1715	1537	1534			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.98	1.00			
Satd. Flow (perm)	3502	3610			5187	1615	1715	1537	1534			
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)	198	1637	0	0	1083	619	569	0	634	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	410	0	9	9	0	0	0
Lane Group Flow (vph)	198	1637	0	0	1083	209	421	393	371	0	0	0
Turn Type	Prot				Perm		Split		Perm			
Protected Phases	7	4			8		2	2				
Permitted Phases					8				2			
Actuated Green, G (s)	5.6	29.3			19.2	19.2	18.5	18.5	18.5			
Effective Green, g (s)	5.6	29.3			19.2	19.2	18.5	18.5	18.5			
Actuated g/C Ratio	0.10	0.52			0.34	0.34	0.33	0.33	0.33			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	345	1862			1753	546	559	501	500			
v/s Ratio Prot	0.06	c0.45			0.21		0.25	c0.26				
v/s Ratio Perm					0.13			0.24				
v/c Ratio	0.57	0.88			0.62	0.38	0.75	0.78	0.74			
Uniform Delay, d1	24.5	12.2			15.7	14.3	17.1	17.3	17.0			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	2.3	5.1			0.7	0.4	5.7	7.9	5.9			
Delay (s)	26.8	17.3			16.4	14.7	22.8	25.3	22.9			
Level of Service	C	B			B	B	C	C	C			
Approach Delay (s)		18.3			15.8		23.7			0.0		
Approach LOS		B			B		C			A		
Intersection Summary												
HCM Average Control Delay		18.8			HCM Level of Service				B			
HCM Volume to Capacity ratio		0.84										
Actuated Cycle Length (s)		56.8			Sum of lost time (s)				9.0			
Intersection Capacity Utilization		75.3%			ICU Level of Service				D			
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

19: Del Mar Heights Rd & High Bluff Dr

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	240	1783	215	20	1118	59	628	88	170	52	41	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.97	0.95	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99	1.00	0.90	1.00	0.90	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1615	1805	5148	3502	3254	1805	1900	1615	1900	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1615	1805	5148	3502	3254	1805	1900	1615	1900	1615
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)	253	1877	226	21	1177	62	661	93	179	55	43	166
RTOR Reduction (vph)	0	0	68	0	6	0	0	138	0	0	0	4
Lane Group Flow (vph)	253	1877	158	21	1233	0	661	134	0	55	43	162
Turn Type	Prot		pm+ov		Prot		Prot		Prot		pm+ov	
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4									6
Actuated Green, G (s)	13.8	38.1	55.9	1.5	25.8		17.8	18.5		3.8	4.5	18.3
Effective Green, g (s)	13.8	38.1	55.9	1.5	25.8		17.8	18.5		3.8	4.5	18.3
Actuated g/C Ratio	0.17	0.48	0.70	0.02	0.32		0.22	0.23		0.05	0.06	0.23
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	312	2473	1221	34	1662		780	753		86	107	461
v/s Ratio Prot	c0.14	c0.36	0.03	0.01	0.24		c0.19	0.04		0.03	0.02	c0.06
v/s Ratio Perm			0.07									0.04
v/c Ratio	0.81	0.76	0.13	0.62	0.74		0.85	0.18		0.64	0.40	0.35
Uniform Delay, d1	31.8	17.1	4.0	38.9	24.1		29.7	24.6		37.4	36.4	25.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	14.7	1.4	0.0	29.0	1.8		8.5	0.1		14.6	2.5	0.5
Delay (s)	46.5	18.5	4.0	67.9	25.9		38.2	24.7		52.0	38.9	26.3
Level of Service	D	B	A	E	C		D	C		D	D	C
Approach Delay (s)		20.1			26.6		34.3				33.7	
Approach LOS		C			C		C				C	
Intersection Summary												
HCM Average Control Delay			25.3		HCM Level of Service				C			
HCM Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			79.9		Sum of lost time (s)				13.5			
Intersection Capacity Utilization			74.0%		ICU Level of Service				D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

20: Del Mar Heights Rd & El Camino Real

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑		↑↑↑	↑↑		↑↑↑	↑↑↑		↑	↑↑		↑↑↑
Volume (vph)	486	1446	346	115	710	172	336	422	245	182	173	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.91	1.00	0.97	0.91	
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3502	5037		3502	5035		3502	5187	1615	3502	4778	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3502	5037		3502	5035		3502	5187	1615	3502	4778	
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)	512	1522	364	121	747	181	354	444	258	192	182	202
RTOR Reduction (vph)	0	47	0	0	49	0	0	0	23	0	174	0
Lane Group Flow (vph)	512	1839	0	121	879	0	354	444	235	192	210	0
Turn Type	Prot		Prot		Prot		pm+ov		Prot		Prot	
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	2											
Actuated Green, G (s)	14.1	30.5		4.7	21.1		9.5	11.5	16.2	8.2	10.2	
Effective Green, g (s)	14.1	30.5		4.7	21.1		9.5	11.5	16.2	8.2	10.2	
Actuated g/C Ratio	0.19	0.42		0.06	0.29		0.13	0.16	0.22	0.11	0.14	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	677	2107		226	1457		456	818	459	394	669	
v/s Ratio Prot	c0.15	c0.37		0.03	0.17		c0.10	0.09	c0.03	0.05	0.04	
v/s Ratio Perm	0.11											
v/c Ratio	0.76	0.87		0.54	0.60		0.78	0.54	0.51	0.49	0.31	
Uniform Delay, d1	27.8	19.4		33.0	22.3		30.7	28.3	24.9	30.4	28.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.8	4.3		2.4	0.7		8.1	0.7	1.0	1.0	0.3	
Delay (s)	32.6	23.7		35.5	23.0		38.8	29.0	25.8	31.3	28.5	
Level of Service	C			D			D		C	C	C	
Approach Delay (s)	25.6			24.4			31.5			29.4		
Approach LOS	C			C			C			C		
Intersection Summary												
HCM Average Control Delay	27.0			HCM Level of Service			C					
HCM Volume to Capacity ratio	0.77											
Actuated Cycle Length (s)	72.9			Sum of lost time (s)			13.5					
Intersection Capacity Utilization	71.2%			ICU Level of Service			C					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

21: 15th St & Ocean Ave

1/31/2012

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑↑		↑		↑	
Sign Control	Stop		Stop		Stop	
Volume (vph)	55	152	28	2	81	22
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	58	160	29	2	85	23
Direction, Lane #						
	WB 1	NB 1	SB 1			
Volume Total (vph)	218	32	108			
Volume Left (vph)	58	0	85			
Volume Right (vph)	160	2	0			
Hadj (s)	-0.39	-0.04	0.16			
Departure Headway (s)	3.8	4.4	4.6			
Degree Utilization, x	0.23	0.04	0.14			
Capacity (veh/h)	906	761	746			
Control Delay (s)	8.0	7.6	8.3			
Approach Delay (s)	8.0	7.6	8.3			
Approach LOS	A	A	A			
Intersection Summary						
Delay			8.1			
HCM Level of Service			A			
Intersection Capacity Utilization			31.4%	ICU Level of Service		A
Analysis Period (min)			15			

APPENDIX E

**PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS
EXISTING CONDITIONS WITH PROJECT WITH NO CIRCULATION CHANGES**

HCM Signalized Intersection Capacity Analysis

1: Via De La Valle & Camino Del Mar

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Volume (vph)	1	94	27	91	112	169	19	154	78	490	509	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00
Flt Protected	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1899	1615	1805	1900	1615	1805	3610	1615	1805	3610	1615	1615
Flt Permitted	1.00	1.00	0.69	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1894	1615	1315	1900	1615	1805	3610	1615	1805	3610	1615	1615
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)	1	99	28	96	118	178	20	162	82	516	536	18
RTOR Reduction (vph)	0	0	23	0	0	145	0	0	69	0	0	8
Lane Group Flow (vph)	0	100	5	96	118	33	20	162	13	516	536	10
Turn Type	Perm	Perm	Perm	Perm	Perm	Prot	Perm	Prot	Perm	Prot	Perm	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Actuated Green, G (s)	9.7	9.7	9.7	9.7	9.7	1.2	8.7	8.7	21.2	28.7	28.7	28.7
Effective Green, g (s)	9.7	9.7	9.7	9.7	9.7	1.2	8.7	8.7	21.2	28.7	28.7	28.7
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.18	0.02	0.16	0.16	0.40	0.54	0.54	0.54
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	346	295	240	347	295	41	591	265	721	1951	873	
v/s Ratio Prot				0.06		0.01	0.04		c0.29	c0.15		
v/s Ratio Perm	0.05	0.00	c0.07		0.02			0.01				0.01
v/c Ratio	0.29	0.02	0.40	0.34	0.11	0.49	0.27	0.05	0.72	0.27	0.01	0.01
Uniform Delay, d1	18.7	17.8	19.1	18.9	18.1	25.6	19.4	18.7	13.4	6.6	5.6	
Progression 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
Incremental Delay, d2	0.5	0.0	1.1	0.6	0.2	8.9	0.3	0.1	3.4	0.1	0.0	0.0
Delay (s)	19.2	17.8	20.2	19.5	18.3	34.5	19.7	18.8	16.8	6.7	5.6	
Level of Service	B	B	C	B	B	C	B	B	B	A	A	A
Approach Delay (s)	18.9			19.1			20.5			11.5		
Approach LOS	B			B			C			B		

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	53.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

2: Via De La Valle & Jimmy Durante Blvd

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Volume (vph)	45	755	29	672	545	325	22	72	252	438	114	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	0.97	0.95	1.00	1.00	0.88	0.97	1.00	1.00	1.00	1.00
Frt	1.00	0.99	1.00	0.94	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1805	3590	3502	3408	1805	1900	2842	3502	1900	3502	1900	1615
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1805	3590	3502	3408	1805	1900	2842	3502	1900	3502	1900	1615
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)	47	795	31	707	574	342	23	76	265	461	120	36
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	0	30
Lane Group Flow (vph)	47	823	0	707	916	0	23	76	265	461	120	6
Turn Type	Prot	Prot	Prot	Split	Split	Free	Split	Perm	Perm	Perm	Perm	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases									Free		6	6
Actuated Green, G (s)	4.9	22.8		18.7	36.6		7.1	7.1	81.1	14.5	14.5	14.5
Effective Green, g (s)	4.9	22.8		18.7	36.6		7.1	7.1	81.1	14.5	14.5	14.5
Actuated g/C Ratio	0.06	0.28		0.23	0.45		0.09	0.09	1.00	0.18	0.18	0.18
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	109	1009		807	1538		158	166	2842	626	340	289
v/s Ratio Prot	0.03	c0.23		c0.20	0.27		0.01	c0.04		c0.13	0.06	
v/s Ratio Perm									0.09			0.00
v/c Ratio	0.43	0.82		0.88	0.60		0.15	0.46	0.09	0.74	0.35	0.02
Uniform Delay, d1	36.8	27.2		30.1	16.7		34.2	35.2	0.0	31.5	29.2	27.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	5.2		10.5	0.6		0.4	2.0	0.1	4.5	0.6	0.0
Delay (s)	39.5	32.4		40.6	17.3		34.6	37.2	0.1	36.0	29.8	27.5
Level of Service	D	C		D	B		C	D	A	D	C	C
Approach Delay (s)		32.7			27.5			10.0			34.3	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM Average Control Delay	28.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	81.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

3: Via De La Valle & I-5 SB Off-Ramp

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑				↓	↓	↓
Volume (vph)	0	648	930	0	1136	593	0	0	0	182	0	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5	4.5	4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	0.92	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.98	1.00
Satd. Flow (prot)		3610	1615		3610	1615				1715	1550	1534
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.98	1.00
Satd. Flow (perm)		3610	1615		3610	1615				1715	1550	1534
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	682	979	0	1196	624	0	0	0	192	0	198
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	21	21
Lane Group Flow (vph)	0	682	979	0	1196	624	0	0	0	134	110	104
Turn Type		Free			Free					Split	Perm	
Protected Phases		4			8					6	6	
Permitted Phases		Free			Free						6	
Actuated Green, G (s)		16.8	32.1		16.8	32.1				6.3	6.3	
Effective Green, g (s)		16.8	32.1		16.8	32.1				6.3	6.3	
Actuated g/C Ratio		0.52	1.00		0.52	1.00				0.20	0.20	
Clearance Time (s)		4.5			4.5					4.5	4.5	
Vehicle Extension (s)		3.0			3.0					3.0	3.0	
Lane Grp Cap (vph)	1889	1615		1889	1615					337	304	301
v/s Ratio Prot		0.19			0.33					0.08	0.07	
v/s Ratio Perm		c0.61			0.39						0.07	
v/c Ratio	0.36	0.61		0.63	0.39					0.40	0.36	
Uniform Delay, d1	4.5	0.0		5.5	0.0					11.2	11.2	
Progression Factor	1.00	1.00		1.00	1.00					1.00	1.00	
Incremental Delay, d2	0.1	1.7		0.7	0.7					0.8	0.7	
Delay (s)	4.6	1.7		6.2	0.7					12.0	11.9	
Level of Service	A	A		A	A					B	B	
Approach Delay (s)	2.9			4.3			0.0			11.9		
Approach LOS	A			A			A			B		
Intersection Summary												
HCM Average Control Delay	4.5		HCM Level of Service				A					
HCM Volume to Capacity ratio	0.61											
Actuated Cycle Length (s)	32.1		Sum of lost time (s)				0.0		9.0			
Intersection Capacity Utilization	46.7%		ICU Level of Service				A					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Via De La Valle & I-5 NB On-Ramp

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑				↓	↓	↓
Volume (vph)	0	544	287	0	988	379	684	0	453	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frt		1.00	0.85		1.00	0.85	1.00	0.96	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)		3610	1615		3610	1615	1715	1605	1534			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)		3610	1615		3610	1615	1715	1605	1534			
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	573	302	0	1040	399	720	0	477	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	27	97	0	0	0
Lane Group Flow (vph)	0	573	302	0	1040	399	410	383	280	0	0	0
Turn Type		Free			Free		Perm	Perm				
Protected Phases		4			8		2	2				
Permitted Phases		Free			Free		2	2				
Actuated Green, G (s)		15.9	40.1		15.9	40.1	15.2	15.2	15.2			
Effective Green, g (s)		15.9	40.1		15.9	40.1	15.2	15.2	15.2			
Actuated g/C Ratio		0.40	1.00		0.40	1.00	0.38	0.38	0.38			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	1431	1615		1431	1615		650	608	581			
v/s Ratio Prot		0.16			c0.29							
v/s Ratio Perm		0.19			0.25		c0.24	0.24	0.18			
v/c Ratio	0.40	0.19		0.73	0.25		0.63	0.63	0.48			
Uniform Delay, d1	8.7	0.0		10.3	0.0		10.2	10.2	9.5			
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00			
Incremental Delay, d2	0.2	0.3		1.9	0.4		2.0	2.0	0.6			
Delay (s)	8.9	0.3		12.1	0.4		12.2	12.2	10.1			
Level of Service	A	A		B	A		B	B	B			
Approach Delay (s)	5.9			8.9			11.5		0.0			
Approach LOS	A			A			B		A			
Intersection Summary												
HCM Average Control Delay	9.0		HCM Level of Service				A					
HCM Volume to Capacity ratio	0.68											
Actuated Cycle Length (s)	40.1		Sum of lost time (s)				9.0					
Intersection Capacity Utilization	58.4%		ICU Level of Service				B					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Via De La Valle & San Andres Dr

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑↑	↑	↑	↑↑	↑↑	↑	↑	↑	↑	↑	↑
Volume (vph)	142	522	19	87	936	108	33	9	28	79	35	219
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.95	0.95			0.95	0.95
Flt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90			0.95	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	1.00
Satd. Flow (prot)	3502	3610	1615	1805	3610	1615	1715	1610			1675	1534
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	1.00
Satd. Flow (perm)	3502	3610	1615	1805	3610	1615	1715	1610			1675	1534
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)	149	549	20	92	985	114	35	9	29	83	37	231
RTOR Reduction (vph)	0	0	12	0	0	69	0	27	0	0	20	137
Lane Group Flow (vph)	149	549	8	92	985	45	31	15	0	0	162	32
Turn Type	Prot	Perm	Perm	Prot	Perm	Split	Split	Split	Perm	Split	Perm	Perm
Protected Phases	7	4		3	8	2	2		6	6		
Permitted Phases			4		8							6
Actuated Green, G (s)	4.8	23.4	23.4	6.6	25.2	25.2	3.8	3.8			12.0	12.0
Effective Green, g (s)	4.8	23.4	23.4	6.6	25.2	25.2	3.8	3.8			12.0	12.0
Actuated g/C Ratio	0.08	0.37	0.37	0.10	0.39	0.39	0.06	0.06			0.19	0.19
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	263	1324	592	187	1426	638	102	96			315	289
v/s Ratio Prot	0.04	0.15		c0.05	c0.27		c0.02	0.01			c0.10	
v/s Ratio Perm			0.00		0.03							0.02
v/c Ratio	0.57	0.41	0.01	0.49	0.69	0.07	0.30	0.15			0.51	0.11
Uniform Delay, d1	28.5	15.1	12.9	27.0	16.1	12.0	28.7	28.5			23.3	21.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	2.8	0.2	0.0	2.0	1.5	0.0	1.7	0.7			1.4	0.2
Delay (s)	31.3	15.3	12.9	29.0	17.5	12.1	30.4	29.2			24.7	21.6
Level of Service	C	B	B	C	B	B	C	C			C	C
Approach Delay (s)		18.5			17.9		29.7				23.2	
Approach LOS		B			B		C				C	

Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	63.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

5:00 pm 1/26/2012 Ex AM + P NB

Synchro 7 - Report
Page 5

EX + P AM Fri Jan 27, 2012 14:36:29 Page 8-1

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #6 Camino Del Mar & Coast Blvd

Cycle (sec): 100 Critical Vol./Cap.(X): 0.837
Loss Time (sec): 0 Average Delay (sec/veh): 21.6
Optimal Cycle: 0 Level Of Service: C

Street Name: Camino Del Mar Coast Blvd
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 5 5 5 5 5 5 5 5 5 5 5 5
Lanes: 1 0 1 0 1 1 0 1 0 1 0 1 0 0 1 0 0

Volume Module:
Base Vol: 9 147 5 7 524 70 45 1 8 9 1 5
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 9 147 5 7 524 70 45 1 8 9 1 5
Added Vol: 0 20 0 0 15 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 9 167 5 7 539 70 45 1 8 9 1 5
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 9 176 5 7 567 74 47 1 8 9 1 5
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 9 176 5 7 567 74 47 1 8 9 1 5
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 9 176 5 7 567 74 47 1 8 9 1 5

Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 0.98 0.02 1.00 0.60 0.07 0.33
Final Sat.: 521 561 629 613 678 771 473 11 575 309 34 172

Capacity Analysis Module:
Vol/Sat: 0.02 0.31 0.01 0.01 0.84 0.10 0.10 0.10 0.01 0.03 0.03 0.03
Crit Moves: **** *
Delay/Veh: 9.4 11.4 8.2 8.5 28.6 7.8 10.5 10.5 8.6 9.8 9.8 9.8
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 9.4 11.4 8.2 8.5 28.6 7.8 10.5 10.5 8.6 9.8 9.8 9.8
LOS by Move: A B A A D A B B A A A
ApproachDel: 11.2 26.0 10.2 9.8
Delay Adj: 1.00 1.00 1.00 1.00
ApprAdjDel: 11.2 26.0 10.2 9.8
LOS by Appr: B D B A
AllWayAvgQ: 0.4 10.1 0.2 0.3 97.0 2.5 2.5 2.5 0.3 0.7 0.7 0.7

Note: Queue reported is the distance per lane in feet.

Traffic 8.0.0715 (c) 2008 Dowling Assoc. Licensed to KOA CORP, MONTEREY PK

HCM Unsignalized Intersection Capacity Analysis

7: 15th St & Stratford Ct

1/31/2012



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Volume (veh/h)	116	30	20	104	23	16
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	122	32	21	109	24	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				311		
pX, platoon unblocked						
vC, conflicting volume			154		289	138
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			154		289	138
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		97	98
cM capacity (veh/h)			1439		695	916

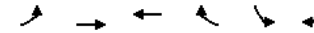
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	154	131	41
Volume Left	0	21	24
Volume Right	32	0	17
cSH	1700	1439	771
Volume to Capacity	0.09	0.01	0.05
Queue Length 95th (ft)	0	1	4
Control Delay (s)	0.0	1.3	9.9
Lane LOS		A	A
Approach Delay (s)	0.0	1.3	9.9
Approach LOS			A

Intersection Summary			
Average Delay		1.8	
Intersection Capacity Utilization	27.8%		ICU Level of Service A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

8: 12th St & Stratford Ct

1/31/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Volume (veh/h)	15	13	4	7	10	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	16	14	4	7	11	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	12				53	8
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	12				53	8
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				99	99
cM capacity (veh/h)	1621				951	1080

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	29	12	18
Volume Left	16	0	11
Volume Right	0	7	7
cSH	1621	1700	1000
Volume to Capacity	0.01	0.01	0.02
Queue Length 95th (ft)	1	0	1
Control Delay (s)	3.9	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	3.9	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay		4.6	
Intersection Capacity Utilization	18.2%		ICU Level of Service A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis

9: 15th St & Camino Del Mar

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Volume (vph)	27	13	81	37	11	65	86	331	54	96	720	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	0.95
Frbp, ped/bikes	1.00	0.88	1.00	1.00	0.86	1.00	0.98	1.00	1.00	1.00	1.00	1.00
Fipb, ped/bikes	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	1.00	0.85	1.00	1.00	0.85	1.00	0.98	1.00	0.99	1.00	0.99	1.00
Flt Protected	0.97	1.00	0.95	0.97	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1839	1421	1715	1758	1393	1805	3464	1805	3563	1805	3563	3563
Flt Permitted	0.97	1.00	0.95	0.97	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1839	1421	1715	1758	1393	1805	3464	1805	3563	1805	3563	3563
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)	28	14	85	39	12	68	91	348	57	101	758	46
RTOR Reduction (vph)	0	0	77	0	0	63	0	17	0	0	6	0
Lane Group Flow (vph)	0	42	8	25	26	5	91	388	0	101	798	0
Confl. Peds. (#/hr)			36			29			78			37
Turn Type	Split	Perm	Split	Perm	Prot	Prot	Prot	Prot	Prot	Prot	Prot	Prot
Protected Phases	7	7		3	3		5	2		1	6	
Permitted Phases			7		3							
Actuated Green, G (s)	4.9	4.9	3.4	3.4	3.4	5.9	17.7			6.1	17.9	
Effective Green, g (s)	4.9	4.9	3.4	3.4	3.4	5.9	17.7			6.1	17.9	
Actuated g/C Ratio	0.10	0.10	0.07	0.07	0.07	0.12	0.35			0.12	0.36	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	
Lane Grp Cap (vph)	180	139	116	119	95	213	1224			220	1273	
v/s Ratio Prot	c0.02		0.01	c0.01		0.05	0.11			c0.06	c0.22	
v/s Ratio Perm		0.01			0.00							
v/c Ratio	0.23	0.06	0.22	0.22	0.05	0.43	0.32			0.46	0.63	
Uniform Delay, d1	20.9	20.5	22.1	22.1	21.8	20.5	11.8			20.5	13.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	
Incremental Delay, d2	0.7	0.2	0.9	0.9	0.2	1.4	0.1			1.5	1.0	
Delay (s)	21.5	20.7	23.0	23.0	22.1	21.9	11.9			22.0	14.3	
Level of Service	C	C	C	C	C	C	B			C	B	
Approach Delay (s)	21.0			22.5			13.8				15.2	
Approach LOS	C			C			B				B	

Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	50.1	Sum of lost time (s)	13.5
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #10 Camino Del Mar & 13th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.702
Loss Time (sec):	0	Average Delay (sec/veh):	16.4
Optimal Cycle:	0	Level of Service:	C

Street Name:	Camino Del Mar	13th St		
Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R

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Control:	Stop Sign	Stop Sign	Stop Sign	Stop Sign
Rights:	Include	Include	Include	Include
Min. Green:	5	5	5	5
Lanes:	1 0 1 1 0	1 0 1 1 0	0 0 1! 0 0	0 0 1! 0 0

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Volume Module:

Base Vol:	71	350	6	30	746	14	14	0	29	17	2	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	71	350	6	30	746	14	14	0	29	17	2	6
Added Vol:	29	82	10	12	69	8	9	0	17	32	0	12
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	100	432	16	42	815	22	23	0	46	49	2	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	105	455	17	44	858	23	24	0	48	52	2	19
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	105	455	17	44	858	23	24	0	48	52	2	19
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	105	455	17	44	858	23	24	0	48	52	2	19

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Saturation Flow Module:

Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.93	0.07	1.00	1.95	0.05	0.33	0.00	0.67	0.71	0.03	0.26
Final Sat.:	532	1117	42	572	1222	33	178	0	357	364	15	134

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Capacity Analysis Module:

Vol/Sat:	0.20	0.41	0.41	0.08	0.70	0.70	0.14	xxxx	0.14	0.14	0.14	0.14
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Delay/Veh:	10.9	12.7	12.7	9.4	20.4	20.3	10.3	0.0	10.3	10.7	10.7	10.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.9	12.7	12.7	9.4	20.4	20.3	10.3	0.0	10.3	10.7	10.7	10.7
LOS by Move:	B	B	B	A	C	C	B	*	B	B	B	B
ApproachDel:	12.4			19.9			10.3			10.7		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	12.4			19.9			10.3			10.7		
LOS by Appr:	B			C			B			B		
AllWayAvgQ:	5.8	16.0	15.8	2.0	52.9	51.9	3.5	3.5	3.5	3.7	3.7	3.7

Note: Queue reported is the distance per lane in feet.

HCM Unsignalized Intersection Capacity Analysis

11: 12th St & Camino Del Mar

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑		↑↑	↑		↑↑	
Volume (veh/h)	0	0	34	0	0	18	0	562	31	0	908	21
Sign Control	Stop			Stop			Free			Free		
Grade	0%			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
Hourly flow rate (vph)	0	0	36	0	0	19	0	592	33	0	956	22
Pedestrians	4			46			43			4		
Lane Width (ft)	12.0			12.0			12.0			12.0		
Walking Speed (ft/s)	4.0			4.0			4.0			4.0		
Percent Blockage	0			4			4			4		
Right turn flare (veh)												
Median type	None			None			None			None		
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1329	1595	539	1151	1573	339	982			624		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1329	1595	539	1151	1573	339	982			624		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	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 %	100	100	92	100	100	97	100			100		
cM capacity (veh/h)	107	108	472	138	111	639	709			967		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	36	19	296	296	33	637	341
Volume Left	0	0	0	0	0	0	0
Volume Right	36	19	0	0	33	0	22
cSH	472	639	1700	1700	1700	1700	1700
Volume to Capacity	0.08	0.03	0.17	0.17	0.02	0.37	0.20
Queue Length 95th (ft)	6	2	0	0	0	0	0
Control Delay (s)	13.3	10.8	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	B					
Approach Delay (s)	13.3	10.8	0.0			0.0	
Approach LOS	B	B					

Intersection Summary	
Average Delay	0.4
Intersection Capacity Utilization	44.2% ICU Level of Service A
Analysis Period (min)	15

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #12 Camino Del Mar & 11th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.730
Loss Time (sec): 0 Average Delay (sec/veh): 17.9
Optimal Cycle: 0 Level Of Service: C

Street Name: Camino Del Mar 11th St

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R

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Control:	Stop Sign	Stop Sign	Stop Sign	Stop Sign
Rights:	Include	Include	Include	Include
Min. Green:	5 5 5	5 5 5	5 5 5	5 5 5
Lanes:	1 0 1 1 0	1 0 2 0 1	0 0 1! 0 0	0 0 1! 0 0

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Volume Module:

Base Vol:	33	415	17	19	747	21	23	2	13	20	3	7
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	33	415	17	19	747	21	23	2	13	20	3	7
Added Vol:	33	91	15	26	100	8	16	0	20	32	0	12
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	66	506	32	45	847	29	39	2	33	52	3	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	69	533	34	47	892	31	41	2	35	55	3	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	69	533	34	47	892	31	41	2	35	55	3	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	69	533	34	47	892	31	41	2	35	55	3	20

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Saturation Flow Module:

Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.88	0.12	1.00	2.00	1.00	0.53	0.03	0.44	0.70	0.04	0.26
Final Sat.:	522	1074	68	559	1221	686	271	14	229	354	20	129

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Capacity Analysis Module:

Vol/Sat:	0.13	0.50	0.49	0.08	0.73	0.04	0.15	0.15	0.15	0.15	0.15	0.15
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Delay/Veh:	10.4	14.6	14.5	9.6	22.5	8.1	10.8	10.8	10.8	11.0	11.0	11.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.4	14.6	14.5	9.6	22.5	8.1	10.8	10.8	10.8	11.0	11.0	11.0
LOS by Move:	B	B	B	A	C	A	B	B	B	B	B	B
ApproachDel:	14.2			21.4			10.8			11.0		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	14.2			21.4			10.8			11.0		
LOS by Appr:	B			C			B			B		
AllWayAvgQ:	3.6	23.0	22.4	2.3	59.0	1.1	4.0	4.0	4.0	4.1	4.1	4.1

Note: Queue reported is the distance per lane in feet.

HCM Signalized Intersection Capacity Analysis

13: 9th St & Camino Del Mar

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	
Volume (vph)	47	1	48	29	2	18	55	560	22	38	861	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		0.98			0.98		1.00	1.00		1.00	1.00	
Fipb, ped/bikes		0.99			0.98		1.00	1.00		1.00	1.00	
Frt		0.93			0.95		1.00	0.99		1.00	0.99	
Fit Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1666			1697		1805	3590		1805	3586	
Fit Permitted		0.82			0.80		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1398			1393		1805	3590		1805	3586	
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)	49	1	51	31	2	19	58	589	23	40	906	36
RTOR Reduction (vph)	0	45	0	0	17	0	0	4	0	0	4	0
Lane Group Flow (vph)	0	56	0	0	35	0	58	608	0	40	938	0
Confl. Peds. (#/hr)	43		46	46		43	4					4
Turn Type	Perm		Perm		Prot		Prot		Prot			
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		4.5			4.5		2.2	18.7		2.0	18.5	
Effective Green, g (s)		4.5			4.5		2.2	18.7		2.0	18.5	
Actuated g/C Ratio		0.12			0.12		0.06	0.48		0.05	0.48	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		163			162		103	1735		93	1714	
v/s Ratio Prot							c0.03	0.17		0.02	c0.26	
v/s Ratio Perm		c0.04			0.03							
v/c Ratio		0.34			0.22		0.56	0.35		0.43	0.55	
Uniform Delay, d1		15.7			15.5		17.8	6.2		17.8	7.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.3			0.7		6.9	0.1		3.2	0.4	
Delay (s)		17.0			16.2		24.7	6.3		21.0	7.5	
Level of Service		B			B		C	A		C	A	
Approach Delay (s)		17.0			16.2			7.9			8.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	38.7	Sum of lost time (s)	13.5
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

14: Del Mar Heights Rd & Camino Del Mar

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	20	101	37	493	64	490	24	172	64	437	559	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00
Fit Protected		0.99	1.00	0.95	0.96	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		1884	1615	1715	1738	1615	1805	3610	1615	1805	3595	
Fit Permitted		0.99	1.00	0.95	0.96	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)		1884	1615	1715	1738	1615	1805	3610	1615	1805	3595	
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)	21	106	39	519	67	516	25	181	67	460	588	17
RTOR Reduction (vph)	0	0	35	0	0	274	0	0	56	0	2	0
Lane Group Flow (vph)	0	127	4	291	295	242	25	181	11	460	603	0
Turn Type	Split		Perm	Split		pm+ov	Prot		Perm	Prot		
Protected Phases	7	7		3	3	1	5	2		1	6	
Permitted Phases						3						
Actuated Green, G (s)		7.5	7.5	15.4	15.4	33.2	2.8	12.1	12.1	17.8	27.1	
Effective Green, g (s)		7.5	7.5	15.4	15.4	33.2	2.8	12.1	12.1	17.8	27.1	
Actuated g/C Ratio		0.11	0.11	0.22	0.22	0.47	0.04	0.17	0.17	0.25	0.38	
Clearance Time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		200	171	373	378	757	71	617	276	454	1376	
v/s Ratio Prot		c0.07		0.17	c0.17	0.08	0.01	0.05		c0.25	c0.17	
v/s Ratio Perm			0.00			0.07			0.01			
v/c Ratio		0.64	0.02	0.78	0.78	0.32	0.35	0.29	0.04	1.01	0.44	
Uniform Delay, d1		30.3	28.4	26.1	26.1	11.7	33.1	25.6	24.5	26.5	16.2	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		6.4	0.1	10.1	10.0	0.2	3.0	0.3	0.1	45.6	0.2	
Delay (s)		36.8	28.4	36.2	36.1	12.0	36.1	25.9	24.6	72.1	16.4	
Level of Service		D	C	D	D	B	D	C	C	E	B	
Approach Delay (s)		34.8			24.9			26.5			40.5	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	32.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

15: Carmel Valley Rd & Camino Del Mar

1/31/2012

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	570	74	115	50	185	843
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
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)	1805	1615	1900	1615	1805	1900
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1615	1900	1615	1805	1900
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	600	78	121	53	195	887
RTOR Reduction (vph)	0	50	0	37	0	0
Lane Group Flow (vph)	600	28	121	16	195	887
Turn Type	Perm		Perm		Prot	
Protected Phases	8		2		1	6
Permitted Phases	8		2			
Actuated Green, G (s)	25.8	25.8	21.9	21.9	10.4	36.8
Effective Green, g (s)	25.8	25.8	21.9	21.9	10.4	36.8
Actuated g/C Ratio	0.36	0.36	0.31	0.31	0.15	0.51
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	650	582	581	494	262	977
v/s Ratio Prot	c0.33		0.06		0.11	c0.47
v/s Ratio Perm		0.02		0.01		
v/c Ratio	0.92	0.05	0.21	0.03	0.74	0.91
Uniform Delay, d1	21.9	14.9	18.4	17.4	29.3	15.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.8	0.0	0.2	0.0	10.9	11.9
Delay (s)	40.7	14.9	18.6	17.5	40.2	27.7
Level of Service	D	B	B	B	D	C
Approach Delay (s)	37.8		18.3			30.0
Approach LOS	D		B			C

Intersection Summary			
HCM Average Control Delay	31.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	71.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

16: Del Mar Heights Rd & Crest Way

1/31/2012

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	6	871	806	152	88	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1805	3610	3610	1615	1808	
Flt Permitted	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1805	3610	3610	1615	1808	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	917	848	160	93	1
RTOR Reduction (vph)	0	0	0	90	1	0
Lane Group Flow (vph)	6	917	848	70	93	0
Turn Type	Prot		Perm			
Protected Phases	7	4	8		6	
Permitted Phases	8					
Actuated Green, G (s)	0.7	19.1	13.9	13.9	3.7	
Effective Green, g (s)	0.7	19.1	13.9	13.9	3.7	
Actuated g/C Ratio	0.02	0.60	0.44	0.44	0.12	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	40	2168	1578	706	210	
v/s Ratio Prot	0.00	c0.25	c0.23		c0.05	
v/s Ratio Perm				0.04		
v/c Ratio	0.15	0.42	0.54	0.10	0.44	
Uniform Delay, d1	15.3	3.4	6.6	5.3	13.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.7	0.1	0.4	0.1	1.5	
Delay (s)	17.0	3.5	6.9	5.3	14.6	
Level of Service	B	A	A	A	B	
Approach Delay (s)		3.6	6.7		14.6	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	5.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	31.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

17: Del Mar Heights Rd & I-5 SB Off-Ramp

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑				↓	↓	↓
Volume (vph)	0	669	764	0	1012	965	0	0	0	815	0	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5	4.5	4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	0.99	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)		3610	1615		3610	1615				1715	1635	1534
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)		3610	1615		3610	1615				1715	1635	1534
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	704	804	0	1065	1016	0	0	0	858	0	313
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	7	13
Lane Group Flow (vph)	0	704	804	0	1065	1016	0	0	0	446	436	269
Turn Type		Free			Free					Split		Perm
Protected Phases		4			8					1		1
Permitted Phases		Free			Free							1
Actuated Green, G (s)		15.6	40.5		15.6	40.5				15.9	15.9	15.9
Effective Green, g (s)		15.6	40.5		15.6	40.5				15.9	15.9	15.9
Actuated g/C Ratio		0.39	1.00		0.39	1.00				0.39	0.39	0.39
Clearance Time (s)		4.5			4.5					4.5	4.5	4.5
Vehicle Extension (s)		3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1391	1615		1391	1615				673	642	602
v/s Ratio Prot		0.20			0.30					0.26	0.27	
v/s Ratio Perm		0.50			c0.63							0.18
v/c Ratio		0.51	0.50		0.77	0.63				0.66	0.68	0.45
Uniform Delay, d1		9.5	0.0		10.9	0.0				10.1	10.2	9.1
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.3	1.1		2.6	1.9				2.5	2.9	0.5
Delay (s)		9.8	1.1		13.4	1.9				12.6	13.1	9.6
Level of Service		A			B					B	B	A
Approach Delay (s)		5.2			7.8			0.0		12.0		
Approach LOS		A			A			A		B		

Intersection Summary			
HCM Average Control Delay	8.0	HCM Level of Service	
HCM Volume to Capacity ratio	0.63	A	
Actuated Cycle Length (s)	40.5	Sum of lost time (s)	
Intersection Capacity Utilization	61.1%	0.0	
Analysis Period (min)	15	B	
		ICU Level of Service	
		E	
		13.5	
		87.9%	
		15	
		C	
		E	
		15	
		C	

HCM Signalized Intersection Capacity Analysis

18: Del Mar Heights Rd & I-5 NB On-Ramp

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑↑	↑				↓	↓	↓
Volume (vph)	236	1282	0	0	1519	807	420	0	811	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5	4.5	4.5	4.5	4.5			
Lane Util. Factor		0.97	0.95		0.91	1.00	0.95	0.91	0.95			
Frt		1.00	1.00		1.00	0.85	1.00	0.86	0.85			
Flt Protected		0.95	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		3502	3610		5187	1615	1715	1488	1534			
Flt Permitted		0.95	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		3502	3610		5187	1615	1715	1488	1534			
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)	248	1349	0	0	1599	849	442	0	854	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	560	0	18	18	0	0	0
Lane Group Flow (vph)	248	1349	0	0	1599	289	398	436	426	0	0	0
Turn Type		Prot			Perm					Split		Perm
Protected Phases		7			4					8		2
Permitted Phases										8		2
Actuated Green, G (s)		6.5	32.6				21.6	21.6	21.9	21.9	21.9	
Effective Green, g (s)		6.5	32.6				21.6	21.6	21.9	21.9	21.9	
Actuated g/C Ratio		0.10	0.51				0.34	0.34	0.34	0.34	0.34	
Clearance Time (s)		4.5	4.5				4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)		3.0	3.0				3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		358	1853				1764	549	591	513	529	
v/s Ratio Prot		0.07	c0.37				c0.31		0.23	c0.29		
v/s Ratio Perm								0.18			0.28	
v/c Ratio		0.69	0.73				0.91	0.53	0.67	0.85	0.80	
Uniform Delay, d1		27.5	12.0				20.0	16.8	17.7	19.3	18.9	
Progression Factor		1.00	1.00				1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		5.7	1.5				7.1	0.9	3.0	12.4	8.7	
Delay (s)		33.2	13.5				27.1	17.7	20.8	31.7	27.5	
Level of Service		C					C	B	C	C	C	
Approach Delay (s)		16.5					23.9		26.9		0.0	
Approach LOS		B					C		C		A	

Intersection Summary			
HCM Average Control Delay	22.4	HCM Level of Service	
HCM Volume to Capacity ratio	0.89	C	
Actuated Cycle Length (s)	63.5	Sum of lost time (s)	
Intersection Capacity Utilization	87.9%	13.5	
Analysis Period (min)	15	E	
		13.5	
		87.9%	
		15	
		C	
		E	
		15	
		C	

HCM Signalized Intersection Capacity Analysis

19: Del Mar Heights Rd & High Bluff Dr

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔↔	↔	↔	↔	↔
Volume (vph)	93	1179	790	111	1910	70	180	12	5	84	42	339
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.97	0.95	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99	1.00	0.96	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1615	1805	5159	3502	3460	1805	1900	1615	1900	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1615	1805	5159	3502	3460	1805	1900	1615	1900	1615
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)	98	1241	832	117	2011	74	189	13	5	88	44	357
RTOR Reduction (vph)	0	0	275	0	4	0	0	5	0	0	0	43
Lane Group Flow (vph)	98	1241	557	117	2081	0	189	13	0	88	44	314
Turn Type	Prot		pm+ov	Prot		Prot		pm+ov		Prot		pm+ov
Protected Phases	7	4	5	3	8	5	2	1	6	7		
Permitted Phases			4									6
Actuated Green, G (s)	6.1	35.1	46.4	8.1	37.1	11.3	4.2	13.3	6.2	12.3		12.3
Effective Green, g (s)	6.1	35.1	46.4	8.1	37.1	11.3	4.2	13.3	6.2	12.3		12.3
Actuated g/C Ratio	0.08	0.45	0.59	0.10	0.47	0.14	0.05	0.17	0.08	0.16		0.16
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	140	2313	1045	186	2432	503	185	305	150	345		345
v/s Ratio Prot	0.05	0.24	c0.08	0.06	c0.40	0.05	0.00	0.05	0.02	c0.07		c0.07
v/s Ratio Perm			0.27							0.12		0.12
v/c Ratio	0.70	0.54	0.53	0.63	0.86	0.38	0.07	0.29	0.29	0.91		0.91
Uniform Delay, d1	35.4	15.9	9.7	33.9	18.4	30.5	35.4	28.6	34.2	32.7		32.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	14.6	0.2	0.5	6.5	3.2	0.5	0.2	0.5	1.1	27.1		27.1
Delay (s)	50.0	16.1	10.2	40.4	21.6	31.0	35.6	29.1	35.3	59.7		59.7
Level of Service	D	B	B	D	C	C	D	C	D	E		E
Approach Delay (s)		15.4			22.6		31.4			52.0		
Approach LOS		B			C		C			D		

Intersection Summary			
HCM Average Control Delay	22.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	78.7	Sum of lost time (s)	0.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

20: Del Mar Heights Rd & El Camino Real

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔↔	↔	↔	↔	↔
Volume (vph)	258	906	251	224	1682	70	235	123	139	173	361	488
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.91	0.97	0.91	0.97	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Frt	1.00	0.97	1.00	0.99	1.00	0.99	1.00	1.00	0.85	1.00	0.91	0.91
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3502	5018	3502	5156	3502	5156	3502	5187	1615	3502	4740	4740
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5018	3502	5156	3502	5156	3502	5187	1615	3502	4740	4740
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)	272	954	264	236	1771	74	247	129	146	182	380	514
RTOR Reduction (vph)	0	61	0	0	6	0	0	0	20	0	159	0
Lane Group Flow (vph)	272	1157	0	236	1839	0	247	129	126	182	735	0
Turn Type	Prot			Prot		Prot		pm+ov	Prot			pm+ov
Protected Phases	7	4		3	8	5	2	3	1	6		
Permitted Phases								2				
Actuated Green, G (s)	7.5	27.6		9.4	29.5	6.9	14.2	23.6	10.1	17.4		17.4
Effective Green, g (s)	7.5	27.6		9.4	29.5	6.9	14.2	23.6	10.1	17.4		17.4
Actuated g/C Ratio	0.09	0.35		0.12	0.37	0.09	0.18	0.30	0.13	0.22		0.22
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	331	1746		415	1918	305	929	572	446	1040		1040
v/s Ratio Prot	c0.08	0.23		0.07	c0.36	c0.07	0.02	0.03	0.05	c0.16		c0.16
v/s Ratio Perm								0.05				
v/c Ratio	0.82	0.66		0.57	0.96	0.81	0.14	0.22	0.41	1.03dr		1.03dr
Uniform Delay, d1	35.2	21.9		33.0	24.3	35.6	27.4	20.9	31.8	28.6		28.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	15.0	1.0		1.8	12.2	14.6	0.1	0.2	0.6	2.2		2.2
Delay (s)	50.3	22.9		34.8	36.5	50.2	27.5	21.1	32.5	30.8		30.8
Level of Service	D	C		C	D	D	C	C	C	C		C
Approach Delay (s)		27.9			36.3		36.4			31.1		
Approach LOS		C			D		D			C		

Intersection Summary			
HCM Average Control Delay	32.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	79.3	Sum of lost time (s)	13.5
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		
dr Defacto Right Lane. Recode with 1 though lane as a right lane.			
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

21: 15th St & Ocean Ave

1/31/2012



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↑			↘
Sign Control	Stop		Stop			Stop
Volume (vph)	39	60	15	27	81	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	41	63	16	28	85	26

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	104	44	112
Volume Left (vph)	41	0	85
Volume Right (vph)	63	28	0
Hadj (s)	-0.28	-0.39	0.15
Departure Headway (s)	4.0	3.8	4.3
Degree Utilization, x	0.11	0.05	0.13
Capacity (veh/h)	874	895	811
Control Delay (s)	7.5	7.0	8.0
Approach Delay (s)	7.5	7.0	8.0
Approach LOS	A	A	A

Intersection Summary			
Delay		7.6	
HCM Level of Service		A	
Intersection Capacity Utilization	25.0%	ICU Level of Service	A
Analysis Period (min)		15	

HCM Signalized Intersection Capacity Analysis

1: Via De La Valle & Camino Del Mar

2/1/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	6	99	27	127	84	421	31	648	85	282	344	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1895	1615	1805	1900	1615	1805	3610	1615	1805	3610	3610	1615
Flt Permitted	0.99	1.00	0.69	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1872	1615	1304	1900	1615	1805	3610	1615	1805	3610	3610	1615
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)	6	104	28	134	88	443	33	682	89	297	362	7
RTOR Reduction (vph)	0	0	22	0	0	353	0	0	59	0	0	3
Lane Group Flow (vph)	0	110	6	134	88	90	33	682	30	297	362	4
Turn Type	Perm	Perm	Perm	Perm	Prot	Perm	Prot	Perm	Prot	Perm	Prot	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4								2			6
Actuated Green, G (s)		12.5	12.5	12.5	12.5	12.5	2.6	20.5	20.5	15.2	33.1	33.1
Effective Green, g (s)		12.5	12.5	12.5	12.5	12.5	2.6	20.5	20.5	15.2	33.1	33.1
Actuated g/C Ratio		0.20	0.20	0.20	0.20	0.20	0.04	0.33	0.33	0.25	0.54	0.54
Clearance Time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		379	327	264	385	327	76	1199	537	445	1937	866
v/s Ratio Prot				0.05			0.02	0.19		0.16	0.10	
v/s Ratio Perm		0.06	0.00	0.10		0.06			0.02			0.00
v/c Ratio		0.29	0.02	0.51	0.23	0.27	0.43	0.57	0.06	0.67	0.19	0.00
Uniform Delay, d1		20.8	19.7	21.9	20.6	20.8	28.8	17.0	14.0	21.0	7.4	6.6
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.4	0.0	1.5	0.3	0.5	3.9	0.6	0.0	3.8	0.0	0.0
Delay (s)		21.3	19.7	23.4	20.9	21.2	32.8	17.6	14.1	24.7	7.4	6.6
Level of Service		C	B	C	C	C	C	B	B	C	A	A
Approach Delay (s)		21.0			21.6			17.8			15.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	61.7	Sum of lost time (s)	13.5
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

2: Via De La Valle & Jimmy Durante Blvd

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	45	548	23	399	557	396	81	149	836	439	92	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.0	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	1.00	0.88	0.97	1.00	1.00
Frt	1.00	0.99		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3588		3502	3385		1805	1900	2842	3502	1900	1615
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3588		3502	3385		1805	1900	2842	3502	1900	1615
Peak-hour factor, PHF	0.95	0.95		0.95	0.95		0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	47	577		24	420		85	157	880	462	97	72
RTOR Reduction (vph)	0	4		0	0		0	0	0	0	0	59
Lane Group Flow (vph)	47	597		0	420		85	157	880	462	97	13
Turn Type	Prot	Prot		Prot	Prot		Split	Free	Split	Split	Perm	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases								Free			6	6
Actuated Green, G (s)	4.4	23.2		12.4	31.2		11.7	11.7	79.8	14.5	14.5	14.5
Effective Green, g (s)	4.4	23.2		12.4	31.2		11.7	11.7	79.8	14.5	14.5	14.5
Actuated g/C Ratio	0.06	0.29		0.16	0.39		0.15	0.15	1.00	0.18	0.18	0.18
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	100	1043		544	1323		265	279	2842	636	345	293
v/s Ratio Prot	0.03	0.17		0.12	0.30		0.05	0.08		0.13	0.05	
v/s Ratio Perm									0.31			0.01
v/c Ratio	0.47	0.57		0.77	0.76		0.32	0.56	0.31	0.73	0.28	0.04
Uniform Delay, d1	36.6	24.1		32.3	21.0		30.5	31.7	0.0	30.8	28.2	26.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.5	0.8		6.7	2.5		0.7	2.6	0.3	4.1	0.4	0.1
Delay (s)	40.0	24.8		39.1	23.6		31.2	34.3	0.3	34.9	28.6	27.0
Level of Service	D	C		D	C		C	C	A	C	C	C
Approach Delay (s)		25.9			28.1			7.4			33.0	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	79.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

3: Via De La Valle & I-5 SB Off-Ramp

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑				↓	↓	↓
Volume (vph)	0	942	673	0	1260	356	0	0	0	355	0	349
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5	4.5	4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	0.92	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.98	1.00
Satd. Flow (prot)		3610	1615		3610	1615				1715	1555	1534
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.98	1.00
Satd. Flow (perm)		3610	1615		3610	1615				1715	1555	1534
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	992	708	0	1326	375	0	0	0	374	0	367
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	13	13
Lane Group Flow (vph)	0	992	708	0	1326	375	0	0	0	258	235	222
Turn Type		Free			Free					Split	Perm	
Protected Phases		4			8					6	6	
Permitted Phases		Free			Free						6	
Actuated Green, G (s)		18.7	39.2		18.7	39.2				11.5	11.5	11.5
Effective Green, g (s)		18.7	39.2		18.7	39.2				11.5	11.5	11.5
Actuated g/C Ratio		0.48	1.00		0.48	1.00				0.29	0.29	0.29
Clearance Time (s)		4.5			4.5					4.5	4.5	4.5
Vehicle Extension (s)		3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1722	1615		1722	1615				503	456	450
v/s Ratio Prot		0.27			c0.37					0.15	0.15	
v/s Ratio Perm		c0.44			0.23							0.14
v/c Ratio		0.58	0.44		0.77	0.23				0.51	0.51	0.49
Uniform Delay, d1		7.4	0.0		8.5	0.0				11.5	11.5	11.4
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.5	0.9		2.2	0.3				0.9	1.0	0.9
Delay (s)		7.9	0.9		10.7	0.3				12.4	12.5	12.3
Level of Service		A			B					B	B	B
Approach Delay (s)		4.9			8.4			0.0		12.4		
Approach LOS		A			A			A		B		
Intersection Summary												
HCM Average Control Delay		7.7			HCM Level of Service			A				
HCM Volume to Capacity ratio		0.62										
Actuated Cycle Length (s)		39.2			Sum of lost time (s)			4.5				
Intersection Capacity Utilization		56.7%			ICU Level of Service			B				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Via De La Valle & I-5 NB On-Ramp

2/1/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑				↓	↓	↓
Volume (vph)	0	798	438	0	881	372	760	0	490	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frt		1.00	0.85		1.00	0.85	1.00	0.97	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)		3610	1615		3610	1615	1715	1607	1534			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)		3610	1615		3610	1615	1715	1607	1534			
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	840	461	0	927	392	800	0	516	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	25	37	0	0	0
Lane Group Flow (vph)	0	840	461	0	927	392	456	422	376	0	0	0
Turn Type		Free			Free		Perm	Perm				
Protected Phases		4			8			2	2			
Permitted Phases		Free			Free			2	2			
Actuated Green, G (s)		15.1	39.7		15.1	39.7	15.6	15.6	15.6			
Effective Green, g (s)		15.1	39.7		15.1	39.7	15.6	15.6	15.6			
Actuated g/C Ratio		0.38	1.00		0.38	1.00	0.39	0.39	0.39			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)		1373	1615		1373	1615	674	631	603			
v/s Ratio Prot		0.23			c0.26							
v/s Ratio Perm		0.29			0.24		c0.27	0.26	0.25			
v/c Ratio		0.61	0.29		0.68	0.24	0.68	0.67	0.62			
Uniform Delay, d1		9.9	0.0		10.3	0.0	10.0	9.9	9.7			
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.8	0.4		1.3	0.4	2.7	2.7	2.0			
Delay (s)		10.7	0.4		11.6	0.4	12.7	12.6	11.7			
Level of Service		B			A		B	B	B			
Approach Delay (s)		7.1			8.2		12.3			0.0		
Approach LOS		A			A		B			A		
Intersection Summary												
HCM Average Control Delay		9.2			HCM Level of Service			A				
HCM Volume to Capacity ratio		0.68										
Actuated Cycle Length (s)		39.7			Sum of lost time (s)			9.0				
Intersection Capacity Utilization		57.9%			ICU Level of Service			B				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Via De La Valle & San Andres Dr

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑↑	↑	↑	↑↑	↑↑	↑	↑	↑	↑	↑	↑
Volume (vph)	309	720	20	71	906	125	64	50	66	104	37	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.95	0.95			0.95	0.95
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92			0.99	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.97	1.00
Satd. Flow (prot)	3502	3610	1615	1805	3610	1615	1715	1656			1721	1534
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.97	1.00
Satd. Flow (perm)	3502	3610	1615	1805	3610	1615	1715	1656			1721	1534
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)	325	758	21	75	954	132	67	53	69	109	39	160
RTOR Reduction (vph)	0	0	8	0	0	85	0	50	0	0	4	121
Lane Group Flow (vph)	325	758	13	75	954	47	60	79	0	0	160	23
Turn Type	Prot	Perm	Perm	Prot	Perm	Split	Split	Perm			Perm	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4		8							6
Actuated Green, G (s)	11.1	31.3	31.3	6.7	26.9	26.9	7.5	7.5			12.1	12.1
Effective Green, g (s)	11.1	31.3	31.3	6.7	26.9	26.9	7.5	7.5			12.1	12.1
Actuated g/C Ratio	0.15	0.41	0.41	0.09	0.36	0.36	0.10	0.10			0.16	0.16
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	514	1495	669	160	1285	575	170	164			275	246
v/s Ratio Prot	c0.09	c0.21		0.04	c0.26		0.03	c0.05			c0.09	
v/s Ratio Perm			0.01		0.03							0.02
v/c Ratio	0.63	0.51	0.02	0.47	0.74	0.08	0.35	0.48			0.58	0.09
Uniform Delay, d1	30.3	16.4	13.1	32.8	21.3	16.2	31.8	32.2			29.4	27.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	2.5	0.3	0.0	2.2	2.4	0.1	1.3	2.2			3.1	0.2
Delay (s)	32.9	16.7	13.1	34.9	23.7	16.2	33.1	34.4			32.5	27.2
Level of Service	C	B	B	C	C	B	C	C			C	C
Approach Delay (s)		21.4			23.6			34.0				30.0
Approach LOS		C			C			C				C

Intersection Summary			
HCM Average Control Delay	24.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	75.6	Sum of lost time (s)	22.5
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Level of Service Computation Report
 2000 HCM 4-Way Stop Method (Future Volume Alternative)

 Intersection #6 Camino Del Mar & Coast Blvd

Cycle (sec): 100 Critical Vol./Cap.(X): 0.681
 Loss Time (sec): 0 Average Delay (sec/veh): 15.1
 Optimal Cycle: 0 Level Of Service: C

Street Name: Camino Del Mar Coast Blvd
 Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R L - T - R L - T - R

-----|-----|-----|-----|-----|-----|-----|-----|-----|
 Control: Stop Sign Stop Sign Stop Sign Stop Sign
 Rights: Include Include Include Include
 Min. Green: 5 5 5 5 5 5 5 5 5 5 5 5 5
 Lanes: 1 0 1 0 1 1 0 1 0 1 0 1 0 0 1 0 0 0
 -----|-----|-----|-----|-----|-----|-----|-----|-----|

Volume Module:
 Base Vol: 16 378 4 12 215 86 93 0 7 6 0 4
 Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 Initial Bse: 16 378 4 12 215 86 93 0 7 6 0 4
 Added Vol: 0 18 0 0 27 0 0 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 16 396 4 12 242 86 93 0 7 6 0 4
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
 PHF Volume: 17 417 4 13 255 91 98 0 7 6 0 4
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 17 417 4 13 255 91 98 0 7 6 0 4
 PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 Final Volume: 17 417 4 13 255 91 98 0 7 6 0 4
 -----|-----|-----|-----|-----|-----|-----|-----|-----|

Saturation Flow Module:
 Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 0.60 0.00 0.40
 Final Sat.: 557 613 684 534 582 652 480 0 568 292 0 195
 -----|-----|-----|-----|-----|-----|-----|-----|-----|

Capacity Analysis Module:
 Vol/Sat: 0.03 0.68 0.01 0.02 0.44 0.14 0.20 xxxx 0.01 0.02 xxxx 0.02
 Crit Moves: **** *
 Delay/Veh: 9.2 19.4 7.8 9.3 13.0 8.8 11.4 0.0 8.6 9.8 0.0 9.8
 Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 AdjDel/Veh: 9.2 19.4 7.8 9.3 13.0 8.8 11.4 0.0 8.6 9.8 0.0 9.8
 LOS by Move: A C A A B A B * A A * A
 ApproachDel: 18.9 11.8 11.2 9.8
 Delay Adj: 1.00 1.00 1.00 1.00
 ApprAdjDel: 18.9 11.8 11.2 9.8
 LOS by Appr: C B B A
 AllWayAvgQ: 0.7 46.3 0.1 0.6 17.5 3.7 5.5 5.5 0.3 0.4 0.4 0.4

Note: Queue reported is the distance per lane in feet.

HCM Unsignalized Intersection Capacity Analysis

7: 15th St & Stratford Ct

1/31/2012



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Volume (veh/h)	158	32	30	189	51	51
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	166	34	32	199	54	54
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				311		
pX, platoon unblocked						
vC, conflicting volume			200		445	183
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			200		445	183
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		90	94
cM capacity (veh/h)			1384		561	864

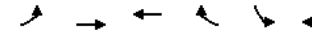
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	200	231	107
Volume Left	0	32	54
Volume Right	34	0	54
cSH	1700	1384	681
Volume to Capacity	0.12	0.02	0.16
Queue Length 95th (ft)	0	2	14
Control Delay (s)	0.0	1.2	11.3
Lane LOS		A	B
Approach Delay (s)	0.0	1.2	11.3
Approach LOS			B

Intersection Summary			
Average Delay		2.8	
Intersection Capacity Utilization	37.8%		ICU Level of Service A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

8: 12th St & Stratford Ct

1/31/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Volume (veh/h)	39	9	5	10	13	13
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	41	9	5	11	14	14
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	16				102	11
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	16				102	11
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				98	99
cM capacity (veh/h)	1615				878	1076

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	51	16	27
Volume Left	41	0	14
Volume Right	0	11	14
cSH	1615	1700	967
Volume to Capacity	0.03	0.01	0.03
Queue Length 95th (ft)	2	0	2
Control Delay (s)	6.0	0.0	8.8
Lane LOS	A		A
Approach Delay (s)	6.0	0.0	8.8
Approach LOS			A

Intersection Summary			
Average Delay		5.8	
Intersection Capacity Utilization	19.3%		ICU Level of Service A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis

9: 15th St & Camino Del Mar

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	
Volume (vph)	78	19	103	58	25	87	147	745	63	71	443	89	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	
Frbp, ped/bikes	1.00	0.83	1.00	1.00	0.73	1.00	0.99	1.00	0.98	1.00	0.98	1.00	
Fipb, ped/bikes	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	1.00	0.85	1.00	1.00	0.85	1.00	0.99	1.00	0.97	1.00	0.97	1.00	
Flt Protected	0.96	1.00	0.95	0.98	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1827	1343	1715	1769	1187	1805	3541	1805	3461	1805	3461	1805	
Flt Permitted	0.96	1.00	0.95	0.98	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1827	1343	1715	1769	1187	1805	3541	1805	3461	1805	3461	1805	
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)	82	20	108	61	26	92	155	784	66	75	466	94	
RTOR Reduction (vph)	0	0	97	0	0	84	0	10	0	0	26	0	
Lane Group Flow (vph)	0	102	11	43	44	8	155	840	0	75	534	0	
Confl. Peds. (#/hr)			52			74			50			50	
Turn Type	Split	Perm	Split	Perm	Prot	Prot	Prot	Prot	Prot	Prot	Prot	Prot	
Protected Phases	7	7		3	3		5	2		1	6		
Permitted Phases			7			3							
Actuated Green, G (s)	5.0	5.0	4.4	4.4	4.4	6.2	20.6			3.2	17.6		
Effective Green, g (s)	5.0	5.0	4.4	4.4	4.4	6.2	20.6			3.2	17.6		
Actuated g/C Ratio	0.10	0.10	0.09	0.09	0.09	0.12	0.40			0.06	0.34		
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0		
Lane Grp Cap (vph)	178	131	147	152	102	219	1425			113	1190		
v/s Ratio Prot	c0.06		c0.03	0.02		c0.09	c0.24			0.04	0.15		
v/s Ratio Perm		0.01			0.01								
v/c Ratio	0.57	0.08	0.29	0.29	0.08	0.71	0.59			0.66	0.45		
Uniform Delay, d1	22.1	21.0	21.9	21.9	21.5	21.6	12.0			23.5	13.0		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00		
Incremental Delay, d2	4.4	0.3	1.1	1.1	0.3	10.0	0.6			13.7	0.3		
Delay (s)	26.5	21.3	23.1	23.0	21.9	31.6	12.6			37.2	13.3		
Level of Service	C	C	C	C	C	C	B			D	B		
Approach Delay (s)	23.8			22.4			15.5				16.1		
Approach LOS	C			C			B				B		
Intersection Summary													
HCM Average Control Delay		17.2		HCM Level of Service								B	
HCM Volume to Capacity ratio		0.60											
Actuated Cycle Length (s)		51.2		Sum of lost time (s)				18.0					
Intersection Capacity Utilization		59.2%		ICU Level of Service							B		
Analysis Period (min)		15											

c Critical Lane Group

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #10 Camino Del Mar & 13th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.909
Loss Time (sec): 0 Average Delay (sec/veh): 29.1
Optimal Cycle: 0 Level Of Service: D

Street Name: Camino Del Mar 13th St

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Stop Sign	Stop Sign	Stop Sign	Stop Sign
Right:	Include	Include	Include	Include
Min. Green:	5 5 5	5 5 5	5 5 5	5 5 5
Lanes:	1 0 1 1 0	1 0 1 1 0	0 0 1! 0 0	0 0 1! 0 0

Volume Module:

Base Vol:	102	860	15	30	400	27	17	2	72	35	5	13
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	102	860	15	30	400	27	17	2	72	35	5	13
Added Vol:	47	102	17	20	112	14	10	0	20	37	0	14
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	149	962	32	50	512	41	27	2	92	72	5	27
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	157	1013	34	53	539	43	28	2	97	76	5	28
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	157	1013	34	53	539	43	28	2	97	76	5	28
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	157	1013	34	53	539	43	28	2	97	76	5	28

Saturation Flow Module:

Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.94	0.06	1.00	1.85	0.15	0.22	0.02	0.76	0.69	0.05	0.26
Final Sat.:	528	1114	37	476	958	77	115	9	393	336	23	126

Capacity Analysis Module:

Vol/Sat:	0.30	0.91	0.91	0.11	0.56	0.56	0.25	0.25	0.25	0.23	0.23	0.23
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Delay/Veh:	12.3	42.7	42.1	11.0	17.7	17.4	11.8	11.8	11.8	12.1	12.1	12.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.3	42.7	42.1	11.0	17.7	17.4	11.8	11.8	11.8	12.1	12.1	12.1
LOS by Move:	B	E	E	B	C	C	B	B	B	B	B	B
ApproachDel:	38.7			17.1			11.8			12.1		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	38.7			17.1			11.8			12.1		
LOS by Appr:	E			C			B			B		
AllWayAvgQ:	10.3	137	133.0	3.0	29.7	28.8	7.5	7.5	7.5	6.7	6.7	6.7

Note: Queue reported is the distance per lane in feet.

HCM Unsignalized Intersection Capacity Analysis
11: 12th St & Camino Del Mar

Ex PM + Proj NB
3/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑		↑↑	↑		↑↑	
Volume (veh/h)	0	0	48	0	0	27	0	1025	38	0	721	19
Sign Control		Stop			Stop			Free			Free	
Grade		0%			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
Hourly flow rate (vph)	0	0	51	0	0	28	0	1079	40	0	759	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	1337	1888	389	1509	1858	539	779			1119		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1337	1888	389	1509	1858	539	779			1119		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	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 %	100	100	92	100	100	94	100			100		
cM capacity (veh/h)	107	71	615	78	74	492	847			632		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2					
Volume Total	51	28	539	539	40	506	273					
Volume Left	0	0	0	0	0	0	0					
Volume Right	51	28	0	0	40	0	20					
cSH	615	492	1700	1700	1700	1700	1700					
Volume to Capacity	0.08	0.06	0.32	0.32	0.02	0.30	0.16					
Queue Length 95th (ft)	7	5	0	0	0	0	0					
Control Delay (s)	11.4	12.8	0.0	0.0	0.0	0.0	0.0					
Lane LOS	B	B										
Approach Delay (s)	11.4	12.8	0.0			0.0						
Approach LOS	B	B										
Intersection Summary												
Average Delay			0.5									
Intersection Capacity Utilization			38.3%			ICU Level of Service				A		
Analysis Period (min)			15									

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #12 Camino Del Mar & 11th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.949
Loss Time (sec): 0 Average Delay (sec/veh): 34.2
Optimal Cycle: 0 Level Of Service: D

Street Name: Camino Del Mar 11th St

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Stop Sign	Stop Sign	Stop Sign	Stop Sign
Rights:	Include	Include	Include	Include
Min. Green:	5 5 5	5 5 5	5 5 5	5 5 5
Lanes:	1 0 1 1 0	1 0 2 0 1	0 0 1! 0 0	0 0 1! 0 0

Volume Module:

Base Vol:	30	850	15	36	545	10	19	2	21	31	3	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	30	850	15	36	545	10	19	2	21	31	3	12
Added Vol:	53	137	24	42	129	13	19	0	24	37	0	14
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	83	987	39	78	674	23	38	2	45	68	3	26
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	87	1039	41	82	709	24	40	2	47	72	3	27
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	1039	41	82	709	24	40	2	47	72	3	27
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	87	1039	41	82	709	24	40	2	47	72	3	27

Saturation Flow Module:

Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.92	0.08	1.00	2.00	1.00	0.45	0.02	0.53	0.70	0.03	0.27
Final Sat.:	521	1095	43	490	1055	584	223	12	265	344	15	132

Capacity Analysis Module:

Vol/Sat:	0.17	0.95	0.94	0.17	0.67	0.04	0.18	0.18	0.18	0.21	0.21	0.21
Crit Moves:	****			****					****			
Delay/Veh:	10.9	50.4	49.4	11.4	21.9	9.0	11.5	11.5	11.5	11.9	11.9	11.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.9	50.4	49.4	11.4	21.9	9.0	11.5	11.5	11.5	11.9	11.9	11.9
LOS by Move:	B	F	E	B	C	A	B	B	B	B	B	B
ApproachDel:	47.4			20.4			11.5			11.9		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	47.4			20.4			11.5			11.9		
LOS by Appr:	E			C			B			B		
AllWayAvgQ:	4.9	166	160.6	4.9	45.5	1.0	5.1	5.1	5.1	6.1	6.1	6.1

Note: Queue reported is the distance per lane in feet.

HCM Signalized Intersection Capacity Analysis

13: 9th St & Camino Del Mar

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations		↔			↔		↔	↕		↔	↕			
Volume (vph)	27	0	42	37	4	23	45	1066	41	45	762	13		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	4.5				4.5		4.5	4.5		4.5	4.5			
Lane Util. Factor	1.00				1.00		1.00	0.95		1.00	0.95			
Frpb, ped/bikes	0.97				0.98		1.00	1.00		1.00	1.00			
Flpb, ped/bikes	0.98				0.98		1.00	1.00		1.00	1.00			
Frt	0.92				0.95		1.00	0.99		1.00	1.00			
Fit Protected	0.98				0.97		0.95	1.00		0.95	1.00			
Satd. Flow (prot)	1638				1692		1805	3590		1805	3598			
Fit Permitted	0.84				0.78		0.95	1.00		0.95	1.00			
Satd. Flow (perm)	1408				1358		1805	3590		1805	3598			
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)	28	0	44	39	4	24	47	1122	43	47	802	14		
RTOR Reduction (vph)	0	39	0	0	21	0	0	3	0	0	1	0		
Lane Group Flow (vph)	0	33	0	0	46	0	47	1162	0	47	815	0		
Confl. Peds. (#/hr)	57		44	44		57	13					13		
Turn Type	Perm		Perm				Prot		Prot					
Protected Phases	4		8				5		2		1		6	
Permitted Phases	4		8				5		2		1		6	
Actuated Green, G (s)	4.5		4.5				2.2		20.4		2.2		20.4	
Effective Green, g (s)	4.5		4.5				2.2		20.4		2.2		20.4	
Actuated g/C Ratio	0.11		0.11				0.05		0.50		0.05		0.50	
Clearance Time (s)	4.5		4.5				4.5		4.5		4.5		4.5	
Vehicle Extension (s)	3.0		3.0				3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	156		151				98		1804		98		1808	
v/s Ratio Prot							c0.03		c0.32		0.03		0.23	
v/s Ratio Perm	0.02		c0.03											
v/c Ratio	0.21		0.30				0.48		0.64		0.48		0.45	
Uniform Delay, d1	16.4		16.6				18.6		7.4		18.6		6.5	
Progression Factor	1.00		1.00				1.00		1.00		1.00		1.00	
Incremental Delay, d2	0.7		1.1				3.7		0.8		3.7		0.2	
Delay (s)	17.1		17.7				22.3		8.2		22.3		6.7	
Level of Service	B		B				C		A		C		A	
Approach Delay (s)	17.1		17.7				8.8		7.5					
Approach LOS	B		B				A		A					
Intersection Summary														
HCM Average Control Delay	8.8		HCM Level of Service				A							
HCM Volume to Capacity ratio	0.57													
Actuated Cycle Length (s)	40.6		Sum of lost time (s)				13.5							
Intersection Capacity Utilization	57.3%		ICU Level of Service				B							
Analysis Period (min)	15													
c Critical Lane Group														

HCM Signalized Intersection Capacity Analysis

14: Del Mar Heights Rd & Camino Del Mar

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↕	↕	↔	↕	
Volume (vph)	24	57	21	106	132	600	58	606	438	543	281	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	1.00	0.99
Fit Protected	0.99	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1872	1615	1715	1798	1615	1805	3610	1615	1805	1615	1805	3573
Fit Permitted	0.99	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1872	1615	1715	1798	1615	1805	3610	1615	1805	1615	1805	3573
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)	25	60	22	112	139	632	61	638	461	572	296	22
RTOR Reduction (vph)	0	0	21	0	0	95	0	0	228	0	6	0
Lane Group Flow (vph)	0	85	1	101	150	537	61	638	233	572	312	0
Turn Type	Split		Perm		Split		pm+ov		Prot		Perm	
Protected Phases	7		7		3		3		1		5	
Permitted Phases	7		7		3		3		1		5	
Actuated Green, G (s)	4.1		4.1		8.5		8.5		35.6		3.9	
Effective Green, g (s)	4.1		4.1		8.5		8.5		35.6		3.9	
Actuated g/C Ratio	0.05		0.05		0.11		0.11		0.46		0.05	
Clearance Time (s)	4.5		4.5		4.5		4.5		4.5		4.5	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	99		86		189		198		744		91	
v/s Ratio Prot	c0.05				0.06		c0.08		0.25		c0.18	
v/s Ratio Perm			0.00				0.08				0.14	
v/c Ratio	0.86		0.01		0.53		0.76		0.72		0.67	
Uniform Delay, d1	36.3		34.7		32.5		33.4		16.8		36.1	
Progression Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Incremental Delay, d2	47.9		0.1		2.9		15.2		3.5		17.7	
Delay (s)	84.2		34.7		35.4		48.6		20.3		53.7	
Level of Service	F		C		D		D		C		D	
Approach Delay (s)	74.0						26.8				29.3	
Approach LOS	E						C				C	
Intersection Summary												
HCM Average Control Delay	30.0		HCM Level of Service				C					
HCM Volume to Capacity ratio	0.81											
Actuated Cycle Length (s)	77.3		Sum of lost time (s)				18.0					
Intersection Capacity Utilization	73.1%		ICU Level of Service				D					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

15: Carmel Valley Rd & Camino Del Mar

2/1/2012

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↑	↘	↙	↘
Volume (vph)	132	151	879	320	142	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
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)	1805	1615	1900	1615	1805	1900
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1615	1900	1615	1805	1900
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	139	159	925	337	149	240
RTOR Reduction (vph)	0	135	0	95	0	0
Lane Group Flow (vph)	139	24	925	242	149	240
Turn Type	Perm		Perm		Prot	
Protected Phases	8		2		1	6
Permitted Phases	8		2			
Actuated Green, G (s)	11.4	11.4	42.0	42.0	10.0	56.5
Effective Green, g (s)	11.4	11.4	42.0	42.0	10.0	56.5
Actuated g/C Ratio	0.15	0.15	0.55	0.55	0.13	0.73
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	268	239	1038	882	235	1396
v/s Ratio Prot	c0.08		c0.49		c0.08	0.13
v/s Ratio Perm	0.01		0.15			
v/c Ratio	0.52	0.10	0.89	0.27	0.63	0.17
Uniform Delay, d1	30.2	28.3	15.4	9.3	31.7	3.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	0.2	9.8	0.2	5.5	0.1
Delay (s)	31.9	28.5	25.2	9.5	37.2	3.2
Level of Service	C		C		A	A
Approach Delay (s)	30.1		21.0		16.2	
Approach LOS	C		C		B	

Intersection Summary			
HCM Average Control Delay	21.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	76.9	Sum of lost time (s)	13.5
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

16: Del Mar Heights Rd & Crest Way

1/31/2012

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↗	↖	↖	↗
Volume (vph)	5	629	978	79	136	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1805	3610	3610	1615	1804	
Flt Permitted	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1805	3610	3610	1615	1804	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	662	1029	83	143	5
RTOR Reduction (vph)	0	0	0	47	3	0
Lane Group Flow (vph)	5	662	1029	36	145	0
Turn Type	Prot		Perm			
Protected Phases	7	4	8		6	
Permitted Phases	8					
Actuated Green, G (s)	0.5	20.7	15.7	15.7	6.2	
Effective Green, g (s)	0.5	20.7	15.7	15.7	6.2	
Actuated g/C Ratio	0.01	0.58	0.44	0.44	0.17	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	25	2082	1579	706	312	
v/s Ratio Prot	0.00	c0.18	c0.29		c0.08	
v/s Ratio Perm	0.02					
v/c Ratio	0.20	0.32	0.65	0.05	0.46	
Uniform Delay, d1	17.5	3.9	7.9	5.8	13.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.9	0.1	1.0	0.0	1.1	
Delay (s)	21.4	4.0	8.9	5.8	14.4	
Level of Service	C		A	A	B	
Approach Delay (s)	4.2		8.7		14.4	
Approach LOS	A		A		B	

Intersection Summary			
HCM Average Control Delay	7.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	35.9	Sum of lost time (s)	13.5
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

17: Del Mar Heights Rd & I-5 SB Off-Ramp

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑				↑	↑↑	↑
Volume (vph)	0	857	451	0	1096	558	0	0	0	881	0	259
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5	4.5	4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	0.99	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)		3610	1615		3610	1615				1715	1637	1534
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)		3610	1615		3610	1615				1715	1637	1534
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	902	475	0	1154	587	0	0	0	927	0	273
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	5	9
Lane Group Flow (vph)	0	902	475	0	1154	587	0	0	0	482	467	237
Turn Type		Free			Free					Split	Perm	
Protected Phases		4			8					1	1	
Permitted Phases		Free			Free						1	
Actuated Green, G (s)		16.0	41.5		16.0	41.5				16.5	16.5	16.5
Effective Green, g (s)		16.0	41.5		16.0	41.5				16.5	16.5	16.5
Actuated g/C Ratio		0.39	1.00		0.39	1.00				0.40	0.40	0.40
Clearance Time (s)		4.5			4.5					4.5	4.5	4.5
Vehicle Extension (s)		3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1392	1615		1392	1615				682	651	610
v/s Ratio Prot		0.25			0.32					0.28	0.29	
v/s Ratio Perm			0.29			0.36						0.15
v/c Ratio		0.65	0.29		0.83	0.36				0.71	0.72	0.39
Uniform Delay, d1		10.4	0.0		11.5	0.0				10.5	10.5	8.9
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		1.0	0.5		4.2	0.6				3.3	3.8	0.4
Delay (s)		11.5	0.5		15.7	0.6				13.8	14.3	9.3
Level of Service		B A			B A					B	B	A
Approach Delay (s)		7.7			10.7			0.0		13.1		
Approach LOS		A			B			A		B		

Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	41.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

18: Del Mar Heights Rd & I-5 NB On-Ramp

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑↑		↑↑↑	↑				↑	↑↑	↑
Volume (vph)	188	1586	0	0	1070	588	624	0	602	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5	4.5	4.5	4.5	4.5			4.5
Lane Util. Factor		0.97	0.95		0.91	1.00	0.95	0.91	0.95			0.95
Frt		1.00	1.00		1.00	0.85	1.00	0.92	0.85			0.85
Flt Protected		0.95	1.00		1.00	1.00	0.95	0.98	1.00			1.00
Satd. Flow (prot)		3502	3610		5187	1615	1715	1558	1534			1534
Flt Permitted		0.95	1.00		1.00	1.00	0.95	0.98	1.00			1.00
Satd. Flow (perm)		3502	3610		5187	1615	1715	1558	1534			1534
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)	198	1669	0	0	1126	619	657	0	634	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	410	0	8	8	0	0	0
Lane Group Flow (vph)	198	1669	0	0	1126	209	447	424	404	0	0	0
Turn Type		Prot			Perm					Split	Perm	
Protected Phases		7			4					8	2 2	
Permitted Phases										8	2	
Actuated Green, G (s)		5.5	29.4				19.4	19.4	19.1	19.1	19.1	
Effective Green, g (s)		5.5	29.4				19.4	19.4	19.1	19.1	19.1	
Actuated g/C Ratio		0.10	0.51				0.34	0.34	0.33	0.33	0.33	
Clearance Time (s)		4.5	4.5				4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)		3.0	3.0				3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		335	1846				1750	545	570	518	510	
v/s Ratio Prot		0.06	0.46				0.22		0.26	0.27		
v/s Ratio Perm								0.13			0.26	
v/c Ratio		0.59	0.90				0.64	0.38	0.78	0.82	0.79	
Uniform Delay, d1		24.9	12.8				16.1	14.5	17.3	17.6	17.4	
Progression Factor		1.00	1.00				1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.8	6.7				0.8	0.5	7.0	9.7	8.2	
Delay (s)		27.7	19.5				16.9	14.9	24.3	27.4	25.6	
Level of Service		C B					B	B	C	C	C	
Approach Delay (s)		20.3					16.2		25.8		0.0	
Approach LOS		C					B		C		A	

Intersection Summary			
HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	57.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

19: Del Mar Heights Rd & High Bluff Dr

2/1/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	242	1797	220	20	1138	59	635	88	170	52	41	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.97	0.95	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99	1.00	0.90	1.00	1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1615	1805	5149	3502	3254	1805	1900	1615	1900	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1615	1805	5149	3502	3254	1805	1900	1615	1900	1615
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)	255	1892	232	21	1198	62	668	93	179	55	43	169
RTOR Reduction (vph)	0	0	70	0	5	0	0	137	0	0	0	5
Lane Group Flow (vph)	255	1892	162	21	1255	0	668	135	0	55	43	164
Turn Type	Prot		pm+ov	Prot		Prot		Prot		pm+ov		
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4									6
Actuated Green, G (s)	13.8	38.4	56.3	1.5	26.1		17.9	18.7		3.8	4.6	18.4
Effective Green, g (s)	13.8	38.4	56.3	1.5	26.1		17.9	18.7		3.8	4.6	18.4
Actuated g/C Ratio	0.17	0.48	0.70	0.02	0.32		0.22	0.23		0.05	0.06	0.23
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	310	2477	1221	34	1672		780	757		85	109	460
v/s Ratio Prot	c0.14	c0.36	0.03	0.01	0.24		c0.19	0.04		0.03	0.02	c0.06
v/s Ratio Perm			0.07									0.04
v/c Ratio	0.82	0.76	0.13	0.62	0.75		0.86	0.18		0.65	0.39	0.36
Uniform Delay, d1	32.1	17.3	4.0	39.2	24.2		30.0	24.7		37.6	36.6	26.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	16.0	1.4	0.0	29.0	1.9		9.2	0.1		15.7	2.3	0.5
Delay (s)	48.1	18.7	4.0	68.1	26.2		39.2	24.8		53.3	38.9	26.5
Level of Service	D	B	A	E	C		D	C		D	D	C
Approach Delay (s)		20.4			26.9			35.0			34.0	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM Average Control Delay	25.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	80.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

20: Del Mar Heights Rd & El Camino Real

2/1/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	486	1458	348	115	727	172	339	422	245	182	173	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.91	0.97	0.91	0.97	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Frt	1.00	0.97	1.00	0.97	1.00	0.97	1.00	1.00	0.85	1.00	0.92	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5037	3502	5038	3502	5038	3502	5187	1615	3502	4778	4778
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5037	3502	5038	3502	5038	3502	5187	1615	3502	4778	4778
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)	512	1535	366	121	765	181	357	444	258	192	182	202
RTOR Reduction (vph)	0	47	0	0	47	0	0	0	23	0	174	0
Lane Group Flow (vph)	512	1854	0	121	899	0	357	444	235	192	210	0
Turn Type	Prot			Prot		Prot		pm+ov	Prot			
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	14.0	30.5		4.5	21.0		9.5	11.5	16.0	8.2	10.2	
Effective Green, g (s)	14.0	30.5		4.5	21.0		9.5	11.5	16.0	8.2	10.2	
Actuated g/C Ratio	0.19	0.42		0.06	0.29		0.13	0.16	0.22	0.11	0.14	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	674	2113		217	1455		458	821	455	395	670	
v/s Ratio Prot	c0.15	c0.37		0.03	0.18		c0.10	0.09	c0.03	0.05	0.04	
v/s Ratio Perm									0.11			
v/c Ratio	0.76	0.88		0.56	0.62		0.78	0.54	0.52	0.49	0.31	
Uniform Delay, d1	27.8	19.4		33.1	22.4		30.6	28.2	25.0	30.3	28.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.9	4.5		3.1	0.8		8.2	0.7	1.0	0.9	0.3	
Delay (s)	32.7	23.9		36.2	23.2		38.8	28.9	25.9	31.2	28.4	
Level of Service	C	C		D	C		D	C	C	C	C	
Approach Delay (s)		25.7			24.6			31.5			29.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	72.7	Sum of lost time (s)	13.5
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

21: 15th St & Ocean Ave

1/31/2012



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑	↑	↑	↑
Sign Control	Stop		Stop			Stop
Volume (vph)	83	170	28	39	104	22
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	87	179	29	41	109	23

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	266	71	133
Volume Left (vph)	87	0	109
Volume Right (vph)	179	41	0
Hadj (s)	-0.34	-0.35	0.17
Departure Headway (s)	4.0	4.3	4.7
Degree Utilization, x	0.30	0.08	0.17
Capacity (veh/h)	855	778	713
Control Delay (s)	8.8	7.7	8.7
Approach Delay (s)	8.8	7.7	8.7
Approach LOS	A	A	A

Intersection Summary			
Delay		8.6	
HCM Level of Service		A	
Intersection Capacity Utilization	35.3%		ICU Level of Service A
Analysis Period (min)		15	

APPENDIX F

**PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS
EXISTING CONDITIONS WITH PROJECT FOUR LANE COLLECTOR WITH
SIGNALS**

HCM Signalized Intersection Capacity Analysis

9: 15th St & Camino Del Mar

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Volume (vph)	27	13	81	37	11	65	86	331	54	96	720	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	0.95
Frpb, ped/bikes	1.00	0.76	1.00	1.00	0.81	1.00	0.98	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	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	1.00	0.85	1.00	1.00	0.85	1.00	0.98	1.00	1.00	0.99	1.00	0.99
Flt Protected	0.97	1.00	0.95	0.97	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1839	1229	1715	1758	1301	1805	3475	1805	3565	1805	3565	3565
Flt Permitted	0.97	1.00	0.95	0.97	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1839	1229	1715	1758	1301	1805	3475	1805	3565	1805	3565	3565
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)	28	14	85	39	12	68	91	348	57	101	758	46
RTOR Reduction (vph)	0	0	81	0	0	65	0	24	0	0	8	0
Lane Group Flow (vph)	0	42	4	25	26	3	91	381	0	101	796	0
Confl. Peds. (#/hr)			36			29			78			37
Turn Type	Split	Perm	Split	Perm	Prot	Prot	Prot	Prot	Prot	Prot	Prot	Prot
Protected Phases	7	7		3	3		5	2		1	6	
Permitted Phases			7			3						
Actuated Green, G (s)		1.9	1.9	1.9	1.9	1.9	1.9	16.5		2.4	17.0	
Effective Green, g (s)		1.9	1.9	1.9	1.9	1.9	1.9	16.5		2.4	17.0	
Actuated g/C Ratio		0.05	0.05	0.05	0.05	0.05	0.05	0.41		0.06	0.42	
Clearance Time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		86	57	80	82	61	84	1409		106	1489	
v/s Ratio Prot		c0.02		0.01	c0.01		0.05	0.11		c0.06	c0.22	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.49	0.07	0.31	0.32	0.05	1.08	0.27		0.95	0.53	
Uniform Delay, d1		18.9	18.6	18.8	18.8	18.5	19.4	8.1		19.1	8.9	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.3	0.5	2.2	2.2	0.4	122.7	0.1		71.9	0.4	
Delay (s)		23.2	19.1	21.0	21.0	18.9	142.1	8.2		91.0	9.3	
Level of Service		C	B	C	C	B	F	A		F	A	
Approach Delay (s)		20.5			19.8			32.7			18.4	
Approach LOS		C			B			C			B	
Intersection Summary												
HCM Average Control Delay		23.0										C
HCM Volume to Capacity ratio		0.47										
Actuated Cycle Length (s)		40.7							13.5			
Intersection Capacity Utilization		54.0%										A
Analysis Period (min)		15										

HCM Signalized Intersection Capacity Analysis

10: 13th St & Camino Del Mar

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Volume (vph)	23	0	46	49	2	18	100	432	16	42	815	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Frpb, ped/bikes	0.97	0.97	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	0.99	0.99	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.91	0.91	0.96	1.00	0.99	1.00	0.99	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.98	0.97	0.97	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1630	1708	1805	3588	1805	3588	1805	3588	1805	3593	3593	3593
Flt Permitted	0.86	0.74	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1426	1315	1805	3588	1805	3588	1805	3588	1805	3593	3593	3593
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)	24	0	48	52	2	19	105	455	17	44	858	23
RTOR Reduction (vph)	0	42	0	0	17	0	0	4	0	0	3	0
Lane Group Flow (vph)	0	30	0	0	56	0	105	468	0	44	878	0
Confl. Peds. (#/hr)		41		46	46		41		2			11
Turn Type	Perm	Perm	Perm	Prot	Prot	Prot	Prot	Prot	Prot	Prot	Prot	Prot
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		5.1			5.1		3.3	22.7		1.3	20.7	
Effective Green, g (s)		5.1			5.1		3.3	22.7		1.3	20.7	
Actuated g/C Ratio		0.12			0.12		0.08	0.53		0.03	0.49	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		171			157		140	1912		55	1746	
v/s Ratio Prot							c0.06	0.13		0.02	c0.24	
v/s Ratio Perm		0.02			c0.04							
v/c Ratio		0.17			0.36		0.75	0.24		0.80	0.50	
Uniform Delay, d1		16.9			17.2		19.2	5.3		20.5	7.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5			1.4		20.0	0.1		55.2	0.2	
Delay (s)		17.3			18.6		39.2	5.4		75.7	7.7	
Level of Service		B			B		D	A		E	A	
Approach Delay (s)		17.3			18.6			11.6			10.9	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM Average Control Delay		11.8										B
HCM Volume to Capacity ratio		0.51										
Actuated Cycle Length (s)		42.6							13.5			
Intersection Capacity Utilization		52.2%										A
Analysis Period (min)		15										

HCM Unsignalized Intersection Capacity Analysis

11: 12th St & Camino Del Mar

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↔			↔		↕	↕		↕	↕
Volume (veh/h)	0	0	34	0	0	18	0	562	31	0	908	21
Sign Control	Stop			Stop			Free			Free		
Grade	0%			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
Hourly flow rate (vph)	0	0	36	0	0	19	0	592	33	0	956	22
Pedestrians	4			46			43			43		
Lane Width (ft)	12.0			12.0			12.0			12.0		
Walking Speed (ft/s)	4.0			4.0			4.0			4.0		
Percent Blockage	0			4			4			4		
Right turn flare (veh)												
Median type	None			None			None			None		
Median storage (veh)												
Upstream signal (ft)	373			433			433			433		
pX, platoon unblocked	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
vC, conflicting volume	1329	1595	539	1151	1573	339	982	624	624	624	624	624
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1069	1377	157	865	1352	339	669	624	624	624	624	624
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1	4.1	4.1	4.1	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	2.2	2.2	2.2	2.2
p0 queue free %	100	100	95	100	100	97	100	100	100	100	100	100
cM capacity (veh/h)	144	126	719	198	131	639	803	967	967	967	967	967
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2					
Volume Total	36	19	296	296	33	637	341					
Volume Left	0	0	0	0	0	0	0					
Volume Right	36	19	0	0	33	0	22					
cSH	719	639	1700	1700	1700	1700	1700					
Volume to Capacity	0.05	0.03	0.17	0.17	0.02	0.37	0.20					
Queue Length 95th (ft)	4	2	0	0	0	0	0					
Control Delay (s)	10.3	10.8	0.0	0.0	0.0	0.0	0.0					
Lane LOS	B	B										
Approach Delay (s)	10.3	10.8	0.0	0.0	0.0	0.0	0.0					
Approach LOS	B	B										
Intersection Summary												
Average Delay	0.3											
Intersection Capacity Utilization	44.2%			ICU Level of Service			A					
Analysis Period (min)	15											

HCM Signalized Intersection Capacity Analysis

12: 11th St & Camino Del Mar

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↕	↕		↕	↕	↕
Volume (vph)	39	2	33	52	3	19	66	506	32	45	847	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.5			4.5			4.5		
Lane Util. Factor	1.00			1.00			1.00			1.00		
Frpb, ped/bikes	0.98			0.98			1.00			1.00		
Flpb, ped/bikes	0.98			0.98			1.00			1.00		
Frt	0.94			0.97			1.00			1.00		
Fit Protected	0.97			0.97			0.95			1.00		
Satd. Flow (prot)	1674			1710			1805			3578		
Fit Permitted	0.79			0.74			0.95			1.00		
Satd. Flow (perm)	1364			1313			1805			3578		
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)	41	2	35	55	3	20	69	533	34	47	892	31
RTOR Reduction (vph)	0	31	0	0	18	0	7	0	0	0	0	15
Lane Group Flow (vph)	0	47	0	0	60	0	69	560	0	47	892	16
Confl. Peds. (#/hr)	43		46	46		43	4					4
Turn Type	Perm		Perm		Prot		Prot		Prot		Perm	
Protected Phases	4		8		5		2		1		6	
Permitted Phases	4		8		5		2		1		6	
Actuated Green, G (s)	5.2		5.2		2.1		22.6		1.3		21.8	
Effective Green, g (s)	5.2		5.2		2.1		22.6		1.3		21.8	
Actuated g/C Ratio	0.12		0.12		0.05		0.53		0.03		0.51	
Clearance Time (s)	4.5		4.5		4.5		4.5		4.5		4.5	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	166		160		89		1898		55		1847	
v/s Ratio Prot					c0.04		0.16		0.03		c0.25	
v/s Ratio Perm	0.03		c0.05								0.01	
v/c Ratio	0.28		0.38		0.78		0.30		0.85		0.48	
Uniform Delay, d1	17.0		17.2		20.0		5.6		20.6		6.7	
Progression Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Incremental Delay, d2	0.9		1.5		33.5		0.1		70.4		0.2	
Delay (s)	18.0		18.7		53.5		5.7		91.0		6.9	
Level of Service	B		B		D		A		F		A	
Approach Delay (s)	18.0		18.7		10.8		11.0		11.0		11.0	
Approach LOS	B		B		B		B		B		B	
Intersection Summary												
HCM Average Control Delay	11.6			HCM Level of Service			B					
HCM Volume to Capacity ratio	0.49											
Actuated Cycle Length (s)	42.6			Sum of lost time (s)			13.5					
Intersection Capacity Utilization	50.1%			ICU Level of Service			A					
Analysis Period (min)	15											

HCM Signalized Intersection Capacity Analysis

13: 9th St & Camino Del Mar

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↕	↕		↕	↕	
Volume (vph)	47	1	48	29	2	18	55	560	22	38	861	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5		4.5		4.5
Lane Util. Factor	1.00			1.00			1.00	0.95		1.00	0.95	
Frpb, ped/bikes	0.98			0.98			1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99			0.98			1.00	1.00		1.00	1.00	
Frt	0.93			0.95			1.00	0.99		1.00	0.99	
Fit Protected	0.98			0.97			0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1666			1697			1805	3590		1805	3586	
Fit Permitted	0.82			0.80			0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1398			1393			1805	3590		1805	3586	
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)	49	1	51	31	2	19	58	589	23	40	906	36
RTOR Reduction (vph)	0	45	0	0	17	0	0	4	0	0	4	0
Lane Group Flow (vph)	0	56	0	0	35	0	58	608	0	40	938	0
Confl. Peds. (#/hr)	43		46	46		43	4					4
Turn Type	Perm		Perm			Prot		Prot		Prot		
Protected Phases	4		8			5		2		1		6
Permitted Phases	4		8									
Actuated Green, G (s)	4.5		4.5			2.2		18.7		2.0		18.5
Effective Green, g (s)	4.5		4.5			2.2		18.7		2.0		18.5
Actuated g/C Ratio	0.12		0.12			0.06		0.48		0.05		0.48
Clearance Time (s)	4.5		4.5			4.5		4.5		4.5		4.5
Vehicle Extension (s)	3.0		3.0			3.0		3.0		3.0		3.0
Lane Grp Cap (vph)	163		162			103		1735		93		1714
v/s Ratio Prot	c0.04		0.03			c0.03		0.17		0.02		c0.26
v/s Ratio Perm	c0.04		0.03									
v/c Ratio	0.34		0.22			0.56		0.35		0.43		0.55
Uniform Delay, d1	15.7		15.5			17.8		6.2		17.8		7.1
Progression Factor	1.00		1.00			1.00		1.00		1.00		1.00
Incremental Delay, d2	1.3		0.7			6.9		0.1		3.2		0.4
Delay (s)	17.0		16.2			24.7		6.3		21.0		7.5
Level of Service	B		B			C		A		C		A
Approach Delay (s)	17.0		16.2					7.9				8.0
Approach LOS	B		B					A				A

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	38.7	Sum of lost time (s)	13.5
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

9: 15th St & Camino Del Mar

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕	↕	↕		↕	↕	
Volume (vph)	78	19	103	58	25	87	147	745	63	71	443	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.79	1.00	1.00	0.68	1.00	0.99	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.85	1.00	0.99	0.99		1.00	0.97	
Fit Protected	0.96	1.00	0.95	0.98	1.00	0.95	1.00	0.95		0.95	1.00	
Satd. Flow (prot)	1827	1273	1715	1769	1100	1805	3544	3467		1805	3467	
Fit Permitted	0.96	1.00	0.95	0.98	1.00	0.95	1.00	0.95		0.95	1.00	
Satd. Flow (perm)	1827	1273	1715	1769	1100	1805	3544	3467		1805	3467	
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)	82	20	108	61	26	92	155	784	66	75	466	94
RTOR Reduction (vph)	0	0	100	0	0	86	0	12	0	0	33	0
Lane Group Flow (vph)	0	102	8	43	44	6	155	838	0	75	527	0
Confl. Peds. (#/hr)			52			74			50			50
Turn Type	Split	Perm	Split	Perm	Prot	Prot	Prot	Prot		Prot	Prot	
Protected Phases	7	7		3	3	5	2			1	6	
Permitted Phases			7			3						
Actuated Green, G (s)	3.4	3.4	2.7	2.7	2.7	4.8	18.1			2.2	15.5	
Effective Green, g (s)	3.4	3.4	2.7	2.7	2.7	4.8	18.1			2.2	15.5	
Actuated g/C Ratio	0.08	0.08	0.06	0.06	0.06	0.11	0.41			0.05	0.35	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	
Lane Grp Cap (vph)	140	97	104	108	67	195	1445			89	1210	
v/s Ratio Prot	c0.06		c0.03	0.02		c0.09	c0.24			0.04	0.15	
v/s Ratio Perm		0.01			0.01							
v/c Ratio	0.73	0.09	0.41	0.41	0.08	0.79	0.58			0.84	0.44	
Uniform Delay, d1	20.0	19.1	20.1	20.1	19.7	19.3	10.2			20.9	11.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	
Incremental Delay, d2	17.2	0.4	2.7	2.5	0.5	19.6	0.6			48.0	0.3	
Delay (s)	37.2	19.4	22.7	22.6	20.2	39.0	10.8			69.0	11.3	
Level of Service	D	B	C	C	C	D	B			E	B	
Approach Delay (s)	28.1			21.4			15.1				18.2	
Approach LOS	C			C			B				B	

Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	44.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
10: 13th St & Camino Del Mar

Ex + Proj PM 4L
3/12/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	
Volume (vph)	27	2	92	72	5	27	149	908	32	50	512	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5		4.5		4.5		4.5	
Lane Util. Factor	1.00		1.00		1.00		0.95		1.00		0.95	
Frbp, ped/bikes	0.96		0.98		1.00		1.00		1.00		1.00	
Fipb, ped/bikes	0.99		0.98		1.00		1.00		1.00		1.00	
Frt	0.90		0.97		1.00		0.99		1.00		0.99	
Flt Protected	0.99		0.97		0.95		1.00		0.95		1.00	
Satd. Flow (prot)	1602		1704		1805		3591		1805		3561	
Flt Permitted	0.92		0.85		0.95		1.00		0.95		1.00	
Satd. Flow (perm)	1492		1490		1805		3591		1805		3561	
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)	28	2	97	76	5	28	157	956	34	53	539	43
RTOR Reduction (vph)	0	84	0	0	24	0	0	4	0	0	10	0
Lane Group Flow (vph)	0		43		0		85		0		157	
Confl. Peds. (#/hr)	60		53		53		60		12		12	
Turn Type	Perm		Perm		Prot		Prot		Prot		Prot	
Protected Phases	4		8		8		5		2		1	
Permitted Phases	4		8		8		5		2		1	
Actuated Green, G (s)	5.7		5.7		5.7		4.8		22.3		1.3	
Effective Green, g (s)	5.7		5.7		5.7		4.8		22.3		1.3	
Actuated g/C Ratio	0.13		0.13		0.11		0.52		0.03		0.44	
Clearance Time (s)	4.5		4.5		4.5		4.5		4.5		4.5	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	199		198		202		1871		55		1564	
v/s Ratio Prot	0.03		c0.06		c0.09		c0.27		0.03		0.16	
v/s Ratio Perm	0.22		0.43		0.78		0.53		0.96		0.37	
v/c Ratio	16.6		17.1		18.5		6.8		20.7		8.0	
Uniform Delay, d1	1.00		1.00		1.00		1.00		1.00		1.00	
Progression Factor	0.5		1.5		17.0		0.3		107.4		0.1	
Incremental Delay, d2	17.1		18.5		35.4		7.0		128.1		8.2	
Delay (s)	B		B		D		A		F		A	
Level of Service	17.1		18.5		10.9		18.2		18.2		18.2	
Approach Delay (s)	B		B		B		B		B		B	
Approach LOS	B		B		B		B		B		B	
Intersection Summary												
HCM Average Control Delay	14.0		HCM Level of Service		B		B		B		B	
HCM Volume to Capacity ratio	0.57		Sum of lost time (s)		13.5		13.5		13.5		13.5	
Actuated Cycle Length (s)	42.8		ICU Level of Service		A		A		A		A	
Intersection Capacity Utilization	54.4%		Analysis Period (min)		15		15		15		15	
Analysis Period (min)	15		15		15		15		15		15	

5:00 pm Baseline

Synchro 7 - Report
Page 1

HCM Unsignalized Intersection Capacity Analysis
11: 12th St & Camino Del Mar

Ex + Proj PM 4L
3/10/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↔				↔	↔		↔	↔	
Volume (veh/h)	0	0	48	0	0	27	0	1025	38	0	721	19
Sign Control	Stop		Stop		Free		Free		Free		Free	
Grade	0%		0%		0%		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
Hourly flow rate (vph)	0	0	51	0	0	28	0	1079	40	0	759	20
Pedestrians	13		44		57		57		57		57	
Lane Width (ft)	12.0		12.0		12.0		12.0		12.0		12.0	
Walking Speed (ft/s)	4.0		4.0		4.0		4.0		4.0		4.0	
Percent Blockage	1		4		5		5		5		5	
Right turn flare (veh)	None		None		None		None		None		None	
Median type	None		None		None		None		None		None	
Median storage (veh)	373		433		433		433		433		433	
Upstream signal (ft)	0.82		0.82		0.82		0.82		0.82		0.82	
pX, platoon unblocked	0.82	0.82	0.98	0.82	0.82	0.80	0.98	0.80	0.80	0.80	0.80	0.80
vC, conflicting volume	1407	1901	446	1553	1871	596	792	1119	1119	1119	1119	1119
vC1, stage 1 conf vol	917		1522		384		1096		1486		13	
vC2, stage 2 conf vol	7.5		6.5		6.9		7.5		6.5		6.9	
vCu, unblocked vol	7.5		6.5		6.9		7.5		6.5		6.9	
IC, single (s)	7.5		6.5		6.9		7.5		6.5		6.9	
IC, 2 stage (s)	3.5		4.0		3.3		3.5		4.0		3.3	
tF (s)	100		100		91		100		100		97	
p0 queue free %	100		100		91		100		100		97	
cM capacity (veh/h)	169		96		577		121		102		820	
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2					
Volume Total	51	28	539	539	40	506	273					
Volume Left	0	0	0	0	0	0	0					
Volume Right	51	28	0	0	40	0	20					
cSH	577	820	1700	1700	1700	1700	1700					
Volume to Capacity	0.09	0.03	0.32	0.32	0.02	0.30	0.16					
Queue Length 95th (ft)	7	3	0	0	0	0	0					
Control Delay (s)	11.8	9.5	0.0	0.0	0.0	0.0	0.0					
Lane LOS	B	A										
Approach Delay (s)	11.8	9.5	0.0	0.0	0.0	0.0	0.0					
Approach LOS	B	A										
Intersection Summary												
Average Delay	0.4		ICU Level of Service		A		A		A		A	
Intersection Capacity Utilization	47.2%		Analysis Period (min)		15		15		15		15	
Analysis Period (min)	15		15		15		15		15		15	

5:00 pm Baseline

Synchro 7 - Report
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HCM Signalized Intersection Capacity Analysis

12: 11th St & Camino Del Mar

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↕		↔	↕	↔
Volume (vph)	38	2	45	68	3	26	83	987	39	78	674	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5		4.5		4.5		4.5	
Lane Util. Factor	1.00		1.00		1.00		0.95		1.00		0.95	
Frbp, ped/bikes	0.98		0.99		1.00		1.00		1.00		0.96	
Fipb, ped/bikes	0.98		0.98		1.00		1.00		1.00		1.00	
Frt	0.93		0.96		1.00		0.99		1.00		0.85	
Fit Protected	0.98		0.97		0.95		1.00		0.95		1.00	
Satd. Flow (prot)	1655		1706		1805		3589		1805		3610	
Fit Permitted	0.85		0.73		0.95		1.00		0.95		1.00	
Satd. Flow (perm)	1442		1297		1805		3589		1805		3610	
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)	40	2	47	72	3	27	87	1039	41	82	709	24
RTOR Reduction (vph)	0	41	0	0	24	0	0	4	0	0	0	12
Lane Group Flow (vph)	0		48		0		78		0		87	
Confl. Peds. (#/hr)	57		44		44		57		13		13	
Turn Type	Perm		Perm		Prot		Prot		Perm		Perm	
Protected Phases	4		8		8		5		2		1	
Permitted Phases	4		8		8		5		2		1	
Actuated Green, G (s)	5.4		5.4		2.1		20.9		2.1		20.9	
Effective Green, g (s)	5.4		5.4		2.1		20.9		2.1		20.9	
Actuated g/C Ratio	0.13		0.13		0.05		0.50		0.05		0.50	
Clearance Time (s)	4.5		4.5		4.5		4.5		4.5		4.5	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	186		167		90		1790		90		1801	
v/s Ratio Prot	0.03		c0.06		c0.05		c0.30		0.05		0.20	
v/s Ratio Perm	0.26		0.47		0.97		0.60		0.91		0.39	
v/c Ratio	16.4		16.9		19.9		7.5		19.8		6.5	
Uniform Delay, d1	1.00		1.00		1.00		1.00		1.00		1.00	
Progression Factor	0.7		2.1		83.1		0.6		66.1		0.1	
Incremental Delay, d2	17.2		19.0		102.9		8.1		85.9		6.7	
Delay (s)	B		B		F		A		F		A	
Level of Service	17.2		19.0		15.2		14.6		17.1		17.7	
Approach Delay (s)	B		B		B		B		B		B	
Approach LOS	B		B		B		B		B		B	

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	41.9	Sum of lost time (s)	13.5
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

13: 9th St & Camino Del Mar

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↕		↔	↕	↔
Volume (vph)	27	0	42	37	4	23	45	1066	41	45	762	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5		4.5		4.5		4.5	
Lane Util. Factor	1.00		1.00		1.00		0.95		1.00		0.95	
Frbp, ped/bikes	0.97		0.98		1.00		1.00		1.00		1.00	
Fipb, ped/bikes	0.98		0.98		1.00		1.00		1.00		1.00	
Frt	0.92		0.95		1.00		0.99		1.00		1.00	
Fit Protected	0.98		0.97		0.95		1.00		0.95		1.00	
Satd. Flow (prot)	1638		1692		1805		3590		1805		3598	
Fit Permitted	0.84		0.78		0.95		1.00		0.95		1.00	
Satd. Flow (perm)	1408		1358		1805		3590		1805		3598	
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)	28	0	44	39	4	24	47	1122	43	47	802	14
RTOR Reduction (vph)	0	39	0	0	21	0	0	3	0	0	1	0
Lane Group Flow (vph)	0		33		0		46		0		47	
Confl. Peds. (#/hr)	57		44		44		57		13		13	
Turn Type	Perm		Perm		Prot		Prot		Perm		Perm	
Protected Phases	4		8		8		5		2		1	
Permitted Phases	4		8		8		5		2		1	
Actuated Green, G (s)	4.5		4.5		2.2		20.4		2.2		20.4	
Effective Green, g (s)	4.5		4.5		2.2		20.4		2.2		20.4	
Actuated g/C Ratio	0.11		0.11		0.05		0.50		0.05		0.50	
Clearance Time (s)	4.5		4.5		4.5		4.5		4.5		4.5	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	156		151		98		1804		98		1808	
v/s Ratio Prot	0.02		c0.03		c0.03		c0.32		0.03		0.23	
v/s Ratio Perm	0.21		0.30		0.48		0.64		0.48		0.45	
v/c Ratio	16.4		16.6		18.6		7.4		18.6		6.5	
Uniform Delay, d1	1.00		1.00		1.00		1.00		1.00		1.00	
Progression Factor	0.7		1.1		3.7		0.8		3.7		0.2	
Incremental Delay, d2	17.1		17.7		22.3		8.2		22.3		6.7	
Delay (s)	B		B		C		A		C		A	
Level of Service	17.1		17.7		8.8		7.5		17.1		17.7	
Approach Delay (s)	B		B		B		B		B		B	
Approach LOS	B		B		B		B		B		B	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	40.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX G

**PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS
EXISTING CONDITIONS WITH PROJECT TWO LANE COLLECTOR WITH
ROUNDBOUT**

Unlicensed Trial Version
MOVEMENT SUMMARY

Site: Ex AM With Project

Camino Del Mar & 15th St
Ex AM With Project
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: S Camino Del Mar											
3L	L	91	1.0	0.463	8.5	LOS A	2.6	65.4	0.39	0.81	19.5
8T	T	348	2.0	0.463	8.5	LOS A	2.6	65.4	0.39	0.43	21.2
8R	R	57	1.0	0.463	8.5	LOS A	2.6	65.4	0.39	0.44	20.3
Approach		496	1.7	0.463	8.5	LOS A	2.6	65.4	0.39	0.50	20.8
East: E 15th St											
1L	L	39	1.0	0.170	7.0	LOS A	0.6	15.4	0.50	0.82	17.2
6T	T	12	1.0	0.170	7.0	LOS A	0.6	15.4	0.50	0.47	17.6
6R	R	68	1.0	0.170	7.0	LOS A	0.6	15.4	0.50	0.62	18.3
Approach		119	1.0	0.170	7.0	LOS A	0.6	15.4	0.50	0.67	17.8
North: N Camino Del Mar											
7L	L	101	1.0	0.799	18.4	LOS C	10.1	257.2	0.76	0.78	20.2
4T	T	758	2.0	0.799	18.4	LOS C	10.1	257.2	0.76	0.63	21.0
4R	R	46	1.0	0.799	18.4	LOS C	10.1	257.2	0.76	0.67	20.9
Approach		905	1.8	0.799	18.4	LOS C	10.1	257.2	0.76	0.65	20.9
West: W 15th St											
5L	L	28	1.0	0.277	12.2	LOS B	1.0	24.9	0.67	0.93	16.6
2T	T	14	1.0	0.277	12.2	LOS B	1.0	24.9	0.67	0.68	16.3
2R	R	85	1.0	0.277	12.2	LOS B	1.0	24.9	0.67	0.76	16.4
Approach		127	1.0	0.277	12.2	LOS B	1.0	24.9	0.67	0.79	16.5
All Vehicles		1647	1.7	0.799	14.1	LOS B	10.1	257.2	0.62	0.62	20.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Model used. Geometric Delay not included.



Unlicensed Trial Version
MOVEMENT SUMMARY

Site: Ex AM With Project

Camino Del Mar & 13th St
Ex AM With Project
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: S Camino Del Mar											
3L	L	105	1.0	0.469	7.8	LOS A	2.8	70.8	0.26	0.81	19.6
8T	T	456	2.0	0.469	7.8	LOS A	2.8	70.8	0.26	0.26	20.9
8R	R	17	1.0	0.469	7.8	LOS A	2.8	70.8	0.26	0.36	20.6
Approach		578	1.8	0.469	7.8	LOS A	2.8	70.8	0.26	0.36	20.7
East: E 13th St											
1L	L	52	1.0	0.115	7.0	LOS A	0.4	10.0	0.53	0.80	17.1
6T	T	2	1.0	0.115	7.0	LOS A	0.4	10.0	0.53	0.51	17.5
6R	R	19	1.0	0.115	7.0	LOS A	0.4	10.0	0.53	0.61	17.6
Approach		73	1.0	0.115	7.0	LOS A	0.4	10.0	0.53	0.74	17.3
North: N Camino Del Mar											
7L	L	44	1.0	0.838	21.6	LOS C	12.7	322.7	0.87	0.84	16.4
4T	T	858	2.0	0.838	21.6	LOS C	12.7	322.7	0.87	0.73	16.9
4R	R	23	1.0	0.838	21.6	LOS C	12.7	322.7	0.87	0.75	16.7
Approach		925	1.9	0.838	21.6	LOS C	12.7	322.7	0.87	0.74	16.9
West: W 13th St											
5L	L	24	1.0	0.169	10.8	LOS B	0.6	14.1	0.66	0.89	16.4
2T	T	1	1.0	0.169	10.8	LOS B	0.6	14.1	0.66	0.66	16.6
2R	R	48	1.0	0.169	10.8	LOS B	0.6	14.1	0.66	0.73	16.7
Approach		74	1.0	0.169	10.8	LOS B	0.6	14.1	0.66	0.78	16.6
All Vehicles		1649	1.8	0.838	15.6	LOS C	12.7	322.7	0.63	0.61	18.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Model used. Geometric Delay not included.



HCM Unsignalized Intersection Capacity Analysis

11: 12th St & Camino Del Mar

1/30/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑		↑	↑		↑	↑
Volume (veh/h)	0	0	34	0	0	18	0	562	31	0	908	21
Sign Control	Stop			Stop			Free			Free		
Grade	0%			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
Hourly flow rate (vph)	0	0	36	0	0	19	0	592	33	0	956	22
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	1577	1591	967	1594	1569	592	978				624	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1577	1591	967	1594	1569	592	978				624	
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 %	100	100	88	100	100	96	100				100	
cM capacity (veh/h)	86	108	311	77	112	510	714				967	

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	36	19	592	33	978
Volume Left	0	0	0	0	0
Volume Right	36	19	0	33	22
cSH	311	510	1700	1700	1700
Volume to Capacity	0.12	0.04	0.35	0.02	0.58
Queue Length 95th (ft)	10	3	0	0	0
Control Delay (s)	18.1	12.3	0.0	0.0	0.0
Lane LOS	C	B			
Approach Delay (s)	18.1	12.3	0.0	0.0	
Approach LOS	C	B			

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	59.1%	ICU Level of Service B	
Analysis Period (min)	15		

Unlicensed Trial Version
MOVEMENT SUMMARY

Site: Ex AM With Project

Camino Del Mar & 11th St
Ex AM With Project
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: S Camino Del Mar											
3L	L	69	1.0	0.534	9.1	LOS A	3.5	88.4	0.34	0.83	19.3
8T	T	533	2.0	0.534	9.1	LOS A	3.5	88.4	0.34	0.30	20.5
8R	R	34	1.0	0.534	9.1	LOS A	3.5	88.4	0.34	0.40	20.2
Approach		636	1.8	0.534	9.1	LOS A	3.5	88.4	0.34	0.37	20.3
East: E 11th St											
1L	L	55	1.0	0.131	7.6	LOS A	0.4	11.3	0.55	0.83	17.0
6T	T	3	1.0	0.131	7.6	LOS A	0.4	11.3	0.55	0.55	17.4
6R	R	20	1.0	0.131	7.6	LOS A	0.4	11.3	0.55	0.64	17.5
Approach		78	1.0	0.131	7.6	LOS A	0.4	11.3	0.55	0.77	17.1
North: N Camino Del Mar											
7L	L	47	1.0	0.834	20.5	LOS C	12.1	307.3	0.82	0.75	16.7
4T	T	892	2.0	0.834	20.5	LOS C	12.1	307.3	0.82	0.60	17.2
4R	R	31	1.0	0.834	20.5	LOS C	12.1	307.3	0.82	0.63	17.0
Approach		969	1.9	0.834	20.5	LOS C	12.1	307.3	0.82	0.61	17.1
West: W 11th St											
5L	L	41	1.0	0.189	11.5	LOS B	0.6	15.7	0.68	0.89	16.2
2T	T	2	1.0	0.189	11.5	LOS B	0.6	15.7	0.68	0.68	16.4
2R	R	36	1.0	0.189	11.5	LOS B	0.6	15.7	0.68	0.75	16.5
Approach		79	1.0	0.189	11.5	LOS B	0.6	15.7	0.68	0.82	16.3
All Vehicles		1762	1.8	0.834	15.4	LOS C	12.1	307.3	0.63	0.54	18.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
 Roundabout LOS Method: Same as Sign Control.
 Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
 LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
 Roundabout Capacity Model: US HCM 2010.
 HCM Delay Model used. Geometric Delay not included.



Unlicensed Trial Version
MOVEMENT SUMMARY

Site: Ex AM With Project

Camino Del Mar & 9th St
Ex AM With Project
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: S Camino Del Mar											
3L	L	58	1.0	0.560	9.6	LOS A	3.8	97.5	0.36	0.84	21.3
8T	T	589	2.0	0.560	9.6	LOS A	3.8	97.5	0.36	0.37	22.8
8R	R	23	1.0	0.560	9.6	LOS A	3.8	97.5	0.36	0.49	22.5
Approach		671	1.9	0.560	9.6	LOS A	3.8	97.5	0.36	0.42	22.7
East: E 9th St											
1L	L	31	1.0	0.092	7.5	LOS A	0.3	7.7	0.55	0.85	17.3
6T	T	2	1.0	0.092	7.5	LOS A	0.3	7.7	0.55	0.55	17.4
6R	R	19	1.0	0.092	7.5	LOS A	0.3	7.7	0.55	0.65	17.5
Approach		52	1.0	0.092	7.5	LOS A	0.3	7.7	0.55	0.76	17.4
North: N Camino Del Mar											
7L	L	40	1.0	0.793	17.0	LOS C	9.8	249.2	0.63	0.73	17.4
4T	T	906	2.0	0.793	17.0	LOS C	9.8	249.2	0.63	0.45	18.3
4R	R	36	1.0	0.793	17.0	LOS C	9.8	249.2	0.63	0.48	17.8
Approach		982	1.9	0.793	17.0	LOS C	9.8	249.2	0.63	0.46	18.3
West: W 9th St											
5L	L	49	1.0	0.238	12.3	LOS B	0.8	20.3	0.68	0.89	16.1
2T	T	1	1.0	0.238	12.3	LOS B	0.8	20.3	0.68	0.68	16.2
2R	R	51	1.0	0.238	12.3	LOS B	0.8	20.3	0.68	0.77	16.6
Approach		101	1.0	0.238	12.3	LOS B	0.8	20.3	0.68	0.83	16.3
All Vehicles		1805	1.8	0.793	13.7	LOS B	9.8	249.2	0.53	0.47	19.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Model used. Geometric Delay not included.



Unlicensed Trial Version
MOVEMENT SUMMARY

Site: Ex PM With Project

Camino Del Mar & 15th St
Ex PM With Project
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: S Camino Del Mar											
3L	L	155	1.0	0.929	32.5	LOS D	22.4	568.8	1.00	1.01	14.4
8T	T	784	2.0	0.929	32.5	LOS D	22.4	568.8	1.00	1.01	15.2
8R	R	66	1.0	0.929	32.5	LOS D	22.4	568.8	1.00	1.01	14.4
Approach		1005	1.8	0.929	32.5	LOS D	22.4	568.8	1.00	1.01	15.0
East: E 15th St											
1L	L	61	1.0	0.440	17.8	LOS C	1.8	45.5	0.76	1.03	15.1
6T	T	26	1.0	0.440	17.8	LOS C	1.8	45.5	0.76	0.86	15.1
6R	R	19	1.0	0.440	17.8	LOS C	1.8	45.5	0.76	0.94	15.9
Approach		92	1.0	0.440	17.8	LOS C	1.8	45.5	0.76	0.96	15.5
North: N Camino Del Mar											
7L	L	75	1.0	0.670	14.5	LOS B	5.6	140.7	0.66	0.92	21.4
4T	T	466	2.0	0.670	14.5	LOS B	5.6	140.7	0.66	0.72	22.5
4R	R	94	1.0	0.670	14.5	LOS B	5.6	140.7	0.66	0.78	22.4
Approach		635	1.7	0.670	14.5	LOS B	5.6	140.7	0.66	0.75	22.4
West: W 15th St											
5L	L	82	1.0	0.343	10.6	LOS B	1.4	35.0	0.61	0.91	16.9
2T	T	20	1.0	0.343	10.6	LOS B	1.4	35.0	0.61	0.63	16.7
2R	R	108	1.0	0.343	10.6	LOS B	1.4	35.0	0.61	0.72	16.8
Approach		211	1.0	0.343	10.6	LOS B	1.4	35.0	0.61	0.79	16.8
All Vehicles		2029	1.6	0.929	23.3	LOS C	22.4	568.8	0.83	0.90	16.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Model used. Geometric Delay not included.



Unlicensed Trial Version
MOVEMENT SUMMARY

Site: Ex PM With Project

Camino Del Mar & 13th St
Ex PM With Project
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: S Camino Del Mar											
3L	L	157	1.0	0.902	25.8	LOS D	18.3	464.2	0.98	0.56	15.6
8T	T	956	2.0	0.902	25.8	LOS D	18.3	464.2	0.98	0.54	15.9
8R	R	33	1.0	0.902	25.8	LOS D	18.3	464.2	0.98	0.54	15.8
Approach		1145	1.8	0.902	25.8	LOS D	18.3	464.2	0.98	0.54	15.8
East: E 13th St											
1L	L	76	1.0	0.303	15.8	LOS C	1.1	26.8	0.75	0.95	15.3
6T	T	5	1.0	0.303	15.8	LOS C	1.1	26.8	0.75	0.80	15.4
6R	R	28	1.0	0.303	15.8	LOS C	1.1	26.8	0.75	0.85	15.6
Approach		109	1.0	0.303	15.8	LOS C	1.1	26.8	0.75	0.92	15.4
North: N Camino Del Mar											
7L	L	53	1.0	0.665	14.2	LOS B	5.5	138.6	0.66	0.94	18.1
4T	T	539	2.0	0.665	14.2	LOS B	5.5	138.6	0.66	0.66	18.8
4R	R	43	1.0	0.665	14.2	LOS B	5.5	138.6	0.66	0.71	18.6
Approach		635	1.8	0.665	14.2	LOS B	5.5	138.6	0.66	0.69	18.7
West: W 13th St											
5L	L	28	1.0	0.220	9.1	LOS A	0.8	19.9	0.59	0.88	16.8
2T	T	2	0.0	0.220	9.1	LOS A	0.8	19.9	0.59	0.59	17.1
2R	R	97	1.0	0.220	9.1	LOS A	0.8	19.9	0.59	0.68	17.2
Approach		127	1.0	0.220	9.1	LOS A	0.8	19.9	0.59	0.72	17.1
All Vehicles		2017	1.7	0.902	20.6	LOS C	18.3	464.2	0.84	0.62	16.7

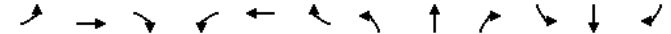
Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Model used. Geometric Delay not included.

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Project: C:\Documents and Settings\rpelajo\Desktop\5.1\13th St HCM 2010.sip
UNLICENSED TRIAL VERSION



HCM Unsignalized Intersection Capacity Analysis
11: 12th St & Camino Del Mar

Ex PM + Proj 2C
3/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑		↑	↑		↓	↓
Volume (veh/h)	0	0	48	0	0	27	0	1025	38	0	721	19
Sign Control	Stop			Stop			Free			Free		
Grade	0%			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
Hourly flow rate (vph)	0	0	51	0	0	28	0	1079	40	0	759	20
Pedestrians	13			44			57			57		
Lane Width (ft)	12.0			12.0			12.0			12.0		
Walking Speed (ft/s)	4.0			4.0			4.0			4.0		
Percent Blockage	1			4			5			5		
Right turn flare (veh)												
Median type	None			None			None			None		
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1946	1901	826	1942	1871	1136	792			1119		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1946	1901	826	1942	1871	1136	792			1119		
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 %	100	100	86	100	100	88	100			100		
cM capacity (veh/h)	41	69	357	41	72	236	829			632		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	51	28	1079	40	779
Volume Left	0	0	0	0	0
Volume Right	51	28	0	40	20
cSH	357	236	1700	1700	1700
Volume to Capacity	0.14	0.12	0.63	0.02	0.46
Queue Length 95th (ft)	12	10	0	0	0
Control Delay (s)	16.7	22.3	0.0	0.0	0.0
Lane LOS	C	C			
Approach Delay (s)	16.7	22.3	0.0	0.0	
Approach LOS	C	C			

Intersection Summary	
Average Delay	0.7
Intersection Capacity Utilization	72.9% ICU Level of Service C
Analysis Period (min)	15

Unlicensed Trial Version
MOVEMENT SUMMARY

Site: Ex PM With Project

Camino Del Mar & 11th St
Ex PM With Project
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: S Camino Del Mar											
3L	L	87	1.0	0.983	40.9	LOS E	39.3	998.2	1.00	0.93	13.1
8T	T	1039	2.0	0.983	40.9	LOS E	39.3	998.2	1.00	0.93	13.3
8R	R	41	1.0	0.983	40.9	LOS E	39.3	998.2	1.00	0.93	13.1
Approach		1167	1.9	0.983	40.9	LOS E	39.3	998.2	1.00	0.93	13.3
East: E 11th St											
1L	L	72	1.0	0.290	15.8	LOS C	1.0	25.2	0.76	0.95	15.3
6T	T	3	1.0	0.290	15.8	LOS C	1.0	25.2	0.76	0.80	15.4
6R	R	27	1.0	0.290	15.8	LOS C	1.0	25.2	0.76	0.85	15.6
Approach		102	1.0	0.290	15.8	LOS C	1.0	25.2	0.76	0.91	15.4
North: N Camino Del Mar											
7L	L	82	1.0	0.753	16.4	LOS C	8.0	204.0	0.69	0.84	17.5
4T	T	709	2.0	0.753	16.4	LOS C	8.0	204.0	0.69	0.59	18.2
4R	R	24	1.0	0.753	16.4	LOS C	8.0	204.0	0.69	0.63	18.0
Approach		816	1.9	0.753	16.4	LOS C	8.0	204.0	0.69	0.62	18.1
West: W 11th St											
5L	L	40	1.0	0.188	10.3	LOS B	0.6	16.0	0.63	0.87	16.5
2T	T	2	1.0	0.188	10.3	LOS B	0.6	16.0	0.63	0.63	16.7
2R	R	47	1.0	0.188	10.3	LOS B	0.6	16.0	0.63	0.71	16.8
Approach		89	1.0	0.188	10.3	LOS B	0.6	16.0	0.63	0.78	16.7
All Vehicles		2175	1.8	0.983	29.3	LOS D	39.3	998.2	0.86	0.80	15.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
 Roundabout LOS Method: Same as Sign Control.
 Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
 LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
 Roundabout Capacity Model: US HCM 2010.
 HCM Delay Model used. Geometric Delay not included.



Unlicensed Trial Version
MOVEMENT SUMMARY

Site: Ex PM With Project

Camino Del Mar & 9th St
Ex PM With Project
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: S Camino Del Mar											
3L	L	47	1.0	0.938	30.6	LOS D	25.2	638.5	1.00	0.53	16.0
8T	T	1122	2.0	0.938	30.6	LOS D	25.2	638.5	1.00	0.53	16.3
8R	R	43	1.0	0.938	30.6	LOS D	25.2	638.5	1.00	0.53	16.2
Approach		1213	1.9	0.938	30.6	LOS D	25.2	638.5	1.00	0.53	16.3
East: E 9th St											
1L	L	39	1.0	0.198	14.1	LOS B	0.6	15.9	0.74	0.92	15.9
6T	T	4	1.0	0.198	14.1	LOS B	0.6	15.9	0.74	0.74	15.8
6R	R	24	1.0	0.198	14.1	LOS B	0.6	15.9	0.74	0.80	15.9
Approach		67	1.0	0.198	14.1	LOS B	0.6	15.9	0.74	0.86	15.9
North: N Camino Del Mar											
7L	L	47	1.0	0.707	13.2	LOS B	6.7	169.9	0.49	0.79	18.2
4T	T	802	2.0	0.707	13.2	LOS B	6.7	169.9	0.49	0.40	19.4
4R	R	14	1.0	0.707	13.2	LOS B	6.7	169.9	0.49	0.44	18.9
Approach		863	1.9	0.707	13.2	LOS B	6.7	169.9	0.49	0.42	19.3
West: W 9th St											
5L	L	28	1.0	0.159	10.0	LOS A	0.5	13.3	0.63	0.88	16.5
2T	T	1	1.0	0.159	10.0	LOS A	0.5	13.3	0.63	0.63	16.8
2R	R	44	1.0	0.159	10.0	LOS A	0.5	13.3	0.63	0.73	17.2
Approach		74	1.0	0.159	10.0	LOS A	0.5	13.3	0.63	0.78	16.9
All Vehicles		2217	1.9	0.938	22.7	LOS C	25.2	638.5	0.78	0.51	17.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
 Roundabout LOS Method: Same as Sign Control.
 Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
 LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
 Roundabout Capacity Model: US HCM 2010.
 HCM Delay Model used. Geometric Delay not included.



APPENDIX H

**GROWTH CALCULATIONS FOR LONG TERM CONDITIONS AND SANDAG 2050
EXCERPTS**

Roadway Segment	Year 2008 UVOL	Year 2035 UVOL	Growth
Coast Boulevard			
South of 20th Street	1666	1800	1.1
North of 15th Street	1666	1800	1.1
Subtotal	3332	3600	1.08
Camino Del Mar			
North of zone	22059	18768	0.9
North of Loma Santa Fe	23681	20566	0.9
South of Loma Santa Fe	22237	19238	0.9
Subtotal	67977	58572	0.86
Camino Del Mar			
North of Via de la Valle	22634	20625	0.9
South of Via de la Valle	12149	12000	1.0
North of Sandy Point	11459	10600	0.9
South of 27th Street	11459	10600	0.9
South of 25th Street	11459	10600	0.9
North of 23rd Street	9682	10600	1.1
22nd Street and Jimmy Durante Boulevard	9605	8500	0.9
South of Jimmy Durante Boulevard	15333	14893	1.0
Seaview Avenue and L'Auberge del Mar	19775	19700	1.0
L'Auberge del Mar and 15th Street	21813	21900	1.0
North of 13th Street	22628	22900	1.0
North of 11th Street	24509	24745	1.0
North of 9th Street	24509	24700	1.0
North of 8th Street	26211	26700	1.0
North of La Amalista	26916	27713	1.0
North of Del Mar Heights Road	26916	27700	1.0
South of Del Mar Heights	17649	18481	1.0
North of Carmel Valley Road	17649	18500	1.0
Subtotal	332355	331457	1.00
Camino Del Mar			
South of Carmel Valley Road	17020	19098	1.1
Subtotal	17020	19098	1.12
Valley Avenue			
North of Turfwood Lane	15862	20900	1.3
North of Via de la Valle	18404	22500	1.2
Subtotal	34266	43400	1.27
Jimmy Durante Boulevard			
South of Via de la Valle	19954	26700	1.3
North of Turf Rd	19954	26700	1.3
Subtotal	39908	53400	1.34
Jimmy Durante Boulevard			
Turf Road and Jimmy Durante Way	12804	13600	1.1
San Dieguito and Heather Lane	12804	13600	1.1
South of Heather Lane	12234	13500	1.1
North of Luzon Avenue	10362	11400	1.1
South of Luzon Avenue	5728	6800	1.2
Subtotal	53932	58900	1.09
Crest Way			
North of Del Mar Heights Road	1506	1500	1.0
Subtotal	1506	1500	1.00
High Bluff Drive			
Overpark Court and Long Run Drive	2834	2600	0.9
Seahorn Circle and Del Mar Heights	7237	6800	0.9
South of Del Mar Heights	19124	22500	1.2
North of El Camino Real	13037	10400	0.8
Subtotal	42232	42300	1.00
El Camino Real			
Rancho Real and Rancho Del Madison	5167	5500	1.1
Rancho del Madison and Via de la Valle	5167	5500	1.1
Via de la Valle and San Dieguito Road	20518	22300	1.1
San Dieguito Road and Sea Country Lane	18922	24400	1.3
Subtotal	49774	57700	1.16
Via De La Valle			
East of Camino del Mar	19977	20600	1.0
East of South Cedros Avenue	22182	23200	1.0
West of Jimmy Durante Boulevard	20736	21800	1.1

	<i>Subtotal</i>	<i>62895</i>	<i>65600</i>	<i>1.04</i>
Via De La Valle				
	Jimmy Durante Boulevard to I-5	46506	55800	1.2
	<i>Subtotal</i>	<i>46506</i>	<i>55800</i>	<i>1.20</i>
Via De La Valle				
	I-5 South on-ramp (Via de la Valle EB)	13911	16203	1.2
	I-5 South on-ramp (Via de la Valle EB) to I-5 South off-ramp	32596	39646	1.2
	I-5 South off-ramp	5739	6580	1.1
	I-5 South off-Ramp to on-Ramp	32174	38537	1.2
	I-5 South on-Ramp (Via de la Valle WB)	8286	9047	1.1
	I-5 South on-Ramp (Via de la Valle WB) to I-5 North on-Ramp (Via de la Valle EB)	39047	46449	1.2
	I-5 North on-Ramp (Via de la Valle EB)	3329	3965	1.2
	I-5 North on-Ramp to on-Ramp (Via de la Valle EB)	35718	42484	1.2
	I-5 North off-Ramp	14474	17847	1.2
	I-5 North off-Ramp to I-5 North on-Ramp (Via de la Valle WB)	30022	36973	1.2
	I-5 North on-Ramp (Via de la Valle WB)	2787	3647	1.3
	<i>Subtotal</i>	<i>218083</i>	<i>261378</i>	<i>1.20</i>
Via De La Valle				
	East of North on-Ramp	32809	40600	1.2
	West of San Andres Drive	18986	23700	1.2
	East of San Andres Drive	18594	25053	1.3
	<i>Subtotal</i>	<i>70389</i>	<i>89353</i>	<i>1.27</i>
Via De La Valle				
	Ocean Avenue and Stratford Court	2817	3100	1.1
	West of Camino del Mar	6152	6700	1.1
	<i>Subtotal</i>	<i>8969</i>	<i>9800</i>	<i>1.09</i>
Del Mar Heights Road				
	West of Camino del Mar	2655	2700	1.0
	<i>Subtotal</i>	<i>2655</i>	<i>2700</i>	<i>1.02</i>
Del Mar Heights Road				
	East of Camino del Mar	21279	22800	1.1
	West of Nogales Dr	22010	24200	1.1
	Needless Drive to Mar Scenic Drive	22010	23561	1.1
	Mar Scenic Drive to Durango Drive	22651	24200	1.1
	Durango Drive to Mercado Drive	22651	24202	1.1
	Boquita Drive to Mango Drive	28137	29800	1.1
	Mango Drive and Portofino	22651	24202	1.1
	Portofino and I-5 South off-ramp	35928	39400	1.1
	<i>Subtotal</i>	<i>197317</i>	<i>212365</i>	<i>1.08</i>
Del Mar Heights Road				
	I-5 South off-ramp (Del Mar Heights WB)	12441	10400	0.8
	I-5 South off-ramp and I-5 South on-ramp	35153	35753	1.0
	I-5 South on-ramp (Del Mar Heights EB)	6832	8918	1.3
	East of I-5 South on-ramp	42412	44404	1.0
	I-5 North on-ramp	11506	9135	0.8
	I-5 North off-ramp	15715	15885	1.0
	I-5 North off-ramp to High Bluff Drive	51985	50166	1.0
	<i>Subtotal</i>	<i>176044</i>	<i>174661</i>	<i>0.99</i>
Del Mar Heights Road				
	High Bluff Drive to El Camino Real	34731	32100	0.9
	East of El Camino Real	30853	24700	0.8
	<i>Subtotal</i>	<i>65584</i>	<i>56800</i>	<i>0.87</i>
Carmel Valley Road				
	East of Camino del Mar	5683	6600	1.2
	Torrey Point Road and Del Mar Scenic Parkway	5683	6600	1.2
	East Del Mar Scenic Parkway	5683	6600	1.2
	<i>Subtotal</i>	<i>17049</i>	<i>19800</i>	<i>1.16</i>
San Andres Drive				
	North of Via de la Valle	9050	11992	1.3
	<i>Subtotal</i>	<i>9050</i>	<i>11992</i>	<i>1.33</i>
Lomas Santa Fe				
	West of I-5 SB Ramps	30,092	37,508	1.25
	Stratford Ct to Camino Del Mar	23,506	29,169	1.24
	<i>Subtotal</i>	<i>53,598</i>	<i>66,677</i>	<i>1.24</i>

Table A.4 – Phased Highway Projects - Revenue Constrained Plan (Continued)


Year Built By	Freeway	From	To	Existing	Improvements	(\$ Millions - YOE Dollars)		
						Cost	Cumulative Cost	
2020	SR 94/ SR 125	South to East (Freeway Connector)					\$ 144	\$ 7,465
2030	I-5	SR 56	Manchester Ave	8F+2HOV	10F+4ML		\$ 897	\$ 8,362
2030	I-5	Palomar St	SR 15	8F	8F+2ML		\$ 274	\$ 8,636
2030	I-5	I-5/I-805 Merge	SR 56	8F/14F+2HOV	8F/14F+4ML		\$ 55	\$ 8,691
2030	I-5	Manchester Ave	Palomar Airport Rd	8F+2HOV	10F+4ML		\$ 1,685	\$ 10,376
2030	I-5/SR 56	West to North (Freeway Connector)					\$ 89	\$ 10,465
2030	I-5/SR 56	South to East (Freeway Connector)					\$ 164	\$ 10,629
2030	I-15/SR 78	East to South and North to West (HOV Connectors)					\$ 119	\$ 10,748
2030	I-805	SR 905	Palomar St	8F	8F+4ML		\$ 463	\$ 11,211
2030	I-805	SR 15	Mission Valley	8F	8F+4ML		\$ 315	\$ 11,526
2030	I-805	Mission Valley Viaduct	SR 52	8F/10F	8F/10F+4ML		\$ 873	\$ 12,399
2030	SR 67	Mapleview St	Dye Rd	2C/4C	4C		\$ 781	\$ 13,180
2030	SR 94/ SR 125	West to North (Freeway Connector)					\$ 247	\$ 13,427
2030	SR 125	SR 94	I-8	8F	10F		\$ 295	\$ 13,722
2030	SR 241	Orange County	I-5	4T	6T		\$ 79	\$ 13,801
2035	I-5	Palomar Airport Rd	SR 78	8F+2HOV	8F+4ML		\$ 1,578	\$ 15,379
2035	I-5	SR 78	Vandegrift Blvd	8F	8F+4ML		\$ 779	\$ 16,158
2035	I-15/SR 94	South to West and East to North (HOV Connectors)					\$ 126	\$ 16,284
2035	SR 52	I-805	I-15	6F	6F+2ML		\$ 314	\$ 16,598
2040	I-5/SR 78	South to East and West to North (HOV Connectors)					\$ 199	\$ 16,797
2040	I-5/SR 78	North to East and West to South (HOV Connectors)					\$ 199	\$ 16,996
2040	I-5/SR 78	South to East (Freeway Connector)					\$ 100	\$ 17,096
2040	I-5/SR 78	West to South (Freeway Connector)					\$ 76	\$ 17,172

APPENDIX I

**PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS
LONG TERM CONDITIONS**

HCM Signalized Intersection Capacity Analysis
1: Via De La Valle & Camino Del Mar

LT AM
3/10/2012




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Volume (vph)	1	94	25	95	116	182	17	150	83	498	498	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1899	1615	1805	1900	1615	1805	3610	1615	1805	3610	1615	1615
Flt Permitted	1.00	1.00	0.69	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1894	1615	1315	1900	1615	1805	3610	1615	1805	3610	1615	1615
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)	1	99	26	100	122	192	18	158	87	524	524	18
RTOR Reduction (vph)	0	0	21	0	0	157	0	0	73	0	0	8
Lane Group Flow (vph)	0	100	5	100	122	35	18	158	14	524	524	10
Turn Type	Perm	Perm	Perm	Perm	Perm	Prot	Perm	Prot	Perm	Prot	Perm	Perm
Protected Phases		4			8		5	2		1		6
Permitted Phases	4		4	8		8			2			6
Actuated Green, G (s)	9.8	9.8	9.8	9.8	9.8	1.2	8.6	8.6	21.8	29.2	29.2	29.2
Effective Green, g (s)	9.8	9.8	9.8	9.8	9.8	1.2	8.6	8.6	21.8	29.2	29.2	29.2
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.18	0.02	0.16	0.16	0.41	0.54	0.54	0.54
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	346	295	240	347	295	40	578	259	733	1963	878	878
v/s Ratio Prot				0.06		0.01	0.04		c0.29	c0.15		
v/s Ratio Perm	0.05	0.00	c0.08		0.02			0.01			0.01	
v/c Ratio	0.29	0.02	0.42	0.35	0.12	0.45	0.27	0.05	0.71	0.27	0.01	0.01
Uniform Delay, d1	18.9	18.0	19.4	19.2	18.3	25.9	19.8	19.1	13.3	6.5	5.6	5.6
Progression 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
Incremental Delay, d2	0.5	0.0	1.2	0.6	0.2	7.9	0.3	0.1	3.3	0.1	0.0	0.0
Delay (s)	19.4	18.0	20.6	19.8	18.5	33.8	20.1	19.2	16.7	6.6	5.6	5.6
Level of Service	B	B	C	B	B	C	C	C	B	B	A	A
Approach Delay (s)	19.1			19.4			20.7			11.5		
Approach LOS	B			B			C			B		

Intersection Summary			
HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2: Via De La Valle & Jimmy Durante Blvd

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Volume (vph)	47	785	30	756	654	390	29	80	277	556	131	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	0.97	0.95	1.00	1.00	0.88	0.97	1.00	1.00	1.00	1.00
Frt	1.00	0.99	1.00	0.94	1.00	1.00	0.85	1.00	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1805	3590	3502	3407	1805	1900	2842	3502	1900	1615	1615	1615
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1805	3590	3502	3407	1805	1900	2842	3502	1900	1615	1615	1615
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)	49	826	32	796	688	411	31	84	292	585	138	45
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	0	36
Lane Group Flow (vph)	49	855	0	796	1099	0	31	84	292	585	138	9
Turn Type	Prot	Prot	Prot	Prot	Prot	Split	Split	Free	Split	Perm	Perm	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases								Free			6	6
Actuated Green, G (s)	5.1	22.7		18.7	36.3		7.5	7.5	82.9	16.0	16.0	16.0
Effective Green, g (s)	5.1	22.7		18.7	36.3		7.5	7.5	82.9	16.0	16.0	16.0
Actuated g/C Ratio	0.06	0.27		0.23	0.44		0.09	0.09	1.00	0.19	0.19	0.19
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	111	983		790	1492		163	172	2842	676	367	312
v/s Ratio Prot	0.03	c0.24		c0.23	0.32		0.02	c0.04		c0.17	0.07	
v/s Ratio Perm								0.10				0.01
v/c Ratio	0.44	0.87		1.01	0.74		0.19	0.49	0.10	0.87	0.38	0.03
Uniform Delay, d1	37.5	28.7		32.1	19.3		34.9	35.9	0.0	32.4	29.1	27.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8	8.3		33.9	1.9		0.6	2.2	0.1	11.2	0.6	0.0
Delay (s)	40.3	37.0		66.0	21.3		35.5	38.1	0.1	43.6	29.8	27.2
Level of Service	D	D		E	C		D	D	A	D	C	C
Approach Delay (s)		37.2			40.1			10.6			40.2	
Approach LOS		D			D			B			D	

Intersection Summary			
HCM Average Control Delay	36.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	82.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

3: Via De La Valle & I-5 SB Off-Ramp

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑				↓	↓	↓
Volume (vph)	0	724	1116	0	1339	712	0	0	0	218	0	199
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5	4.5	4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	0.93	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.97	1.00
Satd. Flow (prot)		3610	1615		3610	1615				1715	1566	1534
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.97	1.00
Satd. Flow (perm)		3610	1615		3610	1615				1715	1566	1534
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	762	1175	0	1409	749	0	0	0	229	0	209
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	10	10	10
Lane Group Flow (vph)	0	762	1175	0	1409	749	0	0	0	151	137	130
Turn Type		Free			Free					Split	Perm	
Protected Phases		4			8					6	6	
Permitted Phases		Free			Free						6	
Actuated Green, G (s)		18.9	34.9		18.9	34.9				7.0	7.0	7.0
Effective Green, g (s)		18.9	34.9		18.9	34.9				7.0	7.0	7.0
Actuated g/C Ratio		0.54	1.00		0.54	1.00				0.20	0.20	0.20
Clearance Time (s)		4.5			4.5					4.5	4.5	4.5
Vehicle Extension (s)		3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1955	1615		1955	1615				344	314	308
v/s Ratio Prot		0.21			0.39					0.09	0.09	
v/s Ratio Perm		c0.73			0.46							0.08
v/c Ratio		0.39	0.73		0.72	0.46				0.44	0.44	0.42
Uniform Delay, d1		4.6	0.0		6.0	0.0				12.2	12.2	12.2
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.1	2.9		1.3	1.0				0.9	1.0	0.9
Delay (s)		4.8	2.9		7.4	1.0				13.1	13.2	13.1
Level of Service		A			A					B	B	B
Approach Delay (s)		3.6			5.1			0.0		13.1		
Approach LOS		A			A			A		B		
Intersection Summary												
HCM Average Control Delay		5.3			HCM Level of Service			A				
HCM Volume to Capacity ratio		0.73										
Actuated Cycle Length (s)		34.9			Sum of lost time (s)			0.0				
Intersection Capacity Utilization		52.7%			ICU Level of Service			A				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Via De La Valle & I-5 NB On-Ramp

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑				↓	↓	↓
Volume (vph)	0	632	320	0	1238	481	821	0	544	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frt		1.00	0.85		1.00	0.85	1.00	0.96	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)		3610	1615		3610	1615	1715	1605	1534			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)		3610	1615		3610	1615	1715	1605	1534			
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	665	337	0	1303	506	864	0	573	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	27	70	0	0	0
Lane Group Flow (vph)	0	665	337	0	1303	506	492	465	383	0	0	0
Turn Type		Free			Free		Perm	Perm				
Protected Phases		4			8			2	2			
Permitted Phases		Free			Free			2	2			
Actuated Green, G (s)		17.5	43.2		17.5	43.2	16.7	16.7	16.7			
Effective Green, g (s)		17.5	43.2		17.5	43.2	16.7	16.7	16.7			
Actuated g/C Ratio		0.41	1.00		0.41	1.00	0.39	0.39	0.39			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)		1462	1615		1462	1615	663	620	593			
v/s Ratio Prot		0.18			c0.36							
v/s Ratio Perm		0.21			0.31		0.29	0.29	0.25			
v/c Ratio		0.45	0.21		0.89	0.31	0.74	0.75	0.65			
Uniform Delay, d1		9.4	0.0		12.0	0.0	11.4	11.4	10.8			
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.2	0.3		7.2	0.5	4.5	5.1	2.4			
Delay (s)		9.6	0.3		19.2	0.5	15.9	16.5	13.3			
Level of Service		A			B		A	B	B			
Approach Delay (s)		6.5			14.0			15.3		0.0		
Approach LOS		A			B			B		A		
Intersection Summary												
HCM Average Control Delay		12.6			HCM Level of Service			B				
HCM Volume to Capacity ratio		0.82										
Actuated Cycle Length (s)		43.2			Sum of lost time (s)			9.0				
Intersection Capacity Utilization		70.0%			ICU Level of Service			C				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Via De La Valle & San Andres Dr

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑↑	↑	↑	↑↑	↑↑	↑	↑	↑	↑	↑	↑
Volume (vph)	177	648	20	110	1175	137	30	9	28	105	47	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Flt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89	0.95	0.85	0.95	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.98	1.00
Satd. Flow (prot)	3502	3610	1615	1805	3610	1615	1715	1608			1675	1534
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	1.00
Satd. Flow (perm)	3502	3610	1615	1805	3610	1615	1715	1608			1675	1534
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)	186	682	21	116	1237	144	32	9	29	111	49	302
RTOR Reduction (vph)	0	0	9	0	0	83	0	27	0	0	20	179
Lane Group Flow (vph)	186	682	12	116	1237	61	29	14	0	0	222	41
Turn Type	Prot	Perm	Perm	Prot	Perm	Split	Split	Perm	Split	Perm	Perm	Perm
Protected Phases	7	4		3	8	2	2		6	6		
Permitted Phases			4		8							6
Actuated Green, G (s)	6.8	31.0	31.0	7.2	31.4	31.4	4.1	4.1			13.9	13.9
Effective Green, g (s)	6.8	31.0	31.0	7.2	31.4	31.4	4.1	4.1			13.9	13.9
Actuated g/C Ratio	0.09	0.42	0.42	0.10	0.42	0.42	0.06	0.06			0.19	0.19
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	321	1508	675	175	1528	683	95	89			314	287
v/s Ratio Prot	0.05	0.19		c0.06	c0.34		c0.02	0.01			c0.13	
v/s Ratio Perm			0.01		0.04							0.03
v/c Ratio	0.58	0.45	0.02	0.66	0.81	0.09	0.31	0.15			0.71	0.14
Uniform Delay, d1	32.3	15.5	12.7	32.3	18.8	12.8	33.7	33.4			28.2	25.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	2.5	0.2	0.0	9.1	3.3	0.1	1.8	0.8			7.1	0.2
Delay (s)	34.9	15.7	12.7	41.4	22.1	12.9	35.5	34.2			35.3	25.4
Level of Service	C	B	B	D	C	C	B	D			D	C
Approach Delay (s)		19.7			22.7			34.7				30.6
Approach LOS		B			C			C				C

Intersection Summary			
HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	74.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Level of Service Computation Report
 2000 HCM 4-Way Stop Method (Future Volume Alternative)

 Intersection #6 Camino Del Mar & Coast Blvd

Cycle (sec): 100 Critical Vol./Cap.(X): 0.813
 Loss Time (sec): 0 Average Delay (sec/veh): 20.1
 Optimal Cycle: 0 Level Of Service: C

Street Name: Camino Del Mar Coast Blvd
 Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R L - T - R L - T - R
 -----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

Control: Stop Sign Stop Sign Stop Sign Stop Sign
 Rights: Include Include Include Include
 Min. Green: 5 5 5 5 5 5 5 5 5 5 5 5 5 5
 Lanes: 1 0 1 0 1 1 0 1 0 1 0 1 0 0 1 0 0 0
 -----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

Volume Module:
 Base Vol: 9 149 5 7 526 70 49 1 9 10 1 5
 Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 Initial Bse: 9 149 5 7 526 70 49 1 9 10 1 5
 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 9 149 5 7 526 70 49 1 9 10 1 5
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
 PHF Volume: 9 157 5 7 554 74 52 1 9 11 1 5
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 9 157 5 7 554 74 52 1 9 11 1 5
 PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 FinalVolume: 9 157 5 7 554 74 52 1 9 11 1 5
 -----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

Saturation Flow Module:
 Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 0.98 0.02 1.00 0.63 0.06 0.31
 Final Sat.: 519 562 627 616 681 775 476 10 579 323 32 161
 -----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

Capacity Analysis Module:
 Vol/Sat: 0.02 0.28 0.01 0.01 0.81 0.10 0.11 0.11 0.02 0.03 0.03 0.03
 Crit Moves: **** *
 Delay/Veh: 9.4 11.0 8.2 8.5 26.2 7.7 10.5 10.5 8.6 9.7 9.7 9.7
 Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 AdjDel/Veh: 9.4 11.0 8.2 8.5 26.2 7.7 10.5 10.5 8.6 9.7 9.7 9.7
 LOS by Move: A B A A D A B B A A A
 ApproachDel: 10.8 23.9 10.2 9.7
 Delay Adj: 1.00 1.00 1.00 1.00
 ApprAdjDel: 10.8 23.9 10.2 9.7
 LOS by Appr: B C B A
 AllWayAvgQ: 0.4 8.6 0.2 0.3 86.3 2.5 2.7 2.7 0.4 0.7 0.7 0.7

Note: Queue reported is the distance per lane in feet.

HCM Unsignalized Intersection Capacity Analysis

7: 15th St & Stratford Ct

1/31/2012



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Volume (veh/h)	100	19	22	86	10	17
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	105	20	23	91	11	18
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				311		
pX, platoon unblocked						
vC, conflicting volume			125		252	115
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			125		252	115
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		99	98
cM capacity (veh/h)			1474		729	943

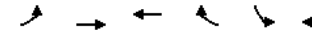
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	125	114	28
Volume Left	0	23	11
Volume Right	20	0	18
cSH	1700	1474	850
Volume to Capacity	0.07	0.02	0.03
Queue Length 95th (ft)	0	1	3
Control Delay (s)	0.0	1.6	9.4
Lane LOS		A	A
Approach Delay (s)	0.0	1.6	9.4
Approach LOS			A

Intersection Summary			
Average Delay		1.7	
Intersection Capacity Utilization	22.4%		ICU Level of Service A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

8: 12th St & Stratford Ct

1/31/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Volume (veh/h)	15	13	4	3	6	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	16	14	4	3	6	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	7				51	6
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	7				51	6
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				99	99
cM capacity (veh/h)	1626				953	1083

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	29	7	14
Volume Left	16	0	6
Volume Right	0	3	7
cSH	1626	1700	1019
Volume to Capacity	0.01	0.00	0.01
Queue Length 95th (ft)	1	0	1
Control Delay (s)	3.9	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	3.9	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay		4.6	
Intersection Capacity Utilization	18.2%		ICU Level of Service A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
9: 15th St & Camino Del Mar

LT AM
3/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	
Volume (vph)	21	11	69	39	8	62	61	263	49	88	663	36	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	
Frbp, ped/bikes	1.00	0.83	1.00	1.00	0.86	1.00	0.98	1.00	1.00	1.00	1.00	1.00	
Fipb, ped/bikes	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	1.00	0.85	1.00	1.00	0.85	1.00	0.98	1.00	0.99	1.00	0.99	1.00	
Flt Protected	0.97	1.00	0.95	0.97	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1840	1343	1715	1746	1385	1805	3452	1805	3569	1805	3569	1805	
Flt Permitted	0.97	1.00	0.95	0.97	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1840	1343	1715	1746	1385	1805	3452	1805	3569	1805	3569	1805	
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)	22	12	73	41	8	65	64	277	52	93	698	38	
RTOR Reduction (vph)	0	0	68	0	0	61	0	19	0	0	5	0	
Lane Group Flow (vph)	0	34	5	24	25	4	64	310	0	93	731	0	
Confl. Peds. (#/hr)			36			29		78				37	
Turn Type	Split	Perm	Split	Perm	Prot	Prot	Prot	Prot	Prot	Prot	Prot	Prot	
Protected Phases	7	7		3	3		5	2		1	6		
Permitted Phases		7			3								
Actuated Green, G (s)		3.1	3.1	3.0	3.0	3.0	3.6	17.8		3.9	18.1		
Effective Green, g (s)		3.1	3.1	3.0	3.0	3.0	3.6	17.8		3.9	18.1		
Actuated g/C Ratio		0.07	0.07	0.07	0.07	0.07	0.08	0.39		0.09	0.40		
Clearance Time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5		
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		125	91	112	114	91	142	1342		154	1410		
v/s Ratio Prot		c0.02		0.01	c0.01		0.04	0.09		c0.05	c0.20		
v/s Ratio Perm			0.00			0.00							
v/c Ratio		0.27	0.05	0.21	0.22	0.05	0.45	0.23		0.60	0.52		
Uniform Delay, d1		20.3	20.0	20.3	20.3	20.1	20.2	9.4		20.2	10.5		
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		
Incremental Delay, d2		1.2	0.2	1.0	1.0	0.2	2.3	0.1		6.5	0.3		
Delay (s)		21.5	20.2	21.2	21.3	20.3	22.4	9.5		26.7	10.9		
Level of Service		C	C	C	C	C	C	A		C	B		
Approach Delay (s)		20.6			20.7			11.6			12.6		
Approach LOS		C			C			B			B		
Intersection Summary													
HCM Average Control Delay		13.6			HCM Level of Service						B		
HCM Volume to Capacity ratio		0.41											
Actuated Cycle Length (s)		45.8			Sum of lost time (s)				13.5				
Intersection Capacity Utilization		52.0%			ICU Level of Service						A		
Analysis Period (min)		15											
c Critical Lane Group													

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Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #10 Camino Del Mar & 13th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.593
Loss Time (sec): 0 Average Delay (sec/veh): 13.1
Optimal Cycle: 0 Level Of Service: B

Street Name: Camino Del Mar 13th St

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Stop Sign	Stop Sign	Stop Sign	Stop Sign
Right:	Include	Include	Include	Include
Min. Green:	5 5 5	5 5 5	5 5 5	5 5 5
Lanes:	1 0 1 1 0	1 0 1 1 0	0 0 1! 0 0	0 0 1! 0 0

Volume Module:

Base Vol:	71	356	6	30	758	14	14	0	29	17	2	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	71	356	6	30	758	14	14	0	29	17	2	6
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	71	356	6	30	758	14	14	0	29	17	2	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	75	375	6	32	798	15	15	0	31	18	2	6
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	75	375	6	32	798	15	15	0	31	18	2	6
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	75	375	6	32	798	15	15	0	31	18	2	6

Saturation Flow Module:

Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.97	0.03	1.00	1.96	0.04	0.33	0.00	0.67	0.68	0.08	0.24
Final Sat.:	572	1232	21	620	1345	25	186	0	385	364	43	129

Capacity Analysis Module:

Vol/Sat:	0.13	0.30	0.30	0.05	0.59	0.59	0.08	xxxx	0.08	0.05	0.05	0.05
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Delay/Veh:	9.7	10.7	10.7	8.7	15.1	15.0	9.4	0.0	9.4	9.6	9.6	9.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.7	10.7	10.7	8.7	15.1	15.0	9.4	0.0	9.4	9.6	9.6	9.6
LOS by Move:	A	B	B	A	C	C	A	*	A	A	A	A
ApproachDel:	10.5			14.9			9.4		9.4			9.6
Delay Adj:	1.00			1.00			1.00		1.00			1.00
ApprAdjDel:	10.5			14.9			9.4		9.6			9.6
LOS by Appr:	B			B			A		A			A
AllWayAvgQ:	3.5	10.3	10.2	1.3	34.3	34.0	1.9	1.9	1.9	1.1	1.1	1.1

Note: Queue reported is the distance per lane in feet.

HCM Unsignalized Intersection Capacity Analysis
11: 12th St & Camino Del Mar

LT AM
3/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↖			↖		↕	↖		↖	↕
Volume (veh/h)	0	0	16	0	0	4	0	460	15	0	805	12
Sign Control	Stop			Stop			Free			Free		
Grade	0%			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
Hourly flow rate (vph)	0	0	17	0	0	4	0	484	16	0	847	13
Pedestrians	4			46			43			43		
Lane Width (ft)	12.0			12.0			12.0			12.0		
Walking Speed (ft/s)	4.0			4.0			4.0			4.0		
Percent Blockage	0			4			4			4		
Right turn flare (veh)												
Median type	None			None			None			None		
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1147	1358	480	971	1348	285	864				500	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1147	1358	480	971	1348	285	864				500	
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	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 %	100	100	97	100	100	99	100				100	
cM capacity (veh/h)	149	150	515	195	152	692	785				1075	
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2					
Volume Total	17	4	242	242	16	565	295					
Volume Left	0	0	0	0	0	0	0					
Volume Right	17	4	0	0	16	0	13					
cSH	515	692	1700	1700	1700	1700	1700					
Volume to Capacity	0.03	0.01	0.14	0.14	0.01	0.33	0.17					
Queue Length 95th (ft)	3	0	0	0	0	0	0					
Control Delay (s)	12.2	10.2	0.0	0.0	0.0	0.0	0.0					
Lane LOS	B	B										
Approach Delay (s)	12.2	10.2	0.0				0.0					
Approach LOS	B	B										
Intersection Summary												
Average Delay			0.2									
Intersection Capacity Utilization			40.8%	ICU Level of Service		A						
Analysis Period (min)			15									

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #12 Camino Del Mar & 11th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.591
Loss Time (sec): 0 Average Delay (sec/veh): 13.3
Optimal Cycle: 0 Level Of Service: B

Street Name: Camino Del Mar 11th St

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Stop Sign	Stop Sign	Stop Sign	Stop Sign
Rights:	Include	Include	Include	Include
Min. Green:	5 5 5	5 5 5	5 5 5	5 5 5
Lanes:	1 0 1 1 0	1 0 2 0 1	0 0 1! 0 0	0 0 1! 0 0

Volume Module:

Base Vol:	33	421	17	19	759	21	23	2	13	20	3	7
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	33	421	17	19	759	21	23	2	13	20	3	7
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	33	421	17	19	759	21	23	2	13	20	3	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	35	443	18	20	799	22	24	2	14	21	3	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	443	18	20	799	22	24	2	14	21	3	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	35	443	18	20	799	22	24	2	14	21	3	7

Saturation Flow Module:

Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.92	0.08	1.00	2.00	1.00	0.61	0.05	0.34	0.67	0.10	0.23
Final Sat.:	572	1208	49	615	1351	773	327	28	185	355	53	124

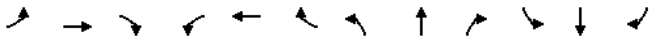
Capacity Analysis Module:

Vol/Sat:	0.06	0.37	0.37	0.03	0.59	0.03	0.07	0.07	0.07	0.06	0.06	0.06
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Delay/Veh:	9.2	11.4	11.4	8.7	15.2	7.4	9.7	9.7	9.7	9.7	9.7	9.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.2	11.4	11.4	8.7	15.2	7.4	9.7	9.7	9.7	9.7	9.7	9.7
LOS by Move:	A	B	B	A	C	A	A	A	A	A	A	A
ApproachDel:	11.3			14.8			9.7			9.7		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	11.3			14.8			9.7			9.7		
LOS by Appr:	B			B			A			A		
AllWayAvgQ:	1.5	13.7	13.5	0.8	33.7	0.7	1.7	1.7	1.7	1.4	1.4	1.4

Note: Queue reported is the distance per lane in feet.

HCM Signalized Intersection Capacity Analysis
13: 9th St & Camino Del Mar


LT AM
3/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	
Volume (vph)	36	1	31	13	2	6	40	441	8	24	729	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5		4.5		4.5
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00		0.95
Frbp, ped/bikes		0.98			0.99		1.00	1.00		1.00		1.00
Fipb, ped/bikes		0.99			0.98		1.00	1.00		1.00		1.00
Frt		0.94			0.96		1.00	1.00		1.00		0.99
Fit Protected		0.97			0.97		0.95	1.00		0.95		1.00
Satd. Flow (prot)		1680			1725		1805	3601		1805		3582
Fit Permitted		1.00			1.00		0.95	1.00		0.95		1.00
Satd. Flow (perm)		1724			1780		1805	3601		1805		3582
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)	38	1	33	14	2	6	42	464	8	25	767	36
RTOR Reduction (vph)	0	31	0	0	6	0	0	1	0	0	4	0
Lane Group Flow (vph)	0	41	0	0	16	0	42	471	0	25	799	0
Confl. Peds. (#/hr)	43		46	46		43	4					4
Turn Type	Perm		Perm			Prot		Prot				
Protected Phases	4		8			5		2		1	6	
Permitted Phases	4		8									
Actuated Green, G (s)	2.6		2.6			1.8		17.5		0.8	16.5	
Effective Green, g (s)	2.6		2.6			1.8		17.5		0.8	16.5	
Actuated g/C Ratio	0.08		0.08			0.05		0.51		0.02	0.48	
Clearance Time (s)	4.5		4.5			4.5		4.5		4.5	4.5	
Vehicle Extension (s)	3.0		3.0			3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	130		135			94		1832		42	1718	
v/s Ratio Prot	c0.02		0.01			c0.02		0.13		0.01	c0.22	
v/s Ratio Perm	0.32		0.12			0.45		0.26		0.60	0.46	
Uniform Delay, d1	15.1		14.8			15.8		4.8		16.6	6.0	
Progression Factor	1.00		1.00			1.00		1.00		1.00	1.00	
Incremental Delay, d2	1.4		0.4			3.4		0.1		20.6	0.2	
Delay (s)	16.5		15.2			19.2		4.8		37.2	6.2	
Level of Service	B		B			B		A		D	A	
Approach Delay (s)	16.5		15.2			6.0				7.1		
Approach LOS	B		B			A				A		
Intersection Summary												
HCM Average Control Delay	7.3		HCM Level of Service			A						
HCM Volume to Capacity ratio	0.44											
Actuated Cycle Length (s)	34.4		Sum of lost time (s)			13.5						
Intersection Capacity Utilization	47.6%		ICU Level of Service			A						
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
14: Del Mar Heights Rd & Camino Del Mar

LT AM
3/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	12	103	38	532	69	431	24	150	64	327	534	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00
Fit Protected		0.99	1.00	0.95	0.96	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		1890	1615	1715	1738	1615	1805	3610	1615	1805	1615	3603
Fit Permitted		0.99	1.00	0.95	0.96	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)		1890	1615	1715	1738	1615	1805	3610	1615	1805	1615	3603
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)	13	108	40	560	73	454	25	158	67	344	562	7
RTOR Reduction (vph)	0	0	36	0	0	241	0	0	56	0	1	0
Lane Group Flow (vph)	0	121	4	314	319	213	25	158	11	344	568	0
Turn Type	Split		Perm		Split		pm+ov		Prot		Perm Prot	
Protected Phases	7		7		3		3		1	5		2
Permitted Phases	7		7		3		3		1	5		2
Actuated Green, G (s)	7.3		7.3		15.8		15.8		32.6	2.8		11.6
Effective Green, g (s)	7.3		7.3		15.8		15.8		32.6	2.8		11.6
Actuated g/C Ratio	0.11		0.11		0.23		0.23		0.47	0.04		0.17
Clearance Time (s)	4.5		4.5		4.5		4.5		4.5	4.5		4.5
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	199		170		390		395		758	73		603
v/s Ratio Prot	c0.06		0.18		c0.18		0.07		0.01	0.04		c0.19
v/s Ratio Perm	0.61		0.02		0.81		0.81		0.28	0.34		0.26
v/c Ratio	0.61		0.02		0.81		0.81		0.28	0.34		0.26
Uniform Delay, d1	29.7		27.9		25.4		25.4		11.3	32.5		25.2
Progression Factor	1.00		1.00		1.00		1.00		1.00	1.00		1.00
Incremental Delay, d2	5.2		0.1		11.5		11.5		0.2	2.8		0.2
Delay (s)	34.9		28.0		36.9		36.9		11.5	35.3		25.5
Level of Service	C		C		D		D		B	D		C
Approach Delay (s)	33.2		26.3		26.3		26.3		26.1	23.2		23.2
Approach LOS	C		C		C		C		C	C		C
Intersection Summary												
HCM Average Control Delay	25.5		HCM Level of Service			C						
HCM Volume to Capacity ratio	0.65											
Actuated Cycle Length (s)	69.5		Sum of lost time (s)			13.5						
Intersection Capacity Utilization	56.7%		ICU Level of Service			B						
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
15: Carmel Valley Rd & Camino Del Mar

LT AM
3/10/2012

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↑	↘	↙	↘
Volume (vph)	661	79	117	55	178	830
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr't	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)	1805	1615	1900	1615	1805	1900
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1615	1900	1615	1805	1900
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	696	83	123	58	187	874
RTOR Reduction (vph)	0	52	0	41	0	0
Lane Group Flow (vph)	696	31	123	17	187	874
Turn Type	Perm		Perm		Prot	
Protected Phases	8		2		1	6
Permitted Phases	8		2			
Actuated Green, G (s)	27.6	27.6	21.8	21.8	10.4	36.7
Effective Green, g (s)	27.6	27.6	21.8	21.8	10.4	36.7
Actuated g/C Ratio	0.38	0.38	0.30	0.30	0.14	0.50
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	680	608	565	480	256	951
v/s Ratio Prot	c0.39		0.06		0.10	c0.46
v/s Ratio Perm		0.02		0.01		
v/c Ratio	1.02	0.05	0.22	0.04	0.73	0.92
Uniform Delay, d1	22.8	14.5	19.3	18.3	30.1	16.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	40.6	0.0	0.2	0.0	10.2	13.4
Delay (s)	63.5	14.6	19.5	18.3	40.3	30.4
Level of Service	E	B	B	B	D	C
Approach Delay (s)	58.3		19.1			32.1
Approach LOS	E		B			C

Intersection Summary			
HCM Average Control Delay	41.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	73.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

5:00 pm 1/25/2012 Existing AM

Synchro 7 - Report
Page 1

HCM Signalized Intersection Capacity Analysis
16: Del Mar Heights Rd & Crest Way

1/31/2012

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↖	↗	↖	↗
Volume (vph)	4	827	777	164	88	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	
Fr't	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1805	3610	3610	1615	1805	
Flt Permitted	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1805	3610	3610	1615	1805	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	4	871	818	173	93	0
RTOR Reduction (vph)	0	0	0	99	0	0
Lane Group Flow (vph)	4	871	818	74	93	0
Turn Type	Prot		Perm			
Protected Phases	7	4	8		6	
Permitted Phases	8					
Actuated Green, G (s)	0.7	18.7	13.5	13.5	3.7	
Effective Green, g (s)	0.7	18.7	13.5	13.5	3.7	
Actuated g/C Ratio	0.02	0.60	0.43	0.43	0.12	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	40	2150	1552	694	213	
v/s Ratio Prot	0.00	c0.24	c0.23		c0.05	
v/s Ratio Perm				0.05		
v/c Ratio	0.10	0.41	0.53	0.11	0.44	
Uniform Delay, d1	15.0	3.4	6.6	5.3	12.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.1	0.1	0.3	0.1	1.4	
Delay (s)	16.1	3.5	6.9	5.4	14.3	
Level of Service	B	A	A	A	B	
Approach Delay (s)		3.6	6.7		14.3	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	5.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	31.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	35.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

5:00 pm 1/25/2012 Existing AM

Synchro 7 - Report
Page 16

HCM Signalized Intersection Capacity Analysis

17: Del Mar Heights Rd & I-5 SB Off-Ramp

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑				↓	↓	↓
Volume (vph)	0	642	698	0	936	965	0	0	0	815	0	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5	4.5	4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	0.99	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)		3610	1615		3610	1615				1715	1635	1534
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)		3610	1615		3610	1615				1715	1635	1534
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	676	735	0	985	1016	0	0	0	858	0	313
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	7	17
Lane Group Flow (vph)	0	676	735	0	985	1016	0	0	0	446	436	265
Turn Type		Free			Free					Split		Perm
Protected Phases		4			8					1	1	
Permitted Phases		Free			Free							1
Actuated Green, G (s)		14.8	39.6		14.8	39.6				15.8	15.8	15.8
Effective Green, g (s)		14.8	39.6		14.8	39.6				15.8	15.8	15.8
Actuated g/C Ratio		0.37	1.00		0.37	1.00				0.40	0.40	0.40
Clearance Time (s)		4.5			4.5					4.5	4.5	4.5
Vehicle Extension (s)		3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1349	1615		1349	1615				684	652	612
v/s Ratio Prot		0.19			0.27					0.26	0.27	
v/s Ratio Perm			0.46			0.63						0.17
v/c Ratio		0.50	0.46		0.73	0.63				0.65	0.67	0.43
Uniform Delay, d1		9.6	0.0		10.7	0.0				9.7	9.8	8.6
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.3	0.9		2.1	1.9				2.2	2.6	0.5
Delay (s)		9.8	0.9		12.7	1.9				11.9	12.4	9.1
Level of Service		A	A		B	A				B	B	A
Approach Delay (s)		5.2			7.2			0.0			11.4	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	39.6	Sum of lost time (s)	0.0
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

18: Del Mar Heights Rd & I-5 NB On-Ramp

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑↑	↑				↓	↓	↓
Volume (vph)	236	1255	0	0	1494	807	370	0	811	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5	4.5	4.5	4.5	4.5			
Lane Util. Factor		0.97	0.95		0.91	1.00	0.95	0.91	0.95			
Frt		1.00	1.00		1.00	0.85	1.00	0.86	0.85			
Flt Protected		0.95	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		3502	3610		5187	1615	1715	1486	1534			
Flt Permitted		0.95	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		3502	3610		5187	1615	1715	1486	1534			
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)	248	1321	0	0	1573	849	389	0	854	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	558	0	20	20	0	0	0
Lane Group Flow (vph)	248	1321	0	0	1573	291	350	429	424	0	0	0
Turn Type		Prot			Perm					Split		Perm
Protected Phases		7	4			8		2	2			
Permitted Phases					8							2
Actuated Green, G (s)		6.5	32.6			21.6	21.6	21.5	21.5			21.5
Effective Green, g (s)		6.5	32.6			21.6	21.6	21.5	21.5			21.5
Actuated g/C Ratio		0.10	0.52			0.34	0.34	0.34	0.34			0.34
Clearance Time (s)		4.5	4.5			4.5	4.5	4.5	4.5			4.5
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)		361	1865			1776	553	584	506			523
v/s Ratio Prot		0.07	0.37			0.30		0.20	0.29			
v/s Ratio Perm							0.18					0.28
v/c Ratio		0.69	0.71			0.89	0.53	0.60	0.85			0.81
Uniform Delay, d1		27.3	11.6			19.6	16.6	17.2	19.3			18.9
Progression Factor		1.00	1.00			1.00	1.00	1.00	1.00			1.00
Incremental Delay, d2		5.4	1.3			5.7	0.9	1.7	12.4			9.0
Delay (s)		32.7	12.9			25.3	17.5	18.9	31.7			28.0
Level of Service		C	B			C	B	B	C			C
Approach Delay (s)		16.0				22.6		26.8				0.0
Approach LOS		B				C		C				A

Intersection Summary			
HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	63.1	Sum of lost time (s)	13.5
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

19: Del Mar Heights Rd & High Bluff Dr

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	78	1013	683	97	1652	61	206	14	6	84	42	337
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.97	0.95	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99	1.00	0.96	1.00	1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1615	1805	5159	3502	3455	1805	1900	1615	1900	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1615	1805	5159	3502	3455	1805	1900	1615	1900	1615
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)	82	1066	719	102	1739	64	217	15	6	88	44	355
RTOR Reduction (vph)	0	0	288	0	4	0	0	5	0	0	0	35
Lane Group Flow (vph)	82	1066	431	102	1799	0	217	16	0	88	44	320
Turn Type	Prot		pm+ov	Prot		Prot		pm+ov		Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4									6
Actuated Green, G (s)	6.3	31.6	42.6	7.6	32.9		11.0	6.2		9.9	5.1	11.4
Effective Green, g (s)	6.3	31.6	42.6	7.6	32.9		11.0	6.2		9.9	5.1	11.4
Actuated g/C Ratio	0.09	0.43	0.58	0.10	0.45		0.15	0.08		0.14	0.07	0.16
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	155	2236	1038	187	2316		526	292		244	132	350
v/s Ratio Prot	0.05	0.21	c0.06	0.06	c0.35		0.06	0.00		0.05	0.02	c0.08
v/s Ratio Perm			0.20									0.12
v/c Ratio	0.53	0.48	0.42	0.55	0.78		0.41	0.05		0.36	0.33	0.92
Uniform Delay, d1	32.1	14.9	8.5	31.2	17.1		28.2	30.9		28.8	32.5	30.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.2	0.2	0.3	3.2	1.7		0.5	0.1		0.9	1.5	27.6
Delay (s)	35.3	15.1	8.7	34.4	18.8		28.8	30.9		29.7	34.0	58.1
Level of Service	D	B	A	C	B		C	C		C	C	E
Approach Delay (s)		13.5			19.6			28.9				50.8
Approach LOS		B			B			C				D

Intersection Summary			
HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	73.3	Sum of lost time (s)	4.5
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

20: Del Mar Heights Rd & El Camino Real

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	224	777	216	195	1455	61	310	164	185	234	487	659
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.91	0.97	0.91	0.97	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Frt	1.00	0.97	1.00	0.99	1.00	0.99	1.00	1.00	0.85	1.00	0.91	0.91
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5018	3502	5156	3502	5156	3502	5187	1615	3502	4740	4740
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5018	3502	5156	3502	5156	3502	5187	1615	3502	4740	4740
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)	236	818	227	205	1532	64	326	173	195	246	513	694
RTOR Reduction (vph)	0	62	0	0	6	0	0	0	24	0	157	0
Lane Group Flow (vph)	236	983	0	205	1590	0	326	173	171	246	1050	0
Turn Type	Prot			Prot		Prot		pm+ov	Prot		pm+ov	Prot
Protected Phases	7	4		3	8		5	2		3	1	6
Permitted Phases												2
Actuated Green, G (s)	7.5	27.2		9.2	28.9		6.9	18.5		27.7	6.5	18.1
Effective Green, g (s)	7.5	27.2		9.2	28.9		6.9	18.5		27.7	6.5	18.1
Actuated g/C Ratio	0.09	0.34		0.12	0.36		0.09	0.23		0.35	0.08	0.23
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	331	1719		406	1877		304	1209		655	287	1081
v/s Ratio Prot	c0.07	0.20		0.06	c0.31		c0.09	0.03		0.03	0.07	c0.22
v/s Ratio Perm										0.08		
v/c Ratio	0.71	0.57		0.50	0.85		1.07	0.14		0.26	0.86	1.32dr
Uniform Delay, d1	34.9	21.3		33.0	23.2		36.3	24.2		18.5	36.0	30.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.1	0.5		1.0	3.8		72.2	0.1		0.2	21.4	20.7
Delay (s)	42.0	21.8		34.0	27.0		108.4	24.2		18.7	57.4	51.1
Level of Service	D	C		C	C		F	C		B	E	D
Approach Delay (s)		25.5			27.8			62.2				52.2
Approach LOS		C			C			E				D

Intersection Summary			
HCM Average Control Delay	38.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	79.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		
dr Defacto Right Lane. Recode with 1 though lane as a right lane.			
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

21: 15th St & Ocean Ave

1/31/2012

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↕	↕	↔	↔
Sign Control	Stop		Stop			Stop
Volume (vph)	16	49	15	5	72	27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	17	52	16	5	76	28
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total (vph)	68	21	104			
Volume Left (vph)	17	0	76			
Volume Right (vph)	52	5	0			
Hadj (s)	-0.40	-0.15	0.15			
Departure Headway (s)	3.8	4.0	4.2			
Degree Utilization, x	0.07	0.02	0.12			
Capacity (veh/h)	921	871	839			
Control Delay (s)	7.1	7.1	7.8			
Approach Delay (s)	7.1	7.1	7.8			
Approach LOS	A	A	A			
Intersection Summary						
Delay			7.5			
HCM Level of Service			A			
Intersection Capacity Utilization			22.6%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

1: Via De La Valle & Camino Del Mar

LT PM

3/10/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕		↕	↕	↕	↕	↕
Volume (vph)	6	99	24	135	87	464	31	685	98	319	324	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00
Fit Protected	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		1895	1615	1805	1900	1615	1805	3610	1615	1805	3610	1615
Fit Permitted		0.99	1.00	0.69	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1872	1615	1304	1900	1615	1805	3610	1615	1805	3610	1615
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)	6	104	25	142	92	488	33	721	103	336	341	7
RTOR Reduction (vph)	0	0	20	0	0	389	0	0	69	0	0	3
Lane Group Flow (vph)	0	110	5	142	92	99	33	721	34	336	341	4
Turn Type		Perm		Perm		Perm		Prot		Perm		Perm
Protected Phases		4			8		5	2		1		6
Permitted Phases	4		4	8		8			2			6
Actuated Green, G (s)		13.1	13.1	13.1	13.1	13.1	2.7	21.2	21.2	16.5	35.0	35.0
Effective Green, g (s)		13.1	13.1	13.1	13.1	13.1	2.7	21.2	21.2	16.5	35.0	35.0
Actuated g/C Ratio		0.20	0.20	0.20	0.20	0.20	0.04	0.33	0.33	0.26	0.54	0.54
Clearance Time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		381	329	266	387	329	76	1190	532	463	1965	879
v/s Ratio Prot				0.05			0.02	c0.20		c0.19	0.09	
v/s Ratio Perm		0.06	0.00	c0.11		0.06			0.02			0.00
v/c Ratio		0.29	0.02	0.53	0.24	0.30	0.43	0.61	0.06	0.73	0.17	0.00
Uniform Delay, d1		21.7	20.4	22.9	21.4	21.7	30.1	18.1	14.8	21.8	7.4	6.7
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.4	0.0	2.1	0.3	0.5	3.9	0.9	0.1	5.6	0.0	0.0
Delay (s)		22.1	20.5	24.9	21.7	22.2	34.0	18.9	14.8	27.4	7.4	6.7
Level of Service		C	C	C	C	C	C	B	B	C	A	A
Approach Delay (s)		21.8			22.7			19.0			17.2	
Approach LOS		C			C			B			B	
Intersection Summary												
HCM Average Control Delay			19.8								B	
HCM Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			64.3						13.5			
Intersection Capacity Utilization			64.5%						ICU Level of Service		C	
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: Via De La Valle & Jimmy Durante Blvd

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔		↔	↔	↔	↔	↔	↔
Volume (vph)	47	570	24	396	668	475	109	181	1051	558	94	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.0	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	1.00	0.88	0.97	1.00	1.00
Frt	1.00	0.99		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3588		3502	3385		1805	1900	2842	3502	1900	1615
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3588		3502	3385		1805	1900	2842	3502	1900	1615
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)	49	600	25	417	703	500	115	191	1106	587	99	91
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	0	73
Lane Group Flow (vph)	49	621	0	417	1203	0	115	191	1106	587	99	18
Turn Type	Prot			Prot			Split		Free	Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases									Free			6
Actuated Green, G (s)	4.5	24.2		12.3	32.0		12.8	12.8	83.5	16.2	16.2	16.2
Effective Green, g (s)	4.5	24.2		12.3	32.0		12.8	12.8	83.5	16.2	16.2	16.2
Actuated g/C Ratio	0.05	0.29		0.15	0.38		0.15	0.15	1.00	0.19	0.19	0.19
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	97	1040		516	1297		277	291	2842	679	369	313
v/s Ratio Prot	0.03	0.17		0.12	0.36		0.06	0.10		0.17	0.05	
v/s Ratio Perm									0.39			0.01
v/c Ratio	0.51	0.60		0.81	0.93		0.42	0.66	0.39	0.86	0.27	0.06
Uniform Delay, d1	38.4	25.5		34.5	24.6		32.0	33.3	0.0	32.6	28.6	27.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.1	0.9		9.0	11.5		1.0	5.3	0.4	11.1	0.4	0.1
Delay (s)	42.5	26.4		43.5	36.1		33.0	38.5	0.4	43.7	29.0	27.5
Level of Service	D	C		D	D		C	D	A	D	C	C
Approach Delay (s)		27.6			38.0			8.2			39.9	
Approach LOS		C			D			A			D	

Intersection Summary			
HCM Average Control Delay	27.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	83.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

3: Via De La Valle & I-5 SB Off-Ramp

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔				↔	↔	↔
Volume (vph)	0	1068	808	0	1474	427	0	0	0	426	0	374
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5	4.5	4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	0.93	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.97	1.00
Satd. Flow (prot)		3610	1615		3610	1615				1715	1570	1534
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.97	1.00
Satd. Flow (perm)		3610	1615		3610	1615				1715	1570	1534
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	1124	851	0	1552	449	0	0	0	448	0	394
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	6	6
Lane Group Flow (vph)	0	1124	851	0	1552	449	0	0	0	291	277	262
Turn Type		Free		Free		Free				Split		Perm
Protected Phases		4		8						6	6	
Permitted Phases			Free			Free						6
Actuated Green, G (s)		20.1	41.7		20.1	41.7				12.6	12.6	12.6
Effective Green, g (s)		20.1	41.7		20.1	41.7				12.6	12.6	12.6
Actuated g/C Ratio		0.48	1.00		0.48	1.00				0.30	0.30	0.30
Clearance Time (s)		4.5		4.5						4.5	4.5	4.5
Vehicle Extension (s)		3.0		3.0						3.0	3.0	3.0
Lane Grp Cap (vph)		1740	1615		1740	1615				518	474	464
v/s Ratio Prot		0.31		0.43						0.17	0.18	
v/s Ratio Perm			0.53			0.28						0.17
v/c Ratio		0.65	0.53		0.89	0.28				0.56	0.58	0.56
Uniform Delay, d1		8.1	0.0		9.8	0.0				12.2	12.3	12.2
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.8	1.2		6.2	0.4				1.4	1.8	1.6
Delay (s)		9.0	1.2		16.1	0.4				13.6	14.2	13.8
Level of Service		A	A		B	A				B	B	B
Approach Delay (s)		5.6			12.5			0.0			13.9	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	41.7	Sum of lost time (s)	4.5
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

4: Via De La Valle & I-5 NB On-Ramp

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑		↑	↑			
Volume (vph)	0	938	504	0	1088	472	912	0	588	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frt		1.00	0.85		1.00	0.85	1.00	0.97	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)		3610	1615		3610	1615	1715	1607	1534			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)		3610	1615		3610	1615	1715	1607	1534			
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	987	531	0	1145	497	960	0	619	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	22	22	0	0	0
Lane Group Flow (vph)	0	987	531	0	1145	497	547	515	473	0	0	0
Turn Type		Free			Free		Perm	Perm				
Protected Phases	4				8			2				
Permitted Phases	Free				Free			2				
Actuated Green, G (s)	16.7	42.9		16.7	42.9	17.2	17.2	17.2				
Effective Green, g (s)	16.7	42.9		16.7	42.9	17.2	17.2	17.2				
Actuated g/C Ratio	0.39	1.00		0.39	1.00	0.40	0.40	0.40				
Clearance Time (s)	4.5			4.5		4.5	4.5	4.5				
Vehicle Extension (s)	3.0			3.0		3.0	3.0	3.0				
Lane Grp Cap (vph)	1405	1615		1405	1615	688	644	615				
v/s Ratio Prot	0.27			c0.32								
v/s Ratio Perm		0.33			0.31	0.32	0.32	0.31				
v/c Ratio	0.70	0.33		0.81	0.31	0.80	0.80	0.77				
Uniform Delay, d1	11.0	0.0		11.7	0.0	11.3	11.3	11.1				
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00				
Incremental Delay, d2	1.6	0.5		3.8	0.5	6.3	7.1	5.8				
Delay (s)	12.6	0.5		15.5	0.5	17.6	18.4	16.9				
Level of Service	B	A		B	A	B	B	B				
Approach Delay (s)	8.4			10.9			17.7			0.0		
Approach LOS	A			B			B			A		

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	42.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

5: Via De La Valle & San Andres Dr

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑↑	↑	↑	↑↑	↑	↑	↑	↑	↑	↑	↑
Volume (vph)	387	897	20	90	1128	159	59	50	66	138	49	196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92	0.92	0.99	0.85	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	0.97	1.00
Satd. Flow (prot)	3502	3610	1615	1805	3610	1615	1715	1655	1722	1534	1722	1534
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	0.97	1.00
Satd. Flow (perm)	3502	3610	1615	1805	3610	1615	1715	1655	1722	1534	1722	1534
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)	407	944	21	95	1187	167	62	53	69	145	52	206
RTOR Reduction (vph)	0	0	7	0	0	106	0	51	0	0	4	154
Lane Group Flow (vph)	407	944	14	95	1187	61	56	77	0	0	214	31
Turn Type	Prot	Perm	Perm	Prot	Perm	Split	Split	Perm			Perm	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	11.6	33.6	33.6	7.5	29.5	29.5	9.2	9.2			14.0	14.0
Effective Green, g (s)	11.6	33.6	33.6	7.5	29.5	29.5	9.2	9.2			14.0	14.0
Actuated g/C Ratio	0.14	0.41	0.41	0.09	0.36	0.36	0.11	0.11			0.17	0.17
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	494	1474	659	164	1294	579	192	185			293	261
v/s Ratio Prot	c0.12	c0.26		0.05	c0.33		0.03	c0.05			c0.12	
v/s Ratio Perm			0.01			0.04						0.02
v/c Ratio	0.82	0.64	0.02	0.58	0.92	0.10	0.29	0.42			0.73	0.12
Uniform Delay, d1	34.4	19.5	14.5	35.9	25.2	17.6	33.6	34.1			32.4	28.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	10.7	1.0	0.0	4.9	10.3	0.1	0.8	1.5			8.8	0.2
Delay (s)	45.1	20.5	14.5	40.8	35.6	17.7	34.4	35.6			41.2	29.1
Level of Service	D	C	B	D	D	B	C	D			D	C
Approach Delay (s)		27.7			33.9		35.2				35.6	
Approach LOS		C			C		D				D	

Intersection Summary			
HCM Average Control Delay	31.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	82.3	Sum of lost time (s)	22.5
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

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 Level Of Service Computation Report
 2000 HCM 4-Way Stop Method (Future Volume Alternative)

 Intersection #6 Camino Del Mar & Coast Blvd

 Cycle (sec): 100 Critical Vol./Cap.(X): 0.660
 Loss Time (sec): 0 Average Delay (sec/veh): 14.5
 Optimal Cycle: 0 Level Of Service: B

 Street Name: Camino Del Mar Coast Blvd
 Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R L - T - R L - T - R

 Control: Stop Sign Stop Sign Stop Sign Stop Sign
 Rights: Include Include Include Include
 Min. Green: 5 5 5 5 5 5 5 5 5 5 5
 Lanes: 1 0 1 0 1 1 0 1 0 0 1 0 0 1 0 0 1 0 0


 Volume Module:
 Base Vol: 16 386 4 12 221 86 100 0 8 6 0 0 4
 Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 Initial Bse: 16 386 4 12 221 86 100 0 8 6 0 0 4
 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 16 386 4 12 221 86 100 0 8 6 0 0 4
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
 PHF Volume: 17 406 4 13 233 91 105 0 8 6 0 0 4
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 17 406 4 13 233 91 105 0 8 6 0 0 4
 PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 Final Volume: 17 406 4 13 233 91 105 0 8 6 0 0 4

 Saturation Flow Module:
 Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 0.60 0.00 0.40
 Final Sat.: 559 615 687 533 581 651 486 0 577 296 0 197

 Capacity Analysis Module:
 Vol/Sat: 0.03 0.66 0.01 0.02 0.40 0.14 0.22 xxxx 0.01 0.02 xxxx 0.02
 Crit Moves: **** **** **** ****
 Delay/Veh: 9.1 18.5 7.8 9.3 12.4 8.8 11.4 0.0 8.5 9.7 0.0 9.7
 Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 AdjDel/Veh: 9.1 18.5 7.8 9.3 12.4 8.8 11.4 0.0 8.5 9.7 0.0 9.7
 LOS by Move: A C A A B A B * A A * A
 ApproachDel: 18.0 11.3 11.2 9.7
 Delay Adj: 1.00 1.00 1.00
 ApprAdjDel: 18.0 11.3 11.2 9.7
 LOS by Appr: C B B A
 AllWayAvgQ: 0.7 42.8 0.1 0.6 15.0 3.7 5.9 5.9 0.3 0.4 0.4 0.4

 Note: Queue reported is the distance per lane in feet.

HCM Unsignalized Intersection Capacity Analysis
 7: 15th St & Stratford Ct

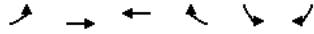


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	↑
Volume (veh/h)	130	12	33	173	38	56
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	137	13	35	182	40	59
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)	311					
pX, platoon unblocked						
vC, conflicting volume			149		395 143	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			149		395 143	
tC, single (s)			4.1		6.4 6.2	
tC, 2 stage (s)						
tF (s)			2.2		3.5 3.3	
p0 queue free %			98		93 94	
cM capacity (veh/h)			1444		599 910	
Direction, Lane #						
	EB 1	WB 1	NB 1			
Volume Total	149	217	99			
Volume Left	0	35	40			
Volume Right	13	0	59			
cSH	1700	1444	752			
Volume to Capacity	0.09	0.02	0.13			
Queue Length 95th (ft)	0	2	11			
Control Delay (s)	0.0	1.4	10.5			
Lane LOS	A		B			
Approach Delay (s)	0.0	1.4	10.5			
Approach LOS	B		B			
Intersection Summary						
Average Delay	2.9					
Intersection Capacity Utilization	34.0%		ICU Level of Service		A	
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

8: 12th St & Stratford Ct

1/31/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	
Volume (veh/h)	39	9	5	5	7	13
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	41	9	5	5	7	14
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	11				99	8
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	11				99	8
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				99	99
cM capacity (veh/h)	1622				881	1080

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	51	11	21
Volume Left	41	0	7
Volume Right	0	5	14
cSH	1622	1700	1001
Volume to Capacity	0.03	0.01	0.02
Queue Length 95th (ft)	2	0	2
Control Delay (s)	5.9	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	5.9	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay		5.9	
Intersection Capacity Utilization	19.3%	ICU Level of Service	A
Analysis Period (min)	15		

5:00 pm 1/25/2012 Existing PM

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HCM Signalized Intersection Capacity Analysis

9: 15th St & Camino Del Mar

LT PM

3/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑	↑		↑	↑	↑	↑	↑
Volume (vph)	75	15	81	62	23	85	115	713	55	59	361	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	0.83	1.00	1.00	0.76	1.00	0.99	1.00		1.00	0.98	
Fpbb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.85	1.00	0.99	1.00		1.00	0.97	
Fit Protected	0.96	1.00	0.95	0.98	1.00	0.95	1.00	0.95		0.95	1.00	
Satd. Flow (prot)	1824	1342	1715	1764	1227	1805	3546	1805		3455	3455	
Fit Permitted	0.96	1.00	0.95	0.98	1.00	0.95	1.00	0.95		0.95	1.00	
Satd. Flow (perm)	1824	1342	1715	1764	1227	1805	3546	1805		3455	3455	
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)	79	16	85	65	24	89	121	751	58	62	380	81
RTOR Reduction (vph)	0	0	77	0	0	81	0	9	0	0	28	0
Lane Group Flow (vph)	0	95	8	44	45	8	121	800	0	62	433	0
Confl. Peds. (#/hr)			52			74			50			50
Turn Type	Split	Split	Perm	Split	Split	Perm	Prot	Prot		Prot	Prot	
Protected Phases	7	7		3	3		5	2		1	6	
Permitted Phases			7			3						
Actuated Green, G (s)		4.9	4.9	4.8	4.8	4.8	6.0	19.6		3.0	16.6	
Effective Green, g (s)		4.9	4.9	4.8	4.8	4.8	6.0	19.6		3.0	16.6	
Actuated g/C Ratio		0.10	0.10	0.10	0.10	0.10	0.12	0.39		0.06	0.33	
Clearance Time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		178	131	164	168	117	215	1382		108	1140	
v/s Ratio Prot		c0.05		c0.03	0.03		c0.07	c0.23		0.03	0.13	
v/s Ratio Perm			0.01			0.01						
v/c Ratio		0.53	0.06	0.27	0.27	0.07	0.56	0.58		0.57	0.38	
Uniform Delay, d1		21.6	20.6	21.1	21.1	20.7	20.9	12.1		23.0	12.9	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.1	0.2	0.9	0.9	0.3	3.3	0.6		7.2	0.2	
Delay (s)		24.7	20.8	22.0	22.0	21.0	24.3	12.7		30.2	13.1	
Level of Service		C	C	C	C	C	C	B		C	B	
Approach Delay (s)		22.9			21.5			14.2			15.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	50.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

5:00 pm 1/25/2012 Existing PM

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Level of Service Computation Report
 2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #10 Camino Del Mar & 13th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.726
 Loss Time (sec): 0 Average Delay (sec/veh): 17.2
 Optimal Cycle: 0 Level Of Service: C

Street Name:	Camino Del Mar			13th St		
Approach:	North Bound	South Bound	East Bound	West Bound		
Movement:	L - T - R	L - T - R	L - T - R	L - T - R		
Control:	Stop Sign	Stop Sign	Stop Sign	Stop Sign		
Rights:	Include	Include	Include	Include		
Min. Green:	5 5 5	5 5 5	5 5 5	5 5 5		
Lanes:	1 0 1 1 0	1 0 1 1 0	0 0 1! 0 0	0 0 1! 0 0		

Volume Module:

	Camino Del Mar			13th St		
	North Bound	South Bound	East Bound	West Bound		
Base Vol:	102 860 15	30 431 27	17 2 72	35 5 13		
Growth Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00		
Initial Bse:	102 860 15	30 431 27	17 2 72	35 5 13		
Added Vol:	0 0 0	0 0 0	0 0 0	0 0 0		
PasserByVol:	0 0 0	0 0 0	0 0 0	0 0 0		
Initial Fut:	102 860 15	30 431 27	17 2 72	35 5 13		
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00		
PHF Adj:	0.95 0.95 0.95	0.95 0.95 0.95	0.95 0.95 0.95	0.95 0.95 0.95		
PHF Volume:	107 905 16	32 454 28	18 2 76	37 5 14		
Reduced Vol:	0 0 0	0 0 0	0 0 0	0 0 0		
Reduced Vol:	107 905 16	32 454 28	18 2 76	37 5 14		
PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00		
MLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00		
Final Volume:	107 905 16	32 454 28	18 2 76	37 5 14		

Saturation Flow Module:

	Camino Del Mar			13th St		
	North Bound	South Bound	East Bound	West Bound		
Adjustment:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00		
Lanes:	1.00 1.97 0.03	1.00 1.88 0.12	0.19 0.02 0.79	0.66 0.09 0.25		
Final Sat.:	579 1247 22	520 1072 68	103 12 438	334 48 124		

Capacity Analysis Module:

	Camino Del Mar			13th St		
	North Bound	South Bound	East Bound	West Bound		
Vol/Sat:	0.19 0.73 0.72	0.06 0.42 0.42	0.17 0.17 0.17	0.11 0.11 0.11		
Crit Moves:	****	****	****	****		
Delay/Veh:	10.2 21.5 21.4	9.8 13.2 13.0	10.4 10.4 10.4	10.5 10.5 10.5		
Delay Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00		
AdjDel/Veh:	10.2 21.5 21.4	9.8 13.2 13.0	10.4 10.4 10.4	10.5 10.5 10.5		
LOS by Move:	B C C	A B B	B B B	B B B		
ApproachDel:	20.4	13.0	10.4	10.5		
Delay Adj:	1.00	1.00	1.00	1.00		
ApprAdjDel:	20.4	13.0	10.4	10.5		
LOS by Appr:	C	B	B	B		
AllWayAvgQ:	5.5 58.5 57.8	1.5 17.1 16.8	4.7 4.7 4.7	2.7 2.7 2.7		

Note: Queue reported is the distance per lane in feet.

HCM Unsignalized Intersection Capacity Analysis
 11: 12th St & Camino Del Mar

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑		↑↑	↑		↑↑	
Volume (veh/h)	0	0	27	0	0	11	0	930	12	0	590	4
Sign Control	Stop			Stop			Free			Free		
Grade	0%			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
Hourly flow rate (vph)	0	0	28	0	0	12	0	979	13	0	621	4
Pedestrians	13			44			57			57		
Lane Width (ft)	12.0			12.0			12.0			12.0		
Walking Speed (ft/s)	4.0			4.0			4.0			4.0		
Percent Blockage	1			4			5			5		
Right turn flare (veh)							None			None		
Median type							None			None		
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1194	1628	370	1362	1617	546	638			992		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1194	1628	370	1362	1617	546	638			992		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	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 %	100	100	95	100	100	98	100			100		
cM capacity (veh/h)	132	102	603	99	103	463	945			705		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2					
Volume Total	28	12	489	489	13	414	211					
Volume Left	0	0	0	0	0	0	0					
Volume Right	28	12	0	0	13	0	4					
cSH	603	463	1700	1700	1700	1700	1700					
Volume to Capacity	0.05	0.02	0.29	0.29	0.01	0.24	0.12					
Queue Length 95th (ft)	4	2	0	0	0	0	0					
Control Delay (s)	11.3	13.0	0.0	0.0	0.0	0.0	0.0					
Lane LOS	B	B										
Approach Delay (s)	11.3	13.0	0.0	0.0								
Approach LOS	B	B										
Intersection Summary												
Average Delay	0.3			ICU Level of Service			A					
Intersection Capacity Utilization	44.5%											
Analysis Period (min)	15											

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #12 Camino Del Mar & 11th St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.758
Loss Time (sec): 0 Average Delay (sec/veh): 19.0
Optimal Cycle: 0 Level Of Service: C

Street Name: Camino Del Mar 11th St
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 5 5 5 5 5 5 5 5 5 5
Lanes: 1 0 1 1 0 1 0 2 0 1 0 0 1 1 0 0 0 0 1 0 0

Volume Module:
Base Vol: 30 904 15 36 576 10 19 2 21 31 3 12
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 30 904 15 36 576 10 19 2 21 31 3 12
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 30 904 15 36 576 10 19 2 21 31 3 12
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 32 952 16 38 606 11 20 2 22 33 3 13
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 32 952 16 38 606 11 20 2 22 33 3 13
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 32 952 16 38 606 11 20 2 22 33 3 13

Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 1.00 1.97 0.03 1.00 2.00 1.00 0.45 0.05 0.50 0.67 0.07 0.26
Final Sat.: 581 1255 21 538 1175 654 239 25 264 347 34 134

Capacity Analysis Module:
Vol/Sat: 0.05 0.76 0.76 0.07 0.52 0.02 0.08 0.08 0.08 0.09 0.09 0.09
Crit Moves: **** *
Delay/Veh: 9.2 23.3 23.2 9.7 14.7 8.1 10.1 10.1 10.1 10.4 10.4 10.4
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 9.2 23.3 23.2 9.7 14.7 8.1 10.1 10.1 10.1 10.4 10.4 10.4
LOS by Move: A C C A B A B B B B B
ApproachDel: 22.9 14.3 10.1 10.4
Delay Adj: 1.00 1.00 1.00 1.00
ApprAdjDel: 22.9 14.3 10.1 10.4
LOS by Appr: C B B B
AllWayAvgQ: 1.4 66.9 66.0 1.8 24.5 0.4 2.1 2.1 2.1 2.4 2.4 2.4

Note: Queue reported is the distance per lane in feet.

HCM Signalized Intersection Capacity Analysis
13: 9th St & Camino Del Mar LT PM 3/10/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Volume (vph)	14	0	22	18	4	9	21	915	17	22	625	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5		4.5		4.5
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.98			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Frt		0.92			0.96		1.00	1.00		1.00	1.00	
Fit Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1650			1726		1796	3600		1805	3596	
Fit Permitted		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1682			1777		1796	3600		1805	3596	
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)	15	0	23	19	4	9	22	963	18	23	658	14
RTOR Reduction (vph)	0	21	0	0	8	0	0	2	0	0	2	0
Lane Group Flow (vph)	0	17	0	0	24	0	22	979	0	23	670	0
Confl. Peds. (#/hr)	57		44	44		57	13					13
Turn Type	Perm		Perm				Prot		Prot			
Protected Phases			4		8		5 2		1 6			
Permitted Phases	4		8									
Actuated Green, G (s)	2.5		2.5				0.7 15.5		0.7 15.5			
Effective Green, g (s)	2.5		2.5				0.7 15.5		0.7 15.5			
Actuated g/C Ratio	0.08		0.08				0.02 0.48		0.02 0.48			
Clearance Time (s)	4.5		4.5				4.5 4.5		4.5 4.5			
Vehicle Extension (s)	3.0		3.0				3.0 3.0		3.0 3.0			
Lane Grp Cap (vph)	131		138				39 1733		39 1731			
v/s Ratio Prot							0.01 c0.27		c0.01 0.19			
v/s Ratio Perm	0.01		c0.01									
v/c Ratio	0.13		0.17				0.56 0.57		0.59 0.39			
Uniform Delay, d1	13.8		13.9				15.6 5.9		15.6 5.3			
Progression Factor	1.00		1.00				1.00 1.00		1.00 1.00			
Incremental Delay, d2	0.4		0.6				17.3 0.4		20.8 0.1			
Delay (s)	14.3		14.5				32.9 6.4		36.4 5.5			
Level of Service	B		B				C A		D A			
Approach Delay (s)	14.3		14.5				7.0		6.5			
Approach LOS	B		B				A		A			
Intersection Summary												
HCM Average Control Delay	7.1		HCM Level of Service				A					
HCM Volume to Capacity ratio	0.51											
Actuated Cycle Length (s)	32.2		Sum of lost time (s)				13.5					
Intersection Capacity Utilization	45.3%		ICU Level of Service				A					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
14: Del Mar Heights Rd & Camino Del Mar

LT PM
3/10/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗	↖	↖	↗	↘	↖	↗	↘
Volume (vph)	10	58	21	114	143	487	58	584	438	415	261	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	1.00	0.99
Flt Protected	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1886	1615	1715	1798	1615	1805	3610	1615	1805	3589		
Flt Permitted	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1886	1615	1715	1798	1615	1805	3610	1615	1805	3589		
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)	11	61	22	120	151	513	61	615	461	437	275	11
RTOR Reduction (vph)	0	0	21	0	0	131	0	0	270	0	4	0
Lane Group Flow (vph)	0	72	1	108	163	382	61	615	191	437	282	0
Turn Type	Split	Perm	Split	pm+ov	Prot	Perm	Prot					
Protected Phases	7	7	3	3	1	5	2			1	6	
Permitted Phases			7	3			2					
Actuated Green, G (s)		3.5	3.5	8.7	8.7	27.9	3.6	17.6	17.6	19.2	33.2	
Effective Green, g (s)		3.5	3.5	8.7	8.7	27.9	3.6	17.6	17.6	19.2	33.2	
Actuated g/C Ratio		0.05	0.05	0.13	0.13	0.42	0.05	0.26	0.26	0.29	0.50	
Clearance Time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		99	84	223	233	673	97	948	424	517	1778	
v/s Ratio Prot		c0.04		0.06	c0.09	0.16	0.03	c0.17		c0.24	0.08	
v/s Ratio Perm			0.00		0.07			0.12				
v/c Ratio		0.73	0.01	0.48	0.70	0.57	0.65	0.45	0.85	0.16		
Uniform Delay, d1		31.3	30.1	27.1	27.9	14.9	31.0	22.0	20.7	22.5	9.3	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		23.2	0.1	1.7	8.8	1.1	12.1	1.5	0.8	12.1	0.0	
Delay (s)		54.4	30.2	28.7	36.7	16.0	43.1	23.5	21.4	34.6	9.3	
Level of Service		D	C	C	D	B	D	C	C	C	A	
Approach Delay (s)		48.8			22.1			23.7			24.6	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
15: Carmel Valley Rd & Camino Del Mar

LT PM
3/10/2012

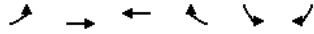
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↖	↗
Volume (vph)	153	164	964	352	135	226
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1615	1900	1615	1805	1900
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1615	1900	1615	1805	1900
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	161	173	1015	371	142	238
RTOR Reduction (vph)	0	146	0	99	0	0
Lane Group Flow (vph)	161	27	1015	272	142	238
Turn Type	Perm	Perm	Perm	Prot		
Protected Phases	8		2	1	6	
Permitted Phases		8	2			
Actuated Green, G (s)	11.8	11.8	43.1	43.1	7.5	55.1
Effective Green, g (s)	11.8	11.8	43.1	43.1	7.5	55.1
Actuated g/C Ratio	0.16	0.16	0.57	0.57	0.10	0.73
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	281	251	1079	917	178	1379
v/s Ratio Prot	c0.09		c0.53		c0.08	0.13
v/s Ratio Perm		0.02	0.17			
v/c Ratio	0.57	0.11	0.94	0.30	0.80	0.17
Uniform Delay, d1	29.7	27.5	15.2	8.5	33.5	3.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8	0.2	15.2	0.2	21.5	0.1
Delay (s)	32.5	27.7	30.4	8.7	54.9	3.3
Level of Service	C	C	C	A	D	A
Approach Delay (s)	30.0		24.6			22.6
Approach LOS	C		C			C

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	75.9	Sum of lost time (s)	13.5
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

16: Del Mar Heights Rd & Crest Way

1/31/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕↕	↕↕	↕	↕↕	↕
Volume (vph)	3	548	902	85	136	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1805	3610	3610	1615	1806	
Flt Permitted	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1805	3610	3610	1615	1806	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	577	949	89	143	3
RTOR Reduction (vph)	0	0	0	52	2	0
Lane Group Flow (vph)	3	577	949	37	144	0
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	0.5	19.5	14.5	14.5	6.2	
Effective Green, g (s)	0.5	19.5	14.5	14.5	6.2	
Actuated g/C Ratio	0.01	0.56	0.42	0.42	0.18	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	26	2029	1509	675	323	
v/s Ratio Prot	0.00	c0.16	c0.26		c0.08	
v/s Ratio Perm				0.02		
v/c Ratio	0.12	0.28	0.63	0.06	0.45	
Uniform Delay, d1	16.9	4.0	8.0	6.0	12.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.0	0.1	0.8	0.0	1.0	
Delay (s)	18.9	4.0	8.8	6.1	13.7	
Level of Service	B	A	A	A	B	
Approach Delay (s)		4.1	8.6		13.7	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	7.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	34.7	Sum of lost time (s)	13.5
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

17: Del Mar Heights Rd & I-5 SB Off-Ramp

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕	↕		↕↕	↕				↕	↕↕	↕
Volume (vph)	0	826	374	0	972	558	0	0	0	881	0	259
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5	4.5	4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	0.99	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)		3610	1615		3610	1615				1715	1637	1534
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)		3610	1615		3610	1615				1715	1637	1534
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	869	394	0	1023	587	0	0	0	927	0	273
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	5	15
Lane Group Flow (vph)	0	869	394	0	1023	587	0	0	0	482	467	231
Turn Type		Free			Free					Split		Perm
Protected Phases		4			8					1		1
Permitted Phases			Free			Free						1
Actuated Green, G (s)		15.3	40.7		15.3	40.7				16.4	16.4	16.4
Effective Green, g (s)		15.3	40.7		15.3	40.7				16.4	16.4	16.4
Actuated g/C Ratio		0.38	1.00		0.38	1.00				0.40	0.40	0.40
Clearance Time (s)		4.5			4.5					4.5	4.5	4.5
Vehicle Extension (s)		3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1357	1615		1357	1615				691	660	618
v/s Ratio Prot		0.24			c0.28					0.28	c0.29	
v/s Ratio Perm			0.24			0.36						0.15
v/c Ratio		0.64	0.24		0.75	0.36				0.70	0.71	0.37
Uniform Delay, d1		10.4	0.0		11.1	0.0				10.1	10.1	8.5
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		1.0	0.4		2.4	0.6				3.1	3.5	0.4
Delay (s)		11.5	0.4		13.5	0.6				13.2	13.6	8.9
Level of Service		B	A		B	A				B	B	A
Approach Delay (s)		8.0			8.8			0.0				12.5
Approach LOS		A			A			A				B

Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	40.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

18: Del Mar Heights Rd & I-5 NB On-Ramp

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔			↔	↔	↔	↔	↔			
Volume (vph)	188	1555	0	0	1029	588	541	0	602	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.91	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98	1.00			
Satd. Flow (prot)	3502	3610			5187	1615	1715	1537	1534			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.98	1.00			
Satd. Flow (perm)	3502	3610			5187	1615	1715	1537	1534			
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)	198	1637	0	0	1083	619	569	0	634	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	410	0	9	9	0	0	0
Lane Group Flow (vph)	198	1637	0	0	1083	209	421	393	371	0	0	0
Turn Type	Prot				Perm		Split		Perm			
Protected Phases	7	4			8		2	2				
Permitted Phases					8				2			
Actuated Green, G (s)	5.6	29.3			19.2	19.2	18.5	18.5	18.5			
Effective Green, g (s)	5.6	29.3			19.2	19.2	18.5	18.5	18.5			
Actuated g/C Ratio	0.10	0.52			0.34	0.34	0.33	0.33	0.33			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	345	1862			1753	546	559	501	500			
v/s Ratio Prot	0.06	c0.45			0.21		0.25	c0.26				
v/s Ratio Perm						0.13			0.24			
v/c Ratio	0.57	0.88			0.62	0.38	0.75	0.78	0.74			
Uniform Delay, d1	24.5	12.2			15.7	14.3	17.1	17.3	17.0			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	2.3	5.1			0.7	0.4	5.7	7.9	5.9			
Delay (s)	26.8	17.3			16.4	14.7	22.8	25.3	22.9			
Level of Service	C	B			B	B	C	C	C			
Approach Delay (s)		18.3			15.8			23.7		0.0		
Approach LOS		B			B			C		A		
Intersection Summary												
HCM Average Control Delay		18.8			HCM Level of Service				B			
HCM Volume to Capacity ratio		0.84										
Actuated Cycle Length (s)		56.8			Sum of lost time (s)				9.0			
Intersection Capacity Utilization		75.3%			ICU Level of Service				D			
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

19: Del Mar Heights Rd & High Bluff Dr

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	209	1551	187	17	973	51	735	103	199	52	41	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.97	0.95	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99	1.00	0.90	1.00	0.90	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1615	1805	5148	3502	3253	1805	1900	1615	1900	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1615	1805	5148	3502	3253	1805	1900	1615	1900	1615
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)	220	1633	197	18	1024	54	774	108	209	55	43	166
RTOR Reduction (vph)	0	0	61	0	6	0	0	139	0	0	0	4
Lane Group Flow (vph)	220	1633	136	18	1072	0	774	178	0	55	43	162
Turn Type	Prot		pm+ov	Prot		Prot		Prot		Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4									6
Actuated Green, G (s)	12.8	35.1	53.6	1.4	23.7		18.5	19.2		3.7	4.4	17.2
Effective Green, g (s)	12.8	35.1	53.6	1.4	23.7		18.5	19.2		3.7	4.4	17.2
Actuated g/C Ratio	0.17	0.45	0.69	0.02	0.31		0.24	0.25		0.05	0.06	0.22
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	299	2352	1212	33	1576		837	807		86	108	453
v/s Ratio Prot	c0.12	c0.31	0.03	0.01	0.21		c0.22	0.05		0.03	0.02	c0.06
v/s Ratio Perm					0.06							0.04
v/c Ratio	0.74	0.69	0.11	0.55	0.68		0.92	0.22		0.64	0.40	0.36
Uniform Delay, d1	30.7	16.9	4.0	37.7	23.5		28.8	23.1		36.2	35.2	25.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	9.1	0.9	0.0	17.2	1.2		15.7	0.1		14.6	2.4	0.5
Delay (s)	39.8	17.8	4.0	54.8	24.8		44.5	23.3		50.8	37.6	25.9
Level of Service	D	B	A	D	C		D	C		D	D	C
Approach Delay (s)		18.8			25.2		38.3				33.0	
Approach LOS		B			C		D				C	
Intersection Summary												
HCM Average Control Delay		25.9			HCM Level of Service				C			
HCM Volume to Capacity ratio		0.74										
Actuated Cycle Length (s)		77.4			Sum of lost time (s)				13.5			
Intersection Capacity Utilization		72.6%			ICU Level of Service				C			
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

20: Del Mar Heights Rd & El Camino Real

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑		↑↑↑	↑↑		↑↑↑	↑↑↑		↑	↑↑		↑↑↑
Volume (vph)	423	1258	301	100	618	150	447	561	326	246	234	259
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.91	1.00	0.97	0.91	
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3502	5037		3502	5035		3502	5187	1615	3502	4778	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3502	5037		3502	5035		3502	5187	1615	3502	4778	
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)	445	1324	317	105	651	158	471	591	343	259	246	273
RTOR Reduction (vph)	0	49	0	0	50	0	0	0	13	0	225	0
Lane Group Flow (vph)	445	1592	0	105	759	0	471	591	330	259	294	0
Turn Type	Prot		Prot		Prot		pm+ov		Prot		Prot	
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	2											
Actuated Green, G (s)	13.5	28.9		4.7	20.1		9.6	14.1	18.8	8.5	13.0	
Effective Green, g (s)	13.5	28.9		4.7	20.1		9.6	14.1	18.8	8.5	13.0	
Actuated g/C Ratio	0.18	0.39		0.06	0.27		0.13	0.19	0.25	0.11	0.18	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	637	1962		222	1364		453	986	507	401	837	
v/s Ratio Prot	c0.13	c0.32		0.03	0.15		c0.13	0.11	c0.04	0.07	0.06	
v/s Ratio Perm	0.16											
v/c Ratio	0.70	0.81		0.47	0.56		1.04	0.60	0.65	0.65	0.35	
Uniform Delay, d1	28.4	20.2		33.6	23.2		32.3	27.5	24.8	31.4	26.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.3	2.7		1.6	0.5		53.0	1.0	3.0	3.6	0.3	
Delay (s)	31.8	22.9		35.1	23.7		85.3	28.5	27.7	35.0	27.1	
Level of Service	C	C		D	C		F	C	C	C	C	
Approach Delay (s)	24.8		25.0		47.3		29.8					
Approach LOS	C		C		D		C					
Intersection Summary												
HCM Average Control Delay	31.7		HCM Level of Service				C					
HCM Volume to Capacity ratio	0.80											
Actuated Cycle Length (s)	74.2				Sum of lost time (s)				13.5			
Intersection Capacity Utilization	72.4%		ICU Level of Service				C					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

21: 15th St & Ocean Ave

1/31/2012

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑↑		↑		↑	
Sign Control	Stop		Stop		Stop	
Volume (vph)	60	166	28	2	87	24
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	63	175	29	2	92	25
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total (vph)	238	32	117			
Volume Left (vph)	63	0	92			
Volume Right (vph)	175	2	0			
Hadj (s)	-0.39	-0.04	0.16			
Departure Headway (s)	3.9	4.5	4.6			
Degree Utilization, x	0.26	0.04	0.15			
Capacity (veh/h)	900	748	737			
Control Delay (s)	8.2	7.7	8.4			
Approach Delay (s)	8.2	7.7	8.4			
Approach LOS	A	A	A			
Intersection Summary						
Delay			8.2			
HCM Level of Service	A					
Intersection Capacity Utilization	33.0%		ICU Level of Service		A	
Analysis Period (min)	15					

APPENDIX J

**PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS
LONG TERM CONDITIONS WITH PROJECT WITH NO CIRCULATION CHANGES**

HCM Signalized Intersection Capacity Analysis
1: Via De La Valle & Camino Del Mar

LT+P AM NB
3/10/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗	↗	↖	↗	↖	↗	↖	↗
Volume (vph)	1	94	27	97	116	182	20	165	86	498	498	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00
Flt Protected	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1899	1615	1805	1900	1615	1805	3610	1615	1805	3610	1615	1615
Flt Permitted	1.00	1.00	0.69	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1894	1615	1315	1900	1615	1805	3610	1615	1805	3610	1615	1615
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)	1	99	28	102	122	192	21	174	91	524	524	18
RTOR Reduction (vph)	0	0	23	0	0	159	0	0	72	0	0	8
Lane Group Flow (vph)	0	100	5	102	122	33	21	174	19	524	524	10
Turn Type	Perm	Perm	Perm	Perm	Perm	Prot	Perm	Prot	Perm	Prot	Perm	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Actuated Green, G (s)		9.8	9.8	9.8	9.8	9.8	1.3	12.0	12.0	21.4	32.1	32.1
Effective Green, g (s)		9.8	9.8	9.8	9.8	9.8	1.3	12.0	12.0	21.4	32.1	32.1
Actuated g/C Ratio		0.17	0.17	0.17	0.17	0.17	0.02	0.21	0.21	0.38	0.57	0.57
Clearance Time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		327	279	227	328	279	41	764	342	681	2044	914
v/s Ratio Prot					0.06		0.01	0.05		c0.29	c0.15	
v/s Ratio Perm		0.05	0.00	c0.08		0.02			0.01			0.01
v/c Ratio		0.31	0.02	0.45	0.37	0.12	0.51	0.23	0.06	0.77	0.26	0.01
Uniform Delay, d1		20.5	19.5	21.0	20.7	19.8	27.4	18.5	17.8	15.5	6.2	5.4
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.5	0.0	1.4	0.7	0.2	10.4	0.2	0.1	5.2	0.1	0.0
Delay (s)		21.0	19.5	22.4	21.4	20.0	37.8	18.7	17.9	20.7	6.3	5.4
Level of Service		C	B	C	C	B	D	B	B	C	A	A
Approach Delay (s)		20.7			21.0			19.8			13.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	56.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2: Via De La Valle & Jimmy Durante Blvd

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗	↗	↖	↗	↖	↗	↖	↗
Volume (vph)	47	785	30	798	654	390	29	92	322	556	142	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	0.97	0.95	1.00	1.00	1.00	0.88	0.97	1.00	1.00	1.00
Frt	1.00	0.99	1.00	0.94	1.00	1.00	1.00	0.85	1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1805	3590	3502	3407	1805	1900	2842	3502	1900	1615	1615	1615
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3590	3502	3407	1805	1900	2842	3502	1900	1615	1615	1615
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)	49	826	32	840	688	411	31	97	339	585	149	45
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	0	36
Lane Group Flow (vph)	49	855	0	840	1099	0	31	97	339	585	149	9
Turn Type	Prot	Prot	Prot	Prot	Prot	Split	Split	Free	Split	Split	Perm	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases									Free		6	6
Actuated Green, G (s)	5.1	22.7		18.7	36.3		8.0	8.0	83.4	16.0	16.0	16.0
Effective Green, g (s)	5.1	22.7		18.7	36.3		8.0	8.0	83.4	16.0	16.0	16.0
Actuated g/C Ratio	0.06	0.27		0.22	0.44		0.10	0.10	1.00	0.19	0.19	0.19
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	110	977		785	1483		173	182	2842	672	365	310
v/s Ratio Prot	0.03	c0.24		c0.24	0.32		0.02	c0.05		c0.17	0.08	
v/s Ratio Perm									0.12			0.01
v/c Ratio	0.45	0.88		1.07	0.74		0.18	0.53	0.12	0.87	0.41	0.03
Uniform Delay, d1	37.8	29.0		32.4	19.6		34.7	35.9	0.0	32.7	29.5	27.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9	8.8		52.5	2.0		0.5	3.0	0.1	11.9	0.7	0.0
Delay (s)	40.6	37.8		84.9	21.7		35.2	38.9	0.1	44.5	30.3	27.4
Level of Service	D	D		F	C		D	D	A	D	C	C
Approach Delay (s)		38.0			49.1			10.5			40.8	
Approach LOS		D			D			B			D	

Intersection Summary			
HCM Average Control Delay	40.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	83.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

3: Via De La Valle & I-5 SB Off-Ramp

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑				↓	↓	↓
Volume (vph)	0	769	1116	0	1359	712	0	0	0	218	0	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5	4.5	4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	0.92	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.98	1.00
Satd. Flow (prot)		3610	1615		3610	1615				1715	1551	1534
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.98	1.00
Satd. Flow (perm)		3610	1615		3610	1615				1715	1551	1534
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	809	1175	0	1431	749	0	0	0	229	0	233
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	10	10	10
Lane Group Flow (vph)	0	809	1175	0	1431	749	0	0	0	160	145	137
Turn Type		Free			Free					Split	Perm	
Protected Phases		4			8					6	6	
Permitted Phases		Free			Free						6	
Actuated Green, G (s)		19.0	35.2		19.0	35.2				7.2	7.2	7.2
Effective Green, g (s)		19.0	35.2		19.0	35.2				7.2	7.2	7.2
Actuated g/C Ratio		0.54	1.00		0.54	1.00				0.20	0.20	0.20
Clearance Time (s)		4.5			4.5					4.5	4.5	4.5
Vehicle Extension (s)		3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1949	1615		1949	1615				351	317	314
v/s Ratio Prot		0.22			0.40					0.09	0.09	
v/s Ratio Perm		c0.73			0.46							0.09
v/c Ratio		0.42	0.73		0.73	0.46				0.46	0.46	0.44
Uniform Delay, d1		4.8	0.0		6.2	0.0				12.3	12.3	12.2
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.1	2.9		1.5	1.0				0.9	1.1	1.0
Delay (s)		4.9	2.9		7.6	1.0				13.2	13.3	13.2
Level of Service		A			A					B	B	B
Approach Delay (s)		3.7			5.3			0.0		13.3		
Approach LOS		A			A			A		B		
Intersection Summary												
HCM Average Control Delay		5.4			HCM Level of Service			A				
HCM Volume to Capacity ratio		0.73										
Actuated Cycle Length (s)		35.2			Sum of lost time (s)			0.0				
Intersection Capacity Utilization		54.2%			ICU Level of Service			A				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Via De La Valle & I-5 NB On-Ramp

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑				↓	↓	↓
Volume (vph)	0	649	340	0	1251	481	821	0	544	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95	0.95	0.96	0.95
Frt		1.00	0.85		1.00	0.85	1.00	0.96	0.85	1.00	0.96	0.85
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.96	1.00	1.00	0.96	1.00
Satd. Flow (prot)		3610	1615		3610	1615	1715	1605	1534	1715	1605	1534
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.96	1.00	0.95	0.96	1.00
Satd. Flow (perm)		3610	1615		3610	1615	1715	1605	1534	1715	1605	1534
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	683	358	0	1317	506	864	0	573	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	27	66	0	0	0
Lane Group Flow (vph)	0	683	358	0	1317	506	492	465	387	0	0	0
Turn Type		Free			Free		Perm	Perm				
Protected Phases		4			8			2	2			
Permitted Phases		Free			Free			2	2			
Actuated Green, G (s)		17.6	43.3		17.6	43.3	16.7	16.7	16.7			
Effective Green, g (s)		17.6	43.3		17.6	43.3	16.7	16.7	16.7			
Actuated g/C Ratio		0.41	1.00		0.41	1.00	0.39	0.39	0.39			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)		1467	1615		1467	1615	661	619	592			
v/s Ratio Prot		0.19			c0.36							
v/s Ratio Perm		0.22			0.31		0.29	0.29	0.25			
v/c Ratio		0.47	0.22		0.90	0.31	0.74	0.75	0.65			
Uniform Delay, d1		9.4	0.0		12.0	0.0	11.5	11.5	10.9			
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.2	0.3		7.6	0.5	4.5	5.1	2.6			
Delay (s)		9.6	0.3		19.6	0.5	16.0	16.6	13.5			
Level of Service		A			B		A	B	B			
Approach Delay (s)		6.4			14.3			15.4		0.0		
Approach LOS		A			B			B		A		
Intersection Summary												
HCM Average Control Delay		12.8			HCM Level of Service			B				
HCM Volume to Capacity ratio		0.83										
Actuated Cycle Length (s)		43.3			Sum of lost time (s)			9.0				
Intersection Capacity Utilization		70.4%			ICU Level of Service			C				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Via De La Valle & San Andres Dr

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑↑	↑	↑	↑↑	↑↑	↑	↑	↑	↑	↑	↑
Volume (vph)	180	660	23	110	1186	137	33	9	28	105	47	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.95	0.95			0.95	0.95
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90			0.95	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	1.00
Satd. Flow (prot)	3502	3610	1615	1805	3610	1615	1715	1610			1675	1534
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	1.00
Satd. Flow (perm)	3502	3610	1615	1805	3610	1615	1715	1610			1675	1534
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)	189	695	24	116	1248	144	35	9	29	111	49	305
RTOR Reduction (vph)	0	0	10	0	0	83	0	27	0	0	20	181
Lane Group Flow (vph)	189	695	14	116	1248	61	31	15	0	0	222	42
Turn Type	Prot	Perm	Perm	Prot	Perm	Split	Split	Perm	Split	Split	Perm	Perm
Protected Phases	7	4		3	8	2	2		6	6		
Permitted Phases			4		8							6
Actuated Green, G (s)	6.7	31.3	31.3	7.2	31.8	31.8	4.1	4.1			13.9	13.9
Effective Green, g (s)	6.7	31.3	31.3	7.2	31.8	31.8	4.1	4.1			13.9	13.9
Actuated g/C Ratio	0.09	0.42	0.42	0.10	0.43	0.43	0.06	0.06			0.19	0.19
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	315	1517	679	174	1541	689	94	89			313	286
v/s Ratio Prot	0.05	0.19		c0.06	c0.35		c0.02	0.01			c0.13	
v/s Ratio Perm			0.01		0.04							0.03
v/c Ratio	0.60	0.46	0.02	0.67	0.81	0.09	0.33	0.16			0.71	0.15
Uniform Delay, d1	32.6	15.5	12.6	32.5	18.7	12.7	33.9	33.6			28.4	25.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	3.2	0.2	0.0	9.3	3.3	0.1	2.1	0.9			7.1	0.2
Delay (s)	35.8	15.7	12.6	41.8	22.0	12.8	35.9	34.4			35.5	25.6
Level of Service	D	B	B	D	C	B	D	C			D	C
Approach Delay (s)		19.8			22.6		35.1				30.8	
Approach LOS		B			C		D				C	

Intersection Summary			
HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	74.5	Sum of lost time (s)	13.5
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

5:00 pm 1/26/2012 Ex AM + P NB

Synchro 7 - Report
Page 5

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With Proj NB

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #6 Camino Del Mar & Coast Blvd

Cycle (sec): 100 Critical Vol./Cap.(X): 0.845
Loss Time (sec): 0 Average Delay (sec/veh): 22.2
Optimal Cycle: 0 Level Of Service: C

Street Name: Camino Del Mar Coast Blvd
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 5 5 5 5 5 5 5 5 5 5 5 5
Lanes: 1 0 1 0 1 1 0 1 0 1 0 1 0 0 1 0 0 1 0 0

Volume Module:
Base Vol: 9 149 5 7 526 70 49 1 9 10 1 5
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 9 149 5 7 526 70 49 1 9 10 1 5
Added Vol: 0 20 0 0 15 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 9 169 5 7 541 70 49 1 9 10 1 5
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 9 178 5 7 569 74 52 1 9 11 1 5
Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 9 178 5 7 569 74 52 1 9 11 1 5
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 9 178 5 7 569 74 52 1 9 11 1 5

Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 0.98 0.02 1.00 0.63 0.06 0.31
Final Sat.: 518 559 626 610 674 765 474 10 575 320 32 160

Capacity Analysis Module:
Vol/Sat: 0.02 0.32 0.01 0.01 0.84 0.10 0.11 0.11 0.02 0.03 0.03 0.03
Crit Moves: **** **** ****
Delay/Veh: 9.5 11.5 8.2 8.6 29.5 7.8 10.6 10.6 8.7 9.8 9.8 9.8
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 9.5 11.5 8.2 8.6 29.5 7.8 10.6 10.6 8.7 9.8 9.8 9.8
LOS by Move: A B A A D A B A A A A
ApproachDel: 11.3 26.8 10.3 9.8
Delay Adj: 1.00 1.00 1.00 1.00
ApprAdjDel: 11.3 26.8 10.3 9.8
LOS by Appr: B D B A
AllWayAvgQ: 0.4 10.4 0.2 0.3 101 2.6 2.7 2.7 0.4 0.8 0.8 0.8

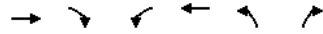
Note: Queue reported is the distance per lane in feet.

Traffic 8.0.0715 (c) 2008 Dowling Assoc. Licensed to KOA CORP, MONTEREY PK

HCM Unsignalized Intersection Capacity Analysis

7: 15th St & Stratford Ct

1/31/2012



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Volume (veh/h)	124	32	22	111	24	17
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	131	34	23	117	25	18
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				311		
pX, platoon unblocked						
vC, conflicting volume			164		311	147
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			164		311	147
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		96	98
cM capacity (veh/h)			1426		675	905

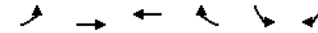
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	164	140	43
Volume Left	0	23	25
Volume Right	34	0	18
cSH	1700	1426	754
Volume to Capacity	0.10	0.02	0.06
Queue Length 95th (ft)	0	1	5
Control Delay (s)	0.0	1.4	10.1
Lane LOS		A	B
Approach Delay (s)	0.0	1.4	10.1
Approach LOS			B

Intersection Summary			
Average Delay		1.8	
Intersection Capacity Utilization	28.9%		ICU Level of Service A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

8: 12th St & Stratford Ct

1/31/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Volume (veh/h)	15	13	4	7	10	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	16	14	4	7	11	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	12				53	8
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	12				53	8
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				99	99
cM capacity (veh/h)	1621				951	1080

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	29	12	18
Volume Left	16	0	11
Volume Right	0	7	7
cSH	1621	1700	1000
Volume to Capacity	0.01	0.01	0.02
Queue Length 95th (ft)	1	0	1
Control Delay (s)	3.9	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	3.9	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay		4.6	
Intersection Capacity Utilization	18.2%		ICU Level of Service A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
 9: 15th St & Camino Del Mar

LT+P AM NB
 3/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	
Volume (vph)	29	14	87	40	12	70	86	337	54	96	732	44	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	0.95	
Frbp, ped/bikes	1.00	0.88	1.00	1.00	0.89	1.00	0.98	1.00	1.00	1.00	1.00	1.00	
Fipb, ped/bikes	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	1.00	0.85	1.00	1.00	0.85	1.00	0.98	1.00	0.99	1.00	0.99	1.00	
Fit Protected	0.97	1.00	0.95	0.97	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1838	1419	1715	1758	1444	1805	3465	1805	3564	1805	3564	1805	
Fit Permitted	0.97	1.00	0.95	0.97	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1838	1419	1715	1758	1444	1805	3465	1805	3564	1805	3564	1805	
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)	31	15	92	42	13	74	91	355	57	101	771	46	
RTOR Reduction (vph)	0	0	83	0	0	67	0	17	0	0	6	0	
Lane Group Flow (vph)	0	46	9	27	28	7	91	395	0	101	811	0	
Confl. Peds. (#/hr)			36			29			78			37	
Turn Type	Split	Perm	Split	Perm	Prot	Prot							
Protected Phases	7	7		3	3		5	2		1	6		
Permitted Phases			7			3							
Actuated Green, G (s)	5.0	5.0	4.7	4.7	4.7	5.9	17.9			6.1	18.1		
Effective Green, g (s)	5.0	5.0	4.7	4.7	4.7	5.9	17.9			6.1	18.1		
Actuated g/C Ratio	0.10	0.10	0.09	0.09	0.09	0.11	0.35			0.12	0.35		
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0		
Lane Grp Cap (vph)	178	137	156	160	131	206	1200			213	1248		
v/s Ratio Prot	c0.03		0.02	c0.02		0.05	0.11			c0.06	c0.23		
v/s Ratio Perm		0.01			0.00								
v/c Ratio	0.26	0.06	0.17	0.18	0.05	0.44	0.33			0.47	0.65		
Uniform Delay, d1	21.6	21.2	21.7	21.7	21.5	21.4	12.5			21.3	14.1		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00		
Incremental Delay, d2	0.8	0.2	0.5	0.5	0.2	1.5	0.2			1.7	1.2		
Delay (s)	22.4	21.4	22.2	22.2	21.6	22.9	12.6			23.0	15.3		
Level of Service	C	C	C	C	C	C	B			C	B		
Approach Delay (s)	21.8			21.9			14.5				16.2		
Approach LOS	C			C			B				B		
Intersection Summary													
HCM Average Control Delay	16.6		HCM Level of Service					B					
HCM Volume to Capacity ratio	0.44												
Actuated Cycle Length (s)	51.7					Sum of lost time (s)			13.5				
Intersection Capacity Utilization	54.5%		ICU Level of Service					A					
Analysis Period (min)	15												
c Critical Lane Group													

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 With Proj NB

Level Of Service Computation Report
 2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #10 Camino Del Mar & 13th St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.713
 Loss Time (sec): 0 Average Delay (sec/veh): 16.8
 Optimal Cycle: 0 Level Of Service: C

Street Name: Camino Del Mar 13th St
 Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R L - T - R L - T - R
 -----|-----|-----|-----|

Control: Stop Sign Stop Sign Stop Sign Stop Sign
 Rights: Include Include Include Include
 Min. Green: 5 5 5 5 5 5 5 5 5 5 5 5
 Lanes: 1 0 1 1 0 1 0 1 1 0 0 0 1! 0 0 0 0 1! 0 0
 -----|-----|-----|-----|

Volume Module:
 Base Vol: 100 438 16 42 827 22 23 0 46 49 2 18
 Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 Initial Bse: 100 438 16 42 827 22 23 0 46 49 2 18
 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 100 438 16 42 827 22 23 0 46 49 2 18
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
 PHF Volume: 105 461 17 44 871 23 24 0 48 52 2 19
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 105 461 17 44 871 23 24 0 48 52 2 19
 PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 FinalVolume: 105 461 17 44 871 23 24 0 48 52 2 19
 -----|-----|-----|-----|

Saturation Flow Module:
 Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 Lanes: 1.00 1.93 0.07 1.00 1.95 0.05 0.33 0.00 0.67 0.71 0.03 0.26
 Final Sat.: 530 1113 41 571 1221 33 178 0 356 363 15 134
 -----|-----|-----|-----|

Capacity Analysis Module:
 Vol/Sat: 0.20 0.41 0.41 0.08 0.71 0.71 0.14 xxxx 0.14 0.14 0.14 0.14
 Crit Moves: **** *
 Delay/Veh: 10.9 12.9 12.8 9.4 21.1 20.9 10.3 0.0 10.3 10.7 10.7 10.7
 Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 AdjDel/Veh: 10.9 12.9 12.8 9.4 21.1 20.9 10.3 0.0 10.3 10.7 10.7 10.7
 LOS by Move: B B B A C C B * B B B B
 ApproachDel: 12.5 20.5 10.3 10.7
 Delay Adj: 1.00 1.00 1.00 1.00
 ApprAdjDel: 12.5 20.5 10.3 10.7
 LOS by Appr: B C B B
 AllWayAvgQ: 5.8 16.5 16.2 2.0 55.5 54.5 3.5 3.5 3.5 3.7 3.7 3.7

Note: Queue reported is the distance per lane in feet.

HCM Unsignalized Intersection Capacity Analysis
11: 12th St & Camino Del Mar

LT+P AM NB
3/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑		↑↑	↑		↑↑	
Volume (veh/h)	0	0	34	0	0	18	0	568	31	0	920	21
Sign Control	Stop			Stop			Free			Free		
Grade	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
Hourly flow rate (vph)	0	0	36	0	0	19	0	598	33	0	968	22
Pedestrians	4						46				43	
Lane Width (ft)	12.0						12.0				12.0	
Walking Speed (ft/s)	4.0						4.0				4.0	
Percent Blockage	0						4				4	
Right turn flare (veh)												
Median type	None						None					
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1344	1614	545	1164	1592	342	995			631		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1344	1614	545	1164	1592	342	995			631		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	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 %	100	100	92	100	100	97	100			100		
cM capacity (veh/h)	104	105	467	135	108	636	701			962		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2					
Volume Total	36	19	299	299	33	646	345					
Volume Left	0	0	0	0	0	0	0					
Volume Right	36	19	0	0	33	0	22					
cSH	467	636	1700	1700	1700	1700	1700					
Volume to Capacity	0.08	0.03	0.18	0.18	0.02	0.38	0.20					
Queue Length 95th (ft)	6	2	0	0	0	0	0					
Control Delay (s)	13.3	10.8	0.0	0.0	0.0	0.0	0.0					
Lane LOS	B	B										
Approach Delay (s)	13.3	10.8	0.0				0.0					
Approach LOS	B	B										
Intersection Summary												
Average Delay			0.4									
Intersection Capacity Utilization			44.5%		ICU Level of Service						A	
Analysis Period (min)			15									

With Proj NB

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #12 Camino Del Mar & 11th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.742
Loss Time (sec): 0 Average Delay (sec/veh): 18.3
Optimal Cycle: 0 Level Of Service: C

Street Name: Camino Del Mar 11th St

Approach	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Stop Sign	Stop Sign	Stop Sign	Stop Sign
Rights:	Include	Include	Include	Include
Min. Green:	5 5 5	5 5 5	5 5 5	5 5 5
Lanes:	1 0 1 1 0	1 0 2 0 1	0 0 1! 0 0	0 0 1! 0 0

Volume Module:

Base Vol:	66	512	32	45	859	29	39	2	33	52	3	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	66	512	32	45	859	29	39	2	33	52	3	19
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	66	512	32	45	859	29	39	2	33	52	3	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	69	539	34	47	904	31	41	2	35	55	3	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	69	539	34	47	904	31	41	2	35	55	3	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	69	539	34	47	904	31	41	2	35	55	3	20

Saturation Flow Module:

Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.88	0.12	1.00	2.00	1.00	0.53	0.03	0.44	0.70	0.04	0.26
Final Sat.:	521	1072	67	558	1218	684	270	14	229	353	20	129

Capacity Analysis Module:

Vol/Sat:	0.13	0.50	0.50	0.08	0.74	0.04	0.15	0.15	0.15	0.16	0.16	0.16
Crit Moves:	****			****			****			****		
Delay/Veh:	10.5	14.8	14.7	9.7	23.3	8.1	10.8	10.8	10.8	11.0	11.0	11.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.5	14.8	14.7	9.7	23.3	8.1	10.8	10.8	10.8	11.0	11.0	11.0
LOS by Move:	B	B	B	A	C	A	B	B	B	B	B	B
ApproachDel:	14.3			22.1			10.8			11.0		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	14.3			22.1			10.8			11.0		
LOS by Appr:	B		C		B		B		B		B	
AllWayAvgQ:	3.6	23.6	23.1	2.3	62.1	1.1	4.0	4.0	4.0	4.1	4.1	4.1

Note: Queue reported is the distance per lane in feet.

HCM Signalized Intersection Capacity Analysis
13: 9th St & Camino Del Mar

LT+P AM NB
3/10/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	
Volume (vph)	47	1	48	29	2	18	55	566	22	38	873	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5		4.5		4.5
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Flpb, ped/bikes		0.98			0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			0.98		1.00	1.00		1.00	1.00	
Frt		0.93			0.95		1.00	0.99		1.00	0.99	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1665			1697		1805	3590		1805	3586	
Flt Permitted		0.82			0.81		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1398			1407		1805	3590		1805	3586	
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)	49	1	51	31	2	19	58	596	23	40	919	36
RTOR Reduction (vph)	0	45	0	0	17	0	0	4	0	0	4	0
Lane Group Flow (vph)	0	56	0	0	35	0	58	615	0	40	951	0
Confl. Peds. (#/hr)	43		46	46		43	4					4
Turn Type	Perm		Perm		Prot		Prot		Prot		Prot	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		4.5			4.5		2.2	19.0		2.0	18.8	
Effective Green, g (s)		4.5			4.5		2.2	19.0		2.0	18.8	
Actuated g/C Ratio		0.12			0.12		0.06	0.49		0.05	0.48	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		161			162		102	1749		93	1729	
v/s Ratio Prot							c0.03	0.17		0.02	c0.27	
v/s Ratio Perm		c0.04			0.03							
v/c Ratio		0.35			0.22		0.57	0.35		0.43	0.55	
Uniform Delay, d1		15.9			15.7		17.9	6.2		17.9	7.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.3			0.7		7.1	0.1		3.2	0.4	
Delay (s)		17.2			16.3		25.0	6.3		21.1	7.5	
Level of Service		B			B		C	A		C	A	
Approach Delay (s)		17.2			16.3			7.9			8.0	
Approach LOS		B			B			A			A	
Intersection Summary												
HCM Average Control Delay		8.7										A
HCM Volume to Capacity ratio		0.52										
Actuated Cycle Length (s)		39.0								13.5		
Intersection Capacity Utilization		52.0%										A
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
14: Del Mar Heights Rd & Camino Del Mar

LT+P AM NB
3/10/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	20	103	38	532	69	522	24	175	64	437	561	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00
Flt Protected		0.99	1.00	0.95	0.96	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		1885	1615	1715	1738	1615	1805	3610	1615	1805	1805	3595
Flt Permitted		0.99	1.00	0.95	0.96	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)		1885	1615	1715	1738	1615	1805	3610	1615	1805	1805	3595
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)	21	108	40	560	73	549	25	184	67	460	591	17
RTOR Reduction (vph)	0	0	36	0	0	291	0	0	56	0	2	0
Lane Group Flow (vph)	0	129	4	314	319	258	25	184	11	460	606	0
Turn Type	Split		Perm	Split		pm+ov	Prot		Perm	Prot		
Protected Phases	7	7		3	3	1	5	2		1	6	
Permitted Phases						3						
Actuated Green, G (s)		7.5	7.5	15.7	15.7	33.4	2.8	12.1	12.1	17.7	27.0	
Effective Green, g (s)		7.5	7.5	15.7	15.7	33.4	2.8	12.1	12.1	17.7	27.0	
Actuated g/C Ratio		0.11	0.11	0.22	0.22	0.47	0.04	0.17	0.17	0.25	0.38	
Clearance Time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		199	171	379	384	760	71	615	275	450	1367	
v/s Ratio Prot		c0.07		0.18	c0.18	0.08	0.01	0.05		c0.25	c0.17	
v/s Ratio Perm			0.00			0.08			0.01			
v/c Ratio		0.65	0.02	0.83	0.83	0.34	0.35	0.30	0.04	1.02	0.44	
Uniform Delay, d1		30.5	28.5	26.4	26.4	11.9	33.2	25.7	24.6	26.6	16.4	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		7.1	0.1	13.8	14.1	0.3	3.0	0.3	0.1	48.2	0.2	
Delay (s)		37.6	28.5	40.2	40.5	12.1	36.2	26.0	24.7	74.8	16.6	
Level of Service		D	C	D	D	B	D	C	C	E	B	
Approach Delay (s)		35.4			27.2			26.6			41.7	
Approach LOS		D			C			C			D	
Intersection Summary												
HCM Average Control Delay		33.4										C
HCM Volume to Capacity ratio		0.74										
Actuated Cycle Length (s)		71.0							13.5			
Intersection Capacity Utilization		63.5%										B
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
15: Carmel Valley Rd & Camino Del Mar

LT+P AM NB
3/10/2012

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↑	↘	↙	↘
Volume (vph)	661	85	128	55	185	845
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr't	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)	1805	1615	1900	1615	1805	1900
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1615	1900	1615	1805	1900
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	696	89	135	58	195	889
RTOR Reduction (vph)	0	56	0	46	0	0
Lane Group Flow (vph)	696	33	135	12	195	889
Turn Type	Perm		Perm		Prot	
Protected Phases	8		2		1	6
Permitted Phases	8		2			
Actuated Green, G (s)	27.6	27.6	15.7	15.7	17.1	37.3
Effective Green, g (s)	27.6	27.6	15.7	15.7	17.1	37.3
Actuated g/C Ratio	0.37	0.37	0.21	0.21	0.23	0.50
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	674	603	404	343	418	959
v/s Ratio Prot	c0.39		0.07		0.11	c0.47
v/s Ratio Perm		0.02		0.01		
v/c Ratio	1.03	0.06	0.33	0.04	0.47	0.93
Uniform Delay, d1	23.2	14.8	24.7	23.1	24.5	17.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	43.3	0.0	0.5	0.0	0.8	14.4
Delay (s)	66.5	14.8	25.2	23.1	25.3	31.5
Level of Service	E	B	C	C	C	C
Approach Delay (s)	60.6		24.6			30.4
Approach LOS	E		C			C

Intersection Summary			
HCM Average Control Delay	41.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	73.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
16: Del Mar Heights Rd & Crest Way

1/31/2012

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↗	↖	↖	↗
Volume (vph)	6	932	864	164	88	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	
Fr't	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1805	3610	3610	1615	1808	
Flt Permitted	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1805	3610	3610	1615	1808	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	981	909	173	93	1
RTOR Reduction (vph)	0	0	0	94	1	0
Lane Group Flow (vph)	6	981	909	79	93	0
Turn Type	Prot		Perm			
Protected Phases	7	4	8		6	
Permitted Phases	8					
Actuated Green, G (s)	0.7	20.3	15.1	15.1	3.8	
Effective Green, g (s)	0.7	20.3	15.1	15.1	3.8	
Actuated g/C Ratio	0.02	0.61	0.46	0.46	0.11	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	38	2214	1647	737	208	
v/s Ratio Prot	0.00	c0.27	c0.25		c0.05	
v/s Ratio Perm				0.05		
v/c Ratio	0.16	0.44	0.55	0.11	0.45	
Uniform Delay, d1	15.9	3.4	6.5	5.1	13.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.9	0.1	0.4	0.1	1.5	
Delay (s)	17.9	3.5	6.9	5.2	15.2	
Level of Service	B	A	A	A	B	
Approach Delay (s)		3.6	6.7		15.2	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	5.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	33.1	Sum of lost time (s)	13.5
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

17: Del Mar Heights Rd & I-5 SB Off-Ramp

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑				↓	↓	↓
Volume (vph)	0	669	764	0	1012	965	0	0	0	815	0	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5	4.5	4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	0.99	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)		3610	1615		3610	1615				1715	1635	1534
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)		3610	1615		3610	1615				1715	1635	1534
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	704	804	0	1065	1016	0	0	0	858	0	313
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	7	13
Lane Group Flow (vph)	0	704	804	0	1065	1016	0	0	0	446	436	269
Turn Type		Free			Free					Split	Perm	
Protected Phases		4			8					1	1	
Permitted Phases		Free			Free						1	
Actuated Green, G (s)		15.6	40.5		15.6	40.5				15.9	15.9	15.9
Effective Green, g (s)		15.6	40.5		15.6	40.5				15.9	15.9	15.9
Actuated g/C Ratio		0.39	1.00		0.39	1.00				0.39	0.39	0.39
Clearance Time (s)		4.5			4.5					4.5	4.5	4.5
Vehicle Extension (s)		3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1391	1615		1391	1615				673	642	602
v/s Ratio Prot		0.20			0.30					0.26	0.27	
v/s Ratio Perm		0.50			c0.63						0.18	
v/c Ratio		0.51	0.50		0.77	0.63				0.66	0.68	0.45
Uniform Delay, d1		9.5	0.0		10.9	0.0				10.1	10.2	9.1
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.3	1.1		2.6	1.9				2.5	2.9	0.5
Delay (s)		9.8	1.1		13.4	1.9				12.6	13.1	9.6
Level of Service		A			B					B	B	
Approach Delay (s)		5.2			7.8			0.0		12.0		
Approach LOS		A			A			A		B		

Intersection Summary			
HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	40.5	Sum of lost time (s)	0.0
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

18: Del Mar Heights Rd & I-5 NB On-Ramp

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑↑			↑↑↑	↑	↓	↓	↓	↓	↓	↓
Volume (vph)	236	1282	0	0	1519	807	420	0	811	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.86	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3502	3610			5187	1615	1715	1488	1534			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3502	3610			5187	1615	1715	1488	1534			
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)	248	1349	0	0	1599	849	442	0	854	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	560	0	18	18	0	0	0
Lane Group Flow (vph)	248	1349	0	0	1599	289	398	436	426	0	0	0
Turn Type	Prot				Perm		Split	Perm				
Protected Phases	7		4		8		2		2			
Permitted Phases					8						2	
Actuated Green, G (s)	6.5	32.6			21.6	21.6	21.9	21.9	21.9			
Effective Green, g (s)	6.5	32.6			21.6	21.6	21.9	21.9	21.9			
Actuated g/C Ratio	0.10	0.51			0.34	0.34	0.34	0.34	0.34			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	358	1853			1764	549	591	513	529			
v/s Ratio Prot	0.07	c0.37			c0.31		0.23	c0.29				
v/s Ratio Perm						0.18			0.28			
v/c Ratio	0.69	0.73			0.91	0.53	0.67	0.85	0.80			
Uniform Delay, d1	27.5	12.0			20.0	16.8	17.7	19.3	18.9			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	5.7	1.5			7.1	0.9	3.0	12.4	8.7			
Delay (s)	33.2	13.5			27.1	17.7	20.8	31.7	27.5			
Level of Service	C		B		C		B		C		C	
Approach Delay (s)	16.5				23.9				26.9		0.0	
Approach LOS	B				C				C		A	

Intersection Summary			
HCM Average Control Delay	22.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	63.5	Sum of lost time (s)	13.5
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

19: Del Mar Heights Rd & High Bluff Dr

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	81	1028	688	97	1663	61	210	14	6	84	42	339
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.97	0.95	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99	1.00	0.96	1.00	1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1615	1805	5160	3502	3455	1805	1900	1615	1615	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1615	1805	5160	3502	3455	1805	1900	1615	1615	1615
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)	85	1082	724	102	1751	64	221	15	6	88	44	357
RTOR Reduction (vph)	0	0	287	0	4	0	0	5	0	0	0	34
Lane Group Flow (vph)	85	1082	437	102	1811	0	221	16	0	88	44	323
Turn Type	Prot	pm+ov	Prot	Prot	Prot	Prot	pm+ov	Prot	pm+ov	Prot	pm+ov	Prot
Protected Phases	7	4	5	3	8	5	2	1	6	7	6	6
Permitted Phases	4											
Actuated Green, G (s)	6.3	31.7	43.0	7.6	33.0	11.3	6.5	9.9	5.1	11.4	11.4	11.4
Effective Green, g (s)	6.3	31.7	43.0	7.6	33.0	11.3	6.5	9.9	5.1	11.4	11.4	11.4
Actuated g/C Ratio	0.09	0.43	0.58	0.10	0.45	0.15	0.09	0.13	0.07	0.15	0.15	0.15
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	154	2231	1041	186	2310	537	305	242	131	348	287	1081
v/s Ratio Prot	0.05	0.21	c0.06	0.06	c0.35	0.06	0.00	0.05	0.02	c0.08	0.08	0.08
v/s Ratio Perm	0.12											
v/c Ratio	0.55	0.48	0.42	0.55	0.78	0.41	0.05	0.36	0.34	0.93	0.93	0.93
Uniform Delay, d1	32.3	15.1	8.5	31.4	17.3	28.2	30.8	29.0	32.7	30.7	30.7	30.7
Progression 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
Incremental Delay, d2	4.2	0.2	0.3	3.3	1.8	0.5	0.1	0.9	1.5	30.2	30.2	30.2
Delay (s)	36.6	15.3	8.7	34.7	19.1	28.7	30.8	30.0	34.2	61.0	61.0	61.0
Level of Service	D	B	A	C	B	C	C	C	C	E	E	E
Approach Delay (s)	13.7			20.0			28.9			53.0		
Approach LOS	B			B			C			D		

Intersection Summary			
HCM Average Control Delay	21.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	73.7	Sum of lost time (s)	4.5
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

20: Del Mar Heights Rd & El Camino Real

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	224	790	219	195	1465	61	312	164	185	234	487	659
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.91	0.97	0.91	0.97	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Frt	1.00	0.97	1.00	0.99	1.00	0.99	1.00	1.00	0.85	1.00	0.91	0.91
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5018	3502	5156	3502	5187	1615	3502	4740	4740	4740	4740
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5018	3502	5156	3502	5187	1615	3502	4740	4740	4740	4740
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)	236	832	231	205	1542	64	328	173	195	246	513	694
RTOR Reduction (vph)	0	62	0	0	6	0	0	0	23	0	157	0
Lane Group Flow (vph)	236	1001	0	205	1600	0	328	173	172	246	1050	0
Turn Type	Prot	pm+ov	Prot	Prot	pm+ov	Prot	pm+ov	Prot	pm+ov	Prot	pm+ov	Prot
Protected Phases	7	4	3	8	5	2	3	1	6	6	6	6
Permitted Phases	2											
Actuated Green, G (s)	7.5	27.2	9.2	28.9	6.9	18.5	27.7	6.5	18.1	18.1	18.1	18.1
Effective Green, g (s)	7.5	27.2	9.2	28.9	6.9	18.5	27.7	6.5	18.1	18.1	18.1	18.1
Actuated g/C Ratio	0.09	0.34	0.12	0.36	0.09	0.23	0.35	0.08	0.23	0.23	0.23	0.23
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	331	1719	406	1877	304	1209	655	287	1081	1081	1081	1081
v/s Ratio Prot	c0.07	0.20	0.06	c0.31	c0.09	0.03	0.03	0.07	c0.22	0.08	0.08	0.08
v/s Ratio Perm	0.08											
v/c Ratio	0.71	0.58	0.50	0.85	1.08	0.14	0.26	0.86	1.32dr	1.32dr	1.32dr	1.32dr
Uniform Delay, d1	34.9	21.4	33.0	23.3	36.3	24.2	18.5	36.0	30.4	30.4	30.4	30.4
Progression 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
Incremental Delay, d2	7.1	0.5	1.0	4.0	74.2	0.1	0.2	21.4	20.7	20.7	20.7	20.7
Delay (s)	42.0	21.9	34.0	27.3	110.5	24.2	18.7	57.4	51.1	51.1	51.1	51.1
Level of Service	D	C	C	C	F	C	B	E	D	D	D	D
Approach Delay (s)	25.6			28.0			63.3			52.2		
Approach LOS	C			C			E			D		

Intersection Summary			
HCM Average Control Delay	38.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	79.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		
dr Defacto Right Lane. Recode with 1 though lane as a right lane.			
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

21: 15th St & Ocean Ave

1/31/2012

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↑	↔	↔	↑
Sign Control	Stop		Stop			Stop
Volume (vph)	40	64	15	27	86	27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	42	67	16	28	91	28
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total (vph)	109	44	119			
Volume Left (vph)	42	0	91			
Volume Right (vph)	67	28	0			
Hadj (s)	-0.29	-0.39	0.15			
Departure Headway (s)	4.0	3.9	4.3			
Degree Utilization, x	0.12	0.05	0.14			
Capacity (veh/h)	871	889	809			
Control Delay (s)	7.5	7.1	8.0			
Approach Delay (s)	7.5	7.1	8.0			
Approach LOS	A	A	A			
Intersection Summary						
Delay			7.7			
HCM Level of Service			A			
Intersection Capacity Utilization			25.7%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

1: Via De La Valle & Camino Del Mar

LT + P PM NB

3/10/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔		↑	↑	↔	↔	↔
Volume (vph)	6	99	27	138	87	464	33	699	100	319	344	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00
Fit Protected	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		1895	1615	1805	1900	1615	1805	3610	1615	1805	3610	1615
Fit Permitted		0.99	1.00	0.69	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1872	1615	1304	1900	1615	1805	3610	1615	1805	3610	1615
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)	6	104	28	145	92	488	35	736	105	336	362	7
RTOR Reduction (vph)	0	0	22	0	0	388	0	0	70	0	0	3
Lane Group Flow (vph)	0	110	6	145	92	100	35	736	35	336	362	4
Turn Type	Perm	Perm	Perm	Perm	Perm	Prot	Perm	Prot	Perm	Prot	Perm	Perm
Protected Phases		4			8		5	2		1		6
Permitted Phases	4		4	8		8			2			6
Actuated Green, G (s)		13.3	13.3	13.3	13.3	13.3	2.7	21.3	21.3	16.6	35.2	35.2
Effective Green, g (s)		13.3	13.3	13.3	13.3	13.3	2.7	21.3	21.3	16.6	35.2	35.2
Actuated g/C Ratio		0.21	0.21	0.21	0.21	0.21	0.04	0.33	0.33	0.26	0.54	0.54
Clearance Time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	385	332	268	391	332	75	1188	532	463	1964	879	
v/s Ratio Prot				0.05		0.02	c0.20		c0.19	0.10		
v/s Ratio Perm	0.06	0.00	c0.11		0.06			0.02			0.00	
v/c Ratio	0.29	0.02	0.54	0.24	0.30	0.47	0.62	0.06	0.73	0.18	0.00	
Uniform Delay, d1	21.7	20.5	23.0	21.5	21.8	30.3	18.3	14.9	22.0	7.5	6.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	0.0	2.2	0.3	0.5	4.5	1.0	0.1	5.6	0.0	0.0	
Delay (s)	22.1	20.5	25.2	21.8	22.3	34.8	19.3	14.9	27.6	7.5	6.7	
Level of Service	C	C	C	C	C	C	B	B	C	A	A	
Approach Delay (s)	21.8			22.8			19.4			17.1		
Approach LOS	C			C			B			B		
Intersection Summary												
HCM Average Control Delay			19.9	HCM Level of Service				B				
HCM Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			64.7	Sum of lost time (s)				13.5				
Intersection Capacity Utilization			64.8%	ICU Level of Service				C				
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: Via De La Valle & Jimmy Durante Blvd

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	47	570	24	465	668	475	109	195	1103	558	112	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.0	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	1.00	0.88	0.97	1.00	1.00
Frt	1.00	0.99		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3588		3502	3385		1805	1900	2842	3502	1900	1615
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3588		3502	3385		1805	1900	2842	3502	1900	1615
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)	49	600	25	489	703	500	115	205	1161	587	118	91
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	0	74
Lane Group Flow (vph)	49	621	0	489	1203	0	115	205	1161	587	118	17
Turn Type	Prot			Prot			Split		Free	Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases									Free		6	6
Actuated Green, G (s)	4.6	23.8		12.7	31.9		13.2	13.2	83.8	16.1	16.1	16.1
Effective Green, g (s)	4.6	23.8		12.7	31.9		13.2	13.2	83.8	16.1	16.1	16.1
Actuated g/C Ratio	0.05	0.28		0.15	0.38		0.16	0.16	1.00	0.19	0.19	0.19
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	99	1019		531	1289		284	299	2842	673	365	310
v/s Ratio Prot	0.03	0.17		0.14	0.36		0.06	0.11		0.17	0.06	
v/s Ratio Perm								0.41				0.01
v/c Ratio	0.49	0.61		0.92	0.93		0.40	0.69	0.41	0.87	0.32	0.06
Uniform Delay, d1	38.5	26.0		35.1	24.9		31.8	33.3	0.0	32.9	29.2	27.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.9	1.0		21.5	12.3		0.9	6.4	0.4	12.0	0.5	0.1
Delay (s)	42.3	27.0		56.5	37.2		32.7	39.7	0.4	44.8	29.7	27.7
Level of Service	D	C		E	D		C	D	A	D	C	C
Approach Delay (s)		28.1			42.8			8.4			40.6	
Approach LOS		C			D			A			D	

Intersection Summary			
HCM Average Control Delay	29.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	83.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

3: Via De La Valle & I-5 SB Off-Ramp

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Volume (vph)	0	1120	808	0	1506	427	0	0	0	426	0	411
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5	4.5	4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	0.92	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.98	1.00
Satd. Flow (prot)		3610	1615		3610	1615				1715	1558	1534
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.98	1.00
Satd. Flow (perm)		3610	1615		3610	1615				1715	1558	1534
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	1179	851	0	1585	449	0	0	0	448	0	433
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	6	6
Lane Group Flow (vph)	0	1179	851	0	1585	449	0	0	0	305	289	275
Turn Type		Free			Free					Split		Perm
Protected Phases		4			8					6	6	
Permitted Phases			Free			Free						6
Actuated Green, G (s)		20.1	41.9		20.1	41.9				12.8	12.8	12.8
Effective Green, g (s)		20.1	41.9		20.1	41.9				12.8	12.8	12.8
Actuated g/C Ratio		0.48	1.00		0.48	1.00				0.31	0.31	0.31
Clearance Time (s)		4.5			4.5					4.5	4.5	4.5
Vehicle Extension (s)		3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1732	1615		1732	1615				524	476	469
v/s Ratio Prot		0.33			0.44					0.18	0.19	
v/s Ratio Perm			0.53			0.28						0.18
v/c Ratio		0.68	0.53		0.92	0.28				0.58	0.61	0.59
Uniform Delay, d1		8.4	0.0		10.1	0.0				12.3	12.4	12.3
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		1.1	1.2		7.9	0.4				1.7	2.2	1.9
Delay (s)		9.5	1.2		18.0	0.4				13.9	14.6	14.2
Level of Service		A	A		B	A				B	B	B
Approach Delay (s)		6.1			14.2			0.0			14.2	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	41.9	Sum of lost time (s)	4.5
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

4: Via De La Valle & I-5 NB On-Ramp

2/1/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑		↑↑	↑			
Volume (vph)	0	954	522	0	1112	472	912	0	588	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frt		1.00	0.85		1.00	0.85	1.00	0.97	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)		3610	1615		3610	1615	1715	1607	1534			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)		3610	1615		3610	1615	1715	1607	1534			
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	1004	549	0	1171	497	960	0	619	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	20	20	0	0	0
Lane Group Flow (vph)	0	1004	549	0	1171	497	547	517	475	0	0	0
Turn Type		Free			Free		Perm	Perm				
Protected Phases		4			8			2				
Permitted Phases		Free			Free			2				
Actuated Green, G (s)		16.8	43.0		16.8	43.0	17.2	17.2	17.2			
Effective Green, g (s)		16.8	43.0		16.8	43.0	17.2	17.2	17.2			
Actuated g/C Ratio		0.39	1.00		0.39	1.00	0.40	0.40	0.40			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)		1410	1615		1410	1615	686	643	614			
v/s Ratio Prot		0.28			c0.32							
v/s Ratio Perm			0.34			0.31	0.32	0.32	0.31			
v/c Ratio		0.71	0.34		0.83	0.31	0.80	0.80	0.77			
Uniform Delay, d1		11.1	0.0		11.8	0.0	11.4	11.4	11.2			
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2		1.7	0.6		4.3	0.5	6.4	7.2	6.0			
Delay (s)		12.8	0.6		16.1	0.5	17.8	18.6	17.3			
Level of Service		B A			B A		B	B	B			
Approach Delay (s)		8.5			11.5		17.9			0.0		
Approach LOS		A			B		B			A		
Intersection Summary												
HCM Average Control Delay		12.6			HCM Level of Service		B					
HCM Volume to Capacity ratio		0.82										
Actuated Cycle Length (s)		43.0			Sum of lost time (s)		9.0					
Intersection Capacity Utilization		69.5%			ICU Level of Service		C					
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Via De La Valle & San Andres Dr

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑↑	↑	↑	↑↑	↑	↑	↑	↑	↑	↑	↑
Volume (vph)	391	911	24	90	1146	159	64	50	66	138	49	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92	0.92	0.99	0.85	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.97	1.00	1.00
Satd. Flow (prot)	3502	3610	1615	1805	3610	1615	1715	1656	1722	1534	1534	1534
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.97	1.00
Satd. Flow (perm)	3502	3610	1615	1805	3610	1615	1715	1656	1722	1534	1534	1534
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)	412	959	25	95	1206	167	67	53	69	145	52	212
RTOR Reduction (vph)	0	0	8	0	0	105	0	50	0	0	4	159
Lane Group Flow (vph)	412	959	17	95	1206	62	60	79	0	0	214	32
Turn Type	Prot	Perm		Prot	Perm		Split	Split		Perm		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases		4			8						6	
Actuated Green, G (s)	11.6	33.6	33.6	7.5	29.5	29.5	9.3	9.3		14.0	14.0	14.0
Effective Green, g (s)	11.6	33.6	33.6	7.5	29.5	29.5	9.3	9.3		14.0	14.0	14.0
Actuated g/C Ratio	0.14	0.41	0.41	0.09	0.36	0.36	0.11	0.11		0.17	0.17	0.17
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	493	1472	659	164	1292	578	194	187		293	261	261
v/s Ratio Prot	c0.12	c0.27		0.05	c0.33		0.03	c0.05		c0.12		c0.12
v/s Ratio Perm			0.01			0.04						0.02
v/c Ratio	0.84	0.65	0.03	0.58	0.93	0.11	0.31	0.42		0.73	0.12	0.12
Uniform Delay, d1	34.5	19.7	14.6	35.9	25.5	17.7	33.6	34.1		32.4	29.0	29.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	11.7	1.0	0.0	4.9	12.3	0.1	0.9	1.6		8.8	0.2	0.2
Delay (s)	46.1	20.7	14.6	40.8	37.8	17.7	34.5	35.6		41.2	29.2	29.2
Level of Service	D	C	B	D	D	B	C	D		D	C	C
Approach Delay (s)	28.1			35.7			35.3			35.6		
Approach LOS	C			D			D			D		
Intersection Summary												
HCM Average Control Delay		32.6			HCM Level of Service		C					
HCM Volume to Capacity ratio		0.85										
Actuated Cycle Length (s)		82.4			Sum of lost time (s)		22.5					
Intersection Capacity Utilization		75.1%			ICU Level of Service		D					
Analysis Period (min)		15										
c Critical Lane Group												

 With Proj NB

Level Of Service Computation Report
 2000 HCM 4-Way Stop Method (Future Volume Alternative)

 Intersection #6 Camino Del Mar & Coast Blvd

Cycle (sec): 100 Critical Vol./Cap.(X): 0.700
 Loss Time (sec): 0 Average Delay (sec/veh): 15.7
 Optimal Cycle: 0 Level Of Service: C

Street Name: Camino Del Mar Coast Blvd
 Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Stop Sign Stop Sign
 Rights: Include Include Include Include
 Min. Green: 5 5 5 5 5 5 5 5 5 5
 Lanes: 1 0 1 0 1 1 0 1 0 0 1 0 0 1 0 0 1 0 0 0

Volume Module:
 Base Vol: 16 386 4 12 221 86 100 0 8 6 0 4
 Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 Initial Bse: 16 386 4 12 221 86 100 0 8 6 0 4
 Added Vol: 0 18 0 0 27 0 0 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 16 404 4 12 248 86 100 0 8 6 0 4
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
 PHF Volume: 17 425 4 13 261 91 105 0 8 6 0 4
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 17 425 4 13 261 91 105 0 8 6 0 4
 PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 FinalVolume: 17 425 4 13 261 91 105 0 8 6 0 4

Saturation Flow Module:
 Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 0.60 0.00 0.40
 Final Sat.: 552 607 676 528 576 644 478 0 565 288 0 192

Capacity Analysis Module:
 Vol/Sat: 0.03 0.70 0.01 0.02 0.45 0.14 0.22 xxxx 0.01 0.02 xxxx 0.02
 Crit Moves: **** **** **** ****
 Delay/Veh: 9.2 20.5 7.9 9.4 13.4 8.9 11.6 0.0 8.7 9.9 0.0 9.9
 Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 AdjDel/Veh: 9.2 20.5 7.9 9.4 13.4 8.9 11.6 0.0 8.7 9.9 0.0 9.9
 LOS by Move: A C A A B A B * A A * A
 ApproachDel: 19.9 12.1 11.4 9.9
 Delay Adj: 1.00 1.00 1.00
 ApprAdjDel: 19.9 12.1 11.4 9.9
 LOS by Appr: C B B A
 AllWayAvgQ: 0.7 50.3 0.1 0.6 18.6 3.7 6.1 6.1 0.3 0.5 0.5 0.5

 Note: Queue reported is the distance per lane in feet.

HCM Unsignalized Intersection Capacity Analysis

7: 15th St & Stratford Ct



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Volume (veh/h)	169	33	33	203	54	56
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	178	35	35	214	57	59
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)	311					
pX, platoon unblocked						
vC, conflicting volume			213	478		195
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
UCu, unblocked vol			213	478		195
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	89		93
cM capacity (veh/h)			1370	536		851

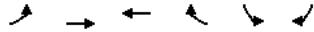
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	213	248	116
Volume Left	0	35	57
Volume Right	35	0	59
cSH	1700	1370	660
Volume to Capacity	0.13	0.03	0.18
Queue Length 95th (ft)	0	2	16
Control Delay (s)	0.0	1.3	11.6
Lane LOS	A		B
Approach Delay (s)	0.0	1.3	11.6
Approach LOS	B		

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

8: 12th St & Stratford Ct

1/31/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	↑
Volume (veh/h)	39	9	5	10	13	13
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	41	9	5	11	14	14
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	16				102	11
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	16				102	11
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				98	99
cM capacity (veh/h)	1615				878	1076

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	51	16	27
Volume Left	41	0	14
Volume Right	0	11	14
cSH	1615	1700	967
Volume to Capacity	0.03	0.01	0.03
Queue Length 95th (ft)	2	0	2
Control Delay (s)	6.0	0.0	8.8
Lane LOS	A		A
Approach Delay (s)	6.0	0.0	8.8
Approach LOS			A

Intersection Summary			
Average Delay		5.8	
Intersection Capacity Utilization	19.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis

9: 15th St & Camino Del Mar

LT + P PM NB

3/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Volume (vph)	84	20	110	63	27	94	147	799	63	71	474	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.83	1.00	1.00	0.73	1.00	0.99	1.00		1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.85	1.00	0.99	1.00		1.00	0.98	
Fit Protected	0.96	1.00	0.95	0.98	1.00	0.95	1.00	0.95		1.00	0.95	
Satd. Flow (prot)	1826	1339	1715	1768	1180	1805	3545	1805		3469	3469	
Fit Permitted	0.96	1.00	0.95	0.98	1.00	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (perm)	1826	1339	1715	1768	1180	1805	3545	1805		3469	3469	
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)	88	21	116	66	28	99	155	841	66	75	499	94
RTOR Reduction (vph)	0	0	105	0	0	91	0	9	0	0	24	0
Lane Group Flow (vph)	0	109	11	46	48	8	155	898	0	75	569	0
Confl. Peds. (#/hr)			52			74			50			50
Turn Type	Split	Split	Perm	Split	Split	Perm	Prot	Prot		Prot	Prot	
Protected Phases	7	7		3	3		5	2		1	6	
Permitted Phases			7			3						
Actuated Green, G (s)		5.0	5.0	4.4	4.4	4.4	6.2	21.4		3.2	18.4	
Effective Green, g (s)		5.0	5.0	4.4	4.4	4.4	6.2	21.4		3.2	18.4	
Actuated g/C Ratio		0.10	0.10	0.08	0.08	0.08	0.12	0.41		0.06	0.35	
Clearance Time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		176	129	145	150	100	215	1459		111	1227	
v/s Ratio Prot		c0.06		0.03	c0.03		c0.09	c0.25		0.04	0.16	
v/s Ratio Perm			0.01			0.01						
v/c Ratio		0.62	0.09	0.32	0.32	0.08	0.72	0.62		0.68	0.46	
Uniform Delay, d1		22.6	21.4	22.4	22.4	21.9	22.1	12.1		23.9	13.0	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.4	0.3	1.3	1.2	0.4	11.3	0.8		15.1	0.3	
Delay (s)		28.9	21.7	23.7	23.6	22.3	33.3	12.8		39.0	13.3	
Level of Service		C	C	C	C	C	C	B		D	B	
Approach Delay (s)		25.2			23.0			15.8			16.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	52.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

With Proj NB

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #10 Camino Del Mar & 13th St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.917
Loss Time (sec): 0 Average Delay (sec/veh): 30.0
Optimal Cycle: 0 Level Of Service: D

Street Name:	Camino Del Mar				13th St					
Approach:	North Bound		South Bound		East Bound		West Bound			
Movement:	L	T	R	L	T	R	L	T	R	
Control:	Stop Sign		Stop Sign		Stop Sign		Stop Sign			
Rights:	Include		Include		Include		Include			
Min. Green:	5	5	5	5	5	5	5	5		
Lanes:	1	0	1	1	0	0	0	1	0	0

Volume Module:

Base Vol:	149	962	32	50	543	41	27	2	92	72	5	27
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	149	962	32	50	543	41	27	2	92	72	5	27
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	149	962	32	50	543	41	27	2	92	72	5	27
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	157	1013	34	53	572	43	28	2	97	76	5	28
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	157	1013	34	53	572	43	28	2	97	76	5	28
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	157	1013	34	53	572	43	28	2	97	76	5	28

Saturation Flow Module:

Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.94	0.06	1.00	1.86	0.14	0.22	0.02	0.76	0.69	0.05	0.26
Final Sat.:	523	1104	37	476	961	73	115	9	391	334	23	125

Capacity Analysis Module:

Vol/Sat:	0.30	0.92	0.91	0.11	0.59	0.59	0.25	0.25	0.25	0.23	0.23	0.23
Crit Moves:	****			****			****			****		
Delay/Veh:	12.4	44.3	43.6	11.0	18.8	18.5	11.9	11.9	11.9	12.2	12.2	12.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.4	44.3	43.6	11.0	18.8	18.5	11.9	11.9	11.9	12.2	12.2	12.2
LOS by Move:	B	E	E	B	C	C	B	B	B	B	B	B
ApproachDel:	40.1			18.2			11.9			12.2		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	40.1			18.2			11.9			12.2		
LOS by Appr:	E			C			B			B		
AllWayAvgQ:	10.4	142	137.9	3.0	33.7	32.7	7.5	7.5	7.5	6.7	6.7	6.7

Note: Queue reported is the distance per lane in feet.

HCM Unsignalized Intersection Capacity Analysis
11: 12th St & Camino Del Mar



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑		↑↑	↑		↑↑	↑
Volume (veh/h)	0	0	48	0	0	27	1	1079	38	0	752	19
Sign Control	Stop			Stop			Free			Free		
Grade	0%			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
Hourly flow rate (vph)	0	0	51	0	0	28	1	1136	40	0	792	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	1400	1979	406	1584	1949	568	812			1176		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1400	1979	406	1584	1949	568	812			1176		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	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 %	100	100	92	100	100	94	100			100		
cM capacity (veh/h)	96	62	600	68	65	471	824			601		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2					
Volume Total	51	28	380	757	40	528	284					
Volume Left	0	0	1	0	0	0	0					
Volume Right	51	28	0	0	40	0	20					
cSH	600	471	824	1700	1700	1700	1700					
Volume to Capacity	0.08	0.06	0.00	0.45	0.02	0.31	0.17					
Queue Length 95th (ft)	7	5	0	0	0	0	0					
Control Delay (s)	11.5	13.1	0.0	0.0	0.0	0.0	0.0					
Lane LOS	B	B	A									
Approach Delay (s)	11.5	13.1	0.0									
Approach LOS	B	B										
Intersection Summary												
Average Delay	0.5											
Intersection Capacity Utilization	39.9%			ICU Level of Service			A					
Analysis Period (min)	15											

 With Proj NB

Level Of Service Computation Report
 2000 HCM 4-Way Stop Method (Future Volume Alternative)

 Intersection #12 Camino Del Mar & 11th St

Cycle (sec): 100 Critical Vol./Cap.(X): 1.008
 Loss Time (sec): 0 Average Delay (sec/veh): 42.3
 Optimal Cycle: 0 Level Of Service: E

Street Name: Camino Del Mar 11th St
 Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Stop Sign Stop Sign
 Rights: Include Include Include Include
 Min. Green: 5 5 5 5 5 5 5 5 5 5
 Lanes: 1 0 1 1 0 1 0 2 0 1 0 0 1! 0 0 0 0 1! 0 0

Volume Module:

Base Vol:	83	1041	39	78	705	23	38	2	45	68	3	26
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	83	1041	39	78	705	23	38	2	45	68	3	26
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	83	1041	39	78	705	23	38	2	45	68	3	26
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	87	1096	41	82	742	24	40	2	47	72	3	27
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	1096	41	82	742	24	40	2	47	72	3	27
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	87	1096	41	82	742	24	40	2	47	72	3	27

Saturation Flow Module:

Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.93	0.07	1.00	2.00	1.00	0.45	0.02	0.53	0.70	0.03	0.27
Final Sat.:	517	1087	41	490	1050	585	223	12	264	344	15	131

Capacity Analysis Module:

Vol/Sat:	0.17	1.01	1.00	0.17	0.71	0.04	0.18	0.18	0.18	0.21	0.21	0.21
Crit Moves:	****			****			****			****		
Delay/Veh:	11.0	64.6	63.4	11.5	24.3	9.1	11.5	11.5	11.5	12.0	12.0	12.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.0	64.6	63.4	11.5	24.3	9.1	11.5	11.5	11.5	12.0	12.0	12.0
LOS by Move:	B	F	F	B	C	A	B	B	B	B	B	B
ApproachDel:	60.8			22.6			11.5			12.0		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	60.8			22.6			11.5			12.0		
LOS by Appr:	F			C			B			B		
AllWayAvgQ:	5.0	221	213.9	5.0	53.7	1.1	5.1	5.1	5.1	6.2	6.2	6.2

Note: Queue reported is the distance per lane in feet.

HCM Signalized Intersection Capacity Analysis
 13: 9th St & Camino Del Mar



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Volume (vph)	27	0	42	37	4	23	45	1120	41	45	793	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5		4.5		4.5
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.97			0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.98			0.98		1.00	1.00		1.00	1.00	
Frt		0.92			0.95		1.00	0.99		1.00	1.00	
Fit Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1635			1689		1805	3591		1805	3599	
Fit Permitted		0.84			0.78		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1405			1356		1805	3591		1805	3599	
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)	28	0	44	39	4	24	47	1179	43	47	835	14
RTOR Reduction (vph)	0	39	0	0	21	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	33	0	0	46	0	47	1219	0	47	848	0
Confl. Peds. (#/hr)	57		44	44		57	13					13
Turn Type		Perm			Perm		Prot			Prot		
Protected Phases			4			8		5	2		1	6
Permitted Phases		4			8							
Actuated Green, G (s)		4.7			4.7		2.3	22.2		2.3	22.2	
Effective Green, g (s)		4.7			4.7		2.3	22.2		2.3	22.2	
Actuated g/C Ratio		0.11			0.11		0.05	0.52		0.05	0.52	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		155			149		97	1867		97	1871	
v/s Ratio Prot							c0.03	c0.34		0.03	0.24	
v/s Ratio Perm		0.02			c0.03							
v/c Ratio		0.21			0.31		0.48	0.65		0.48	0.45	
Uniform Delay, d1		17.3			17.5		19.6	7.5		19.6	6.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7			1.2		3.8	0.8		3.8	0.2	
Delay (s)		18.0			18.7		23.4	8.3		23.4	6.6	
Level of Service		B			B		C	A		C	A	
Approach Delay (s)		18.0			18.7			8.8			7.5	
Approach LOS		B			B			A			A	

Intersection Summary

HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	42.7	Sum of lost time (s)	13.5
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
14: Del Mar Heights Rd & Camino Del Mar

LT + P PM NB
3/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗	↖	↖	↗	↗	↖	↗	↖
Volume (vph)	24	58	21	114	143	636	58	625	438	543	293	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	1.00	0.99
Flt Protected	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1873	1615	1715	1798	1615	1805	3610	1615	1805	3574	1805	3574
Flt Permitted	0.99	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1873	1615	1715	1798	1615	1805	3610	1615	1805	3574	1805	3574
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)	25	61	22	120	151	669	61	658	461	572	308	22
RTOR Reduction (vph)	0	0	21	0	0	94	0	0	221	0	6	0
Lane Group Flow (vph)	0	86	1	108	163	575	61	658	240	572	324	0
Turn Type	Split	Perm	Split	pm+ov	Prot	Perm	Prot	Perm	Prot	Perm	Prot	Perm
Protected Phases	7	7	3	3	1	5	2	2	1	6		
Permitted Phases			7	3								
Actuated Green, G (s)	4.1	4.1	8.7	8.7	35.8	3.9	19.7	19.7	27.1	42.9		
Effective Green, g (s)	4.1	4.1	8.7	8.7	35.8	3.9	19.7	19.7	27.1	42.9		
Actuated g/C Ratio	0.05	0.05	0.11	0.11	0.46	0.05	0.25	0.25	0.35	0.55		
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	99	85	192	202	745	91	916	410	630	1976		
v/s Ratio Prot	c0.05		0.06	c0.09	0.27	0.03	c0.18		c0.32	0.09		
v/s Ratio Perm		0.00			0.09			0.15				
v/c Ratio	0.87	0.01	0.56	0.81	0.77	0.67	0.72	0.59	0.91	0.16		
Uniform Delay, d1	36.5	34.8	32.6	33.6	17.5	36.2	26.4	25.4	24.1	8.5		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	50.4	0.1	3.7	20.5	5.0	17.7	2.7	2.1	16.8	0.0		
Delay (s)	86.9	34.9	36.4	54.1	22.4	53.9	29.1	27.5	40.9	8.6		
Level of Service	F	C	D	D	C	D	C	C	D	A		
Approach Delay (s)	76.3			29.5		29.8			29.1			
Approach LOS	E			C		C			C			

Intersection Summary			
HCM Average Control Delay	31.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	77.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
15: Carmel Valley Rd & Camino Del Mar

LT + P PM NB
3/10/2012



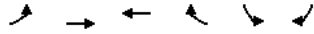
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↖	↗
Volume (vph)	153	174	984	352	142	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1615	1900	1615	1805	1900
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1615	1900	1615	1805	1900
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	161	183	1036	371	149	253
RTOR Reduction (vph)	0	156	0	87	0	0
Lane Group Flow (vph)	161	27	1036	284	149	253
Turn Type	Perm	Perm	Perm	Prot	Perm	Prot
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	12.4	12.4	48.9	48.9	10.0	63.4
Effective Green, g (s)	12.4	12.4	48.9	48.9	10.0	63.4
Actuated g/C Ratio	0.15	0.15	0.58	0.58	0.12	0.75
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	264	236	1096	931	213	1421
v/s Ratio Prot	c0.09		c0.55		c0.08	0.13
v/s Ratio Perm		0.02		0.18		
v/c Ratio	0.61	0.11	0.95	0.30	0.70	0.18
Uniform Delay, d1	33.9	31.4	16.7	9.2	36.0	3.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	0.2	15.7	0.2	9.6	0.1
Delay (s)	37.9	31.6	32.4	9.4	45.6	3.2
Level of Service	D	C	C	A	D	A
Approach Delay (s)	34.6		26.3		18.9	
Approach LOS	C		C		B	

Intersection Summary			
HCM Average Control Delay	26.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	84.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

16: Del Mar Heights Rd & Crest Way

1/31/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Volume (vph)	5	670	1045	85	136	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1805	3610	3610	1615	1804	
Flt Permitted	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1805	3610	3610	1615	1804	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	705	1100	89	143	5
RTOR Reduction (vph)	0	0	0	49	3	0
Lane Group Flow (vph)	5	705	1100	40	145	0
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	0.6	21.5	16.4	16.4	6.3	
Effective Green, g (s)	0.6	21.5	16.4	16.4	6.3	
Actuated g/C Ratio	0.02	0.58	0.45	0.45	0.17	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	29	2109	1609	720	309	
v/s Ratio Prot	0.00	c0.20	c0.30		c0.08	
v/s Ratio Perm				0.02		
v/c Ratio	0.17	0.33	0.68	0.06	0.47	
Uniform Delay, d1	17.9	4.0	8.1	5.8	13.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.8	0.1	1.2	0.0	1.1	
Delay (s)	20.7	4.0	9.3	5.8	14.9	
Level of Service	C	A	A	A	B	
Approach Delay (s)		4.2	9.1		14.9	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	36.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

17: Del Mar Heights Rd & I-5 SB Off-Ramp

1/31/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕	↕				↕	↕	↕
Volume (vph)	0	857	451	0	1096	558	0	0	0	881	0	259
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5	4.5	4.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.95	0.91	0.95
Frt		1.00	0.85		1.00	0.85				1.00	0.99	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)		3610	1615		3610	1615				1715	1637	1534
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)		3610	1615		3610	1615				1715	1637	1534
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	902	475	0	1154	587	0	0	0	927	0	273
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	5	9
Lane Group Flow (vph)	0	902	475	0	1154	587	0	0	0	482	467	237
Turn Type		Free			Free					Split		Perm
Protected Phases		4			8					1		1
Permitted Phases			Free			Free						1
Actuated Green, G (s)		16.0	41.5		16.0	41.5				16.5	16.5	16.5
Effective Green, g (s)		16.0	41.5		16.0	41.5				16.5	16.5	16.5
Actuated g/C Ratio		0.39	1.00		0.39	1.00				0.40	0.40	0.40
Clearance Time (s)		4.5			4.5					4.5	4.5	4.5
Vehicle Extension (s)		3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1392	1615		1392	1615				682	651	610
v/s Ratio Prot		0.25			c0.32					0.28	c0.29	
v/s Ratio Perm			0.29			0.36						0.15
v/c Ratio		0.65	0.29		0.83	0.36				0.71	0.72	0.39
Uniform Delay, d1		10.4	0.0		11.5	0.0				10.5	10.5	8.9
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		1.0	0.5		4.2	0.6				3.3	3.8	0.4
Delay (s)		11.5	0.5		15.7	0.6				13.8	14.3	9.3
Level of Service		B	A		B	A				B	B	A
Approach Delay (s)		7.7			10.7			0.0			13.1	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	41.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

18: Del Mar Heights Rd & I-5 NB On-Ramp

1/31/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔	↔	↔	↔	↔			
Volume (vph)	188	1586	0	0	1070	588	624	0	602	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.92	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98	1.00			
Satd. Flow (prot)	3502	3610			5187	1615	1715	1558	1534			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.98	1.00			
Satd. Flow (perm)	3502	3610			5187	1615	1715	1558	1534			
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)	198	1669	0	0	1126	619	657	0	634	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	410	0	8	8	0	0	0
Lane Group Flow (vph)	198	1669	0	0	1126	209	447	424	404	0	0	0
Turn Type	Prot				Perm	Split		Perm				
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2			
Actuated Green, G (s)	5.5	29.4			19.4	19.4	19.1	19.1	19.1			
Effective Green, g (s)	5.5	29.4			19.4	19.4	19.1	19.1	19.1			
Actuated g/C Ratio	0.10	0.51			0.34	0.34	0.33	0.33	0.33			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	335	1846			1750	545	570	518	510			
v/s Ratio Prot	0.06	c0.46			0.22		0.26	c0.27				
v/s Ratio Perm						0.13			0.26			
v/c Ratio	0.59	0.90			0.64	0.38	0.78	0.82	0.79			
Uniform Delay, d1	24.9	12.8			16.1	14.5	17.3	17.6	17.4			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	2.8	6.7			0.8	0.5	7.0	9.7	8.2			
Delay (s)	27.7	19.5			16.9	14.9	24.3	27.4	25.6			
Level of Service	C	B			B	B	C	C	C			
Approach Delay (s)		20.3			16.2			25.8		0.0		
Approach LOS		C			B			C		A		

Intersection Summary			
HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	57.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

19: Del Mar Heights Rd & High Bluff Dr

2/1/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	211	1565	192	17	993	51	742	103	199	52	41	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.97	0.95	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99	1.00	0.90	1.00	0.90	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1615	1805	5149		3502	3253		1805	1900	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1615	1805	5149		3502	3253		1805	1900	1615
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)	222	1647	202	18	1045	54	781	108	209	55	43	169
RTOR Reduction (vph)	0	0	62	0	6	0	0	138	0	0	0	4
Lane Group Flow (vph)	222	1647	140	18	1093	0	781	179	0	55	43	165
Turn Type	Prot		pm+ov	Prot			Prot			Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4									6
Actuated Green, G (s)	12.8	35.5	54.2	1.4	24.1		18.7	19.4		3.7	4.4	17.2
Effective Green, g (s)	12.8	35.5	54.2	1.4	24.1		18.7	19.4		3.7	4.4	17.2
Actuated g/C Ratio	0.16	0.46	0.69	0.02	0.31		0.24	0.25		0.05	0.06	0.22
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	296	2361	1215	32	1591		840	809		86	107	449
v/s Ratio Prot	c0.12	c0.32	0.03	0.01	0.21		c0.22	0.05		0.03	0.02	c0.06
v/s Ratio Perm			0.06									0.04
v/c Ratio	0.75	0.70	0.12	0.56	0.69		0.93	0.22		0.64	0.40	0.37
Uniform Delay, d1	31.1	17.0	3.9	38.0	23.6		29.0	23.3		36.5	35.5	25.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	10.2	0.9	0.0	20.7	1.3		16.3	0.1		14.6	2.5	0.5
Delay (s)	41.3	17.9	4.0	58.7	24.9		45.3	23.4		51.1	38.0	26.3
Level of Service	D	B	A	E	C		D	C		D	D	C
Approach Delay (s)		19.0			25.4			39.0				33.3
Approach LOS		B			C			D				C

Intersection Summary			
HCM Average Control Delay	26.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	78.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

20: Del Mar Heights Rd & El Camino Real

2/1/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑↑↑		↑↑	↑↑↑		↑↑	↑↑↑		↑↑	↑↑↑	
Volume (vph)	423	1270	303	100	635	150	450	561	326	246	234	259
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.91	1.00	0.97	0.91	
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3502	5037		3502	5038		3502	5187	1615	3502	4778	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3502	5037		3502	5038		3502	5187	1615	3502	4778	
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)	445	1337	319	105	668	158	474	591	343	259	246	273
RTOR Reduction (vph)	0	49	0	0	48	0	0	0	13	0	225	0
Lane Group Flow (vph)	445	1607	0	105	778	0	474	591	330	259	294	0
Turn Type	Prot			Prot			Prot	pm+ov		Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	13.4	29.0		4.5	20.1		9.6	14.1	18.6	8.5	13.0	
Effective Green, g (s)	13.4	29.0		4.5	20.1		9.6	14.1	18.6	8.5	13.0	
Actuated g/C Ratio	0.18	0.39		0.06	0.27		0.13	0.19	0.25	0.11	0.18	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	633	1971		213	1367		454	987	503	402	838	
v/s Ratio Prot	0.13	c0.32		0.03	0.15		c0.14	0.11	c0.04	0.07	0.06	
v/s Ratio Perm									0.16			
v/c Ratio	0.70	0.82		0.49	0.57		1.04	0.60	0.66	0.64	0.35	
Uniform Delay, d1	28.5	20.2		33.7	23.3		32.2	27.4	24.9	31.4	26.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.5	2.7		1.8	0.5		54.2	1.0	3.1	3.5	0.3	
Delay (s)	32.0	22.9		35.5	23.8		86.4	28.4	27.9	34.9	27.1	
Level of Service	C	C		D	C		F	C	C	C	C	
Approach Delay (s)		24.8			25.1			47.8			29.7	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM Average Control Delay	31.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

21: 15th St & Ocean Ave

1/31/2012

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑↑		↑		↑	↑
Sign Control	Stop		Stop			Stop
Volume (vph)	88	184	28	39	110	24
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	93	194	29	41	116	25
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total (vph)	286	71	141			
Volume Left (vph)	93	0	116			
Volume Right (vph)	194	41	0			
Hadj (s)	-0.34	-0.35	0.16			
Departure Headway (s)	4.1	4.4	4.8			
Degree Utilization, x	0.32	0.09	0.19			
Capacity (veh/h)	850	764	705			
Control Delay (s)	9.0	7.8	8.9			
Approach Delay (s)	9.0	7.8	8.9			
Approach LOS	A	A	A			

Intersection Summary			
Delay		8.8	
HCM Level of Service		A	
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)		15	

APPENDIX K

**PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS
LONG TERM CONDITIONS WITH PROJECT FOUR LANE COLLECTOR WITH
SIGNALS**

HCM Signalized Intersection Capacity Analysis
9: 15th St & Camino Del Mar

LT AM + P 4L
3/10/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Volume (vph)	29	14	87	40	12	70	86	337	54	96	732	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	0.95
Frpb, ped/bikes	1.00	0.76	1.00	1.00	0.81	1.00	0.98	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	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	1.00	0.85	1.00	1.00	0.85	1.00	0.98	1.00	1.00	0.99	1.00	0.99
Flt Protected	0.97	1.00	0.95	0.97	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95
Satd. Flow (prot)	1838	1229	1715	1758	1301	1805	3478	1805	3566	1805	3566	1805
Flt Permitted	0.97	1.00	0.95	0.97	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95
Satd. Flow (perm)	1838	1229	1715	1758	1301	1805	3478	1805	3566	1805	3566	1805
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)	31	15	92	42	13	74	91	355	57	101	771	46
RTOR Reduction (vph)	0	0	88	0	0	71	0	23	0	0	8	0
Lane Group Flow (vph)	0	46	4	27	28	3	91	389	0	101	809	0
Confl. Peds. (#/hr)			36			29			78			37
Turn Type	Split	Perm	Split	Perm	Prot	Prot	Prot	Prot	Prot	Prot	Prot	Prot
Protected Phases	7	7		3	3		5	2		1	6	
Permitted Phases			7			3						
Actuated Green, G (s)		1.9	1.9	1.9	1.9	1.9	1.9	16.5		2.4	17.0	
Effective Green, g (s)		1.9	1.9	1.9	1.9	1.9	1.9	16.5		2.4	17.0	
Actuated g/C Ratio		0.05	0.05	0.05	0.05	0.05	0.05	0.41		0.06	0.42	
Clearance Time (s)		4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		86	57	80	82	61	84	1410		106	1489	
v/s Ratio Prot		c0.03		0.02	c0.02		0.05	0.11		c0.06	c0.23	
v/s Ratio Perm			0.00			0.00						
v/c Ratio		0.53	0.08	0.34	0.34	0.06	1.08	0.28		0.95	0.54	
Uniform Delay, d1		19.0	18.6	18.8	18.8	18.5	19.4	8.1		19.1	8.9	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.3	0.6	2.5	2.5	0.4	122.7	0.1		71.9	0.4	
Delay (s)		25.2	19.1	21.3	21.3	18.9	142.1	8.2		91.0	9.3	
Level of Service		C	B	C	C	B	F	A		F	A	
Approach Delay (s)		21.2			19.9			32.4			18.3	
Approach LOS		C			B			C			B	
Intersection Summary												
HCM Average Control Delay		22.9										C
HCM Volume to Capacity ratio		0.48										
Actuated Cycle Length (s)		40.7							13.5			
Intersection Capacity Utilization		54.5%										A
Analysis Period (min)		15										

HCM Signalized Intersection Capacity Analysis
10: 13th St & Camino Del Mar

LT AM + P 4L
3/10/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Volume (vph)	23	0	46	49	2	18	100	438	16	42	827	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	1.00	0.95
Frpb, ped/bikes	1.00	0.97	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	0.99	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.91	1.00	1.00	0.96	1.00	0.99	1.00	1.00	0.99	1.00	0.99
Flt Protected	0.98	0.97	0.97	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95
Satd. Flow (prot)	1630	1708	1805	3588	1805	3588	1805	3593	1805	3593	1805	3593
Flt Permitted	0.86	0.74	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1425	1315	1805	3588	1805	3588	1805	3593	1805	3593	1805	3593
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)	24	0	48	52	2	19	105	461	17	44	871	23
RTOR Reduction (vph)	0	42	0	0	17	0	0	4	0	0	3	0
Lane Group Flow (vph)	0	30	0	0	56	0	105	474	0	44	891	0
Confl. Peds. (#/hr)		41		46	46		41		2			11
Turn Type	Perm	Perm	Perm	Prot	Prot	Prot	Prot	Prot	Prot	Prot	Prot	Prot
Protected Phases	4			8			5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		5.2			5.2		3.3	22.9		1.3	20.9	
Effective Green, g (s)		5.2			5.2		3.3	22.9		1.3	20.9	
Actuated g/C Ratio		0.12			0.12		0.08	0.53		0.03	0.49	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		173			159		139	1915		55	1750	
v/s Ratio Prot							c0.06	0.13		0.02	c0.25	
v/s Ratio Perm		0.02			c0.04							
v/c Ratio		0.17			0.35		0.76	0.25		0.80	0.51	
Uniform Delay, d1		16.9			17.3		19.4	5.4		20.7	7.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5			1.4		20.6	0.1		55.2	0.2	
Delay (s)		17.4			18.7		40.0	5.4		75.9	7.7	
Level of Service		B			B		D	A		E	A	
Approach Delay (s)		17.4			18.7			11.7			10.9	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM Average Control Delay		11.8										B
HCM Volume to Capacity ratio		0.51										
Actuated Cycle Length (s)		42.9							13.5			
Intersection Capacity Utilization		52.5%										A
Analysis Period (min)		15										

HCM Unsignalized Intersection Capacity Analysis
11: 12th St & Camino Del Mar

LT AM + P 4L
3/10/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations			↖			↖		↖	↖		↖	↖	
Volume (veh/h)	0	0	34	0	0	18	0	568	31	0	920	21	
Sign Control	Stop			Stop			Free			Free			
Grade	0%			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	
Hourly flow rate (vph)	0	0	36	0	0	19	0	598	33	0	968	22	
Pedestrians	4			46			43			43			
Lane Width (ft)	12.0			12.0			12.0			12.0			
Walking Speed (ft/s)	4.0			4.0			4.0			4.0			
Percent Blockage	0			4			4			4			
Right turn flare (veh)													
Median type	None			None			None			None			
Median storage (veh)				373			433						
Upstream signal (ft)													
pX, platoon unblocked	0.86	0.86	0.86	0.86	0.86	0.86							
vC, conflicting volume	1344	1614	545	1164	1592	342	995				631		
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	1076	1390	148	867	1365	342	670				631		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	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 %	100	100	95	100	100	97	100				100		
cM capacity (veh/h)	141	123	725	196	128	636	798				962		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2						
Volume Total	36	19	299	299	33	646	345						
Volume Left	0	0	0	0	0	0	0						
Volume Right	36	19	0	0	33	0	22						
cSH	725	636	1700	1700	1700	1700	1700						
Volume to Capacity	0.05	0.03	0.18	0.18	0.02	0.38	0.20						
Queue Length 95th (ft)	4	2	0	0	0	0	0						
Control Delay (s)	10.2	10.8	0.0	0.0	0.0	0.0	0.0						
Lane LOS	B	B											
Approach Delay (s)	10.2	10.8	0.0	0.0									
Approach LOS	B	B											
Intersection Summary													
Average Delay			0.3										
Intersection Capacity Utilization			44.5%		ICU Level of Service			A					
Analysis Period (min)			15										

HCM Signalized Intersection Capacity Analysis
12: 11th St & Camino Del Mar

LT AM + P 4L
3/10/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↖			↖			↖	↖		↖	↖	
Volume (vph)	39	2	33	52	3	19	66	512	32	45	859	29	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.5			4.5			4.5			4.5			
Lane Util. Factor	1.00			1.00			1.00			0.95			
Frpb, ped/bikes	0.98			0.99			1.00			1.00			
Flpb, ped/bikes	0.98			0.98			1.00			1.00			
Frt	0.94			0.97			1.00			0.99			
Fit Protected	0.97			0.97			0.95			1.00			
Satd. Flow (prot)	1674			1710			1805			3578			
Fit Permitted	0.79			0.74			0.95			1.00			
Satd. Flow (perm)	1363			1313			1805			3578			
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)	41	2	35	55	3	20	69	539	34	47	904	31	
RTOR Reduction (vph)	0	31	0	0	18	0	7	0	0	0	0	15	
Lane Group Flow (vph)	0	47	0	0	60	0	69	566	0	47	904	16	
Confl. Peds. (#/hr)	43		46	46		43	4						
Turn Type	Perm		Perm		Prot		Prot		Perm		Perm		
Protected Phases	4		8		5		2		1		6		
Permitted Phases	4		8		5		2		1		6		
Actuated Green, G (s)	5.2		5.2		2.1		22.8		1.3		22.0		
Effective Green, g (s)	5.2		5.2		2.1		22.8		1.3		22.0		
Actuated g/C Ratio	0.12		0.12		0.05		0.53		0.03		0.51		
Clearance Time (s)	4.5		4.5		4.5		4.5		4.5		4.5		
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0		
Lane Grp Cap (vph)	166		160		89		1906		55		1856		
v/s Ratio Prot					c0.04		0.16		0.03		c0.25		
v/s Ratio Perm	0.03		c0.05								0.01		
v/c Ratio	0.28		0.38		0.78		0.30		0.85		0.49		
Uniform Delay, d1	17.1		17.3		20.1		5.6		20.7		6.7		
Progression Factor	1.00		1.00		1.00		1.00		1.00		1.00		
Incremental Delay, d2	0.9		1.5		33.5		0.1		70.4		0.2		
Delay (s)	18.1		18.8		53.6		5.6		91.1		6.9		
Level of Service	B		B		D		A		F		A		
Approach Delay (s)	18.1		18.8		10.8						10.9		
Approach LOS	B		B		B						B		
Intersection Summary													
HCM Average Control Delay			11.5		HCM Level of Service			B					
HCM Volume to Capacity ratio			0.49										
Actuated Cycle Length (s)			42.8		Sum of lost time (s)			13.5					
Intersection Capacity Utilization			50.4%		ICU Level of Service			A					
Analysis Period (min)			15										

HCM Signalized Intersection Capacity Analysis
13: 9th St & Camino Del Mar

LT AM + P 4L
3/10/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	
Volume (vph)	47	1	48	29	2	18	55	566	22	38	873	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5		4.5		4.5		4.5	
Lane Util. Factor	1.00		1.00		1.00		0.95		1.00		0.95	
Frpb, ped/bikes	0.98		0.98		1.00		1.00		1.00		1.00	
Flpb, ped/bikes	0.99		0.98		1.00		1.00		1.00		1.00	
Frt	0.93		0.95		1.00		0.99		1.00		0.99	
Fit Protected	0.98		0.97		0.95		1.00		0.95		1.00	
Satd. Flow (prot)	1665		1697		1805		3590		1805		3586	
Fit Permitted	0.82		0.81		0.95		1.00		0.95		1.00	
Satd. Flow (perm)	1398		1407		1805		3590		1805		3586	
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)	49	1	51	31	2	19	58	596	23	40	919	36
RTOR Reduction (vph)	0	45	0	0	17	0	0	4	0	0	4	0
Lane Group Flow (vph)	0	56	0	0	35	0	58	615	0	40	951	0
Confl. Peds. (#/hr)	43		46		46		43		4		4	
Turn Type	Perm		Perm		Prot		Prot		Prot		Prot	
Protected Phases	4		8		5		2		1		6	
Permitted Phases	4		8		5		2		1		6	
Actuated Green, G (s)	4.5		4.5		2.2		19.0		2.0		18.8	
Effective Green, g (s)	4.5		4.5		2.2		19.0		2.0		18.8	
Actuated g/C Ratio	0.12		0.12		0.06		0.49		0.05		0.48	
Clearance Time (s)	4.5		4.5		4.5		4.5		4.5		4.5	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	161		162		102		1749		93		1729	
v/s Ratio Prot	c0.04		0.03		c0.03		0.17		0.02		c0.27	
v/s Ratio Perm	0.35		0.22		0.57		0.35		0.43		0.55	
v/c Ratio	15.9		15.7		17.9		6.2		17.9		7.1	
Uniform Delay, d1	1.00		1.00		1.00		1.00		1.00		1.00	
Progression Factor	1.3		0.7		7.1		0.1		3.2		0.4	
Incremental Delay, d2	17.2		16.3		25.0		6.3		21.1		7.5	
Delay (s)	B		B		C		A		C		A	
Level of Service	B		B		C		A		C		A	
Approach Delay (s)	17.2		16.3		7.9		8.0		8.0		8.0	
Approach LOS	B		B		A		A		A		A	
Intersection Summary												
HCM Average Control Delay	8.7		HCM Level of Service		A							
HCM Volume to Capacity ratio	0.52											
Actuated Cycle Length (s)	39.0		Sum of lost time (s)		13.5							
Intersection Capacity Utilization	52.0%		ICU Level of Service		A							
Analysis Period (min)	15											

HCM Signalized Intersection Capacity Analysis
9: 15th St & Camino Del Mar

LT PM + P 4L
3/10/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔		↔	↔	
Volume (vph)	84	20	110	63	27	94	147	799	63	71	474	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5		4.5		4.5		4.5	
Lane Util. Factor	1.00		1.00		0.95		0.95		1.00		0.95	
Frpb, ped/bikes	1.00		0.79		1.00		1.00		0.68		1.00	
Flpb, ped/bikes	1.00		1.00		1.00		1.00		1.00		1.00	
Frt	1.00		0.85		1.00		0.85		1.00		0.99	
Fit Protected	0.96		1.00		0.95		0.98		1.00		0.95	
Satd. Flow (prot)	1826		1269		1715		1768		1099		1805	
Fit Permitted	0.96		1.00		0.95		0.98		1.00		0.95	
Satd. Flow (perm)	1826		1269		1715		1768		1099		1805	
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)	88	21	116	66	28	99	155	841	66	75	499	94
RTOR Reduction (vph)	0	0	107	0	0	93	0	11	0	0	30	0
Lane Group Flow (vph)	0	109	9	46	48	6	155	896	0	75	563	0
Confl. Peds. (#/hr)	43		46		46		43		4		4	
Turn Type	Split		Perm		Split		Perm		Prot		Prot	
Protected Phases	7		7		3		3		5		2	
Permitted Phases	7		7		3		3		5		2	
Actuated Green, G (s)	3.4		3.4		2.7		2.7		4.8		18.7	
Effective Green, g (s)	3.4		3.4		2.7		2.7		4.8		18.7	
Actuated g/C Ratio	0.08		0.08		0.06		0.06		0.11		0.42	
Clearance Time (s)	4.5		4.5		4.5		4.5		4.5		4.5	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	138		96		103		106		66		193	
v/s Ratio Prot	c0.06		0.01		0.03		c0.03		c0.09		c0.25	
v/s Ratio Perm	0.79		0.09		0.45		0.45		0.80		0.61	
v/c Ratio	20.4		19.4		20.4		20.4		20.0		19.6	
Uniform Delay, d1	1.00		1.00		1.00		1.00		1.00		1.00	
Progression Factor	25.2		0.4		3.1		3.1		0.6		20.9	
Incremental Delay, d2	45.7		19.8		23.5		23.5		20.6		40.6	
Delay (s)	D		B		C		C		D		B	
Level of Service	D		B		C		C		D		B	
Approach Delay (s)	32.3		19.8		23.5		23.5		20.6		40.6	
Approach LOS	C		B		C		C		D		B	
Intersection Summary												
HCM Average Control Delay	18.6		HCM Level of Service		B							
HCM Volume to Capacity ratio	0.69											
Actuated Cycle Length (s)	45.0		Sum of lost time (s)		18.0							
Intersection Capacity Utilization	60.7%		ICU Level of Service		B							
Analysis Period (min)	15											

HCM Signalized Intersection Capacity Analysis
10: 13th St & Camino Del Mar

LT PM + P 4L
3/10/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	
Volume (vph)	27	2	92	72	5	27	149	962	32	50	543	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5		4.5		4.5		4.5	
Lane Util. Factor	1.00		1.00		1.00		0.95		1.00		0.95	
Frbp, ped/bikes	0.96		0.98		1.00		1.00		1.00		1.00	
Fipb, ped/bikes	0.99		0.98		1.00		1.00		1.00		1.00	
Frt	0.90		0.97		1.00		1.00		1.00		0.99	
Flt Protected	0.99		0.97		0.95		1.00		0.95		1.00	
Satd. Flow (prot)	1602		1704		1805		3592		1805		3563	
Flt Permitted	0.92		0.84		0.95		1.00		0.95		1.00	
Satd. Flow (perm)	1492		1489		1805		3592		1805		3563	
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)	28	2	97	76	5	28	157	1013	34	53	572	43
RTOR Reduction (vph)	0	84	0	0	24	0	0	3	0	0	9	0
Lane Group Flow (vph)	0	43	0	0	85	0	157	1044	0	53	606	0
Confl. Peds. (#/hr)	60		53	53	60	12						12
Turn Type	Perm		Perm		Prot		Prot		Prot		Prot	
Protected Phases	4		8		8		5		2		1	
Permitted Phases	4		8		8		5		2		1	
Actuated Green, G (s)	5.7		5.7		5.7		4.8		22.4		1.3	
Effective Green, g (s)	5.7		5.7		5.7		4.8		22.4		1.3	
Actuated g/C Ratio	0.13		0.13		0.11		0.11		0.52		0.03	
Clearance Time (s)	4.5		4.5		4.5		4.5		4.5		4.5	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	198		198		202		1876		55		1570	
v/s Ratio Prot					c0.09		c0.29		0.03		0.17	
v/s Ratio Perm	0.03		c0.06									
v/c Ratio	0.22		0.43		0.78		0.56		0.96		0.39	
Uniform Delay, d1	16.6		17.1		18.5		6.9		20.8		8.1	
Progression Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Incremental Delay, d2	0.6		1.5		17.0		0.4		107.4		0.2	
Delay (s)	17.2		18.6		35.5		7.3		128.1		8.2	
Level of Service	B		B		D		A		F		A	
Approach Delay (s)	17.2		18.6		10.9				17.8			
Approach LOS	B		B		B		B		B		B	
Intersection Summary												
HCM Average Control Delay	13.9		HCM Level of Service		B							
HCM Volume to Capacity ratio	0.59											
Actuated Cycle Length (s)	42.9		Sum of lost time (s)		13.5							
Intersection Capacity Utilization	55.9%		ICU Level of Service		B							
Analysis Period (min)	15											

5:00 pm Baseline

Synchro 7 - Report
Page 1

HCM Unsignalized Intersection Capacity Analysis
11: 12th St & Camino Del Mar

LT PM + P 4L
3/10/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↔			↔	↔	↔		↔	↔	
Volume (veh/h)	0	0	48	0	0	27	1	1079	38	0	752	19
Sign Control	Stop		Stop		Free		Free		Free		Free	
Grade	0%		0%		0%		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
Hourly flow rate (vph)	0	0	51	0	0	28	1	1136	40	0	792	20
Pedestrians	13		44		57		44		57		57	
Lane Width (ft)	12.0		12.0		12.0		12.0		12.0		12.0	
Walking Speed (ft/s)	4.0		4.0		4.0		4.0		4.0		4.0	
Percent Blockage	1		4		5		4		5		5	
Right turn flare (veh)												
Median type	None		None		None		None		None		None	
Median storage (veh)												
Upstream signal (ft)			373		433							
pX, platoon unblocked	0.82	0.82	0.96	0.82	0.82	0.80	0.96		0.80			
vC, conflicting volume	1470	1992	463	1628	1962	625	825		1176			
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	934	1568	363	1126	1532	46	739		731			
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	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 %	100	100	91	100	100	96	100		100			
cM capacity (veh/h)	166	91	587	116	96	781	834		709			
Direction, Lane #												
Volume Total	51	28	380	757	40	528	284					
Volume Left	0	0	1	0	0	0	0					
Volume Right	51	28	0	0	40	0	20					
cSH	587	781	834	1700	1700	1700	1700					
Volume to Capacity	0.09	0.04	0.00	0.45	0.02	0.31	0.17					
Queue Length 95th (ft)	7	3	0	0	0	0	0					
Control Delay (s)	11.7	9.8	0.0	0.0	0.0	0.0	0.0					
Lane LOS	B	A	A									
Approach Delay (s)	11.7	9.8	0.0			0.0						
Approach LOS	B	A										
Intersection Summary												
Average Delay	0.4											
Intersection Capacity Utilization	48.8%		ICU Level of Service		A							
Analysis Period (min)	15											

5:00 pm Baseline

Synchro 7 - Report
Page 1

HCM Signalized Intersection Capacity Analysis
12: 11th St & Camino Del Mar

LT PM + P 4L
3/10/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↖	↗		↖	↗	↖
Volume (vph)	38	2	45	68	3	26	83	1041	39	78	705	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5		4.5		4.5
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes		0.98			0.98		1.00	1.00		1.00	1.00	0.96
Fipb, ped/bikes		0.98			0.98		1.00	1.00		1.00	1.00	1.00
Frt		0.93			0.96		1.00	0.99		1.00	1.00	0.85
Fit Protected		0.98			0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1654			1705		1805	3590		1805	3610	1555
Fit Permitted		0.86			0.73		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1448			1296		1805	3590		1805	3610	1555
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)	40	2	47	72	3	27	87	1096	41	82	742	24
RTOR Reduction (vph)	0	41	0	0	24	0	0	4	0	0	0	12
Lane Group Flow (vph)	0	48	0	0	78	0	87	1133	0	82	742	12
Confl. Peds. (#/hr)	57		44	44		57	13					13
Turn Type	Perm			Perm		Prot			Prot		Perm	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								6
Actuated Green, G (s)		5.5			5.5		2.1	21.6		2.1	21.6	21.6
Effective Green, g (s)		5.5			5.5		2.1	21.6		2.1	21.6	21.6
Actuated g/C Ratio		0.13			0.13		0.05	0.51		0.05	0.51	0.51
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		187			167		89	1816		89	1826	787
v/s Ratio Prot							c0.05	c0.32		0.05	0.21	
v/s Ratio Perm		0.03			c0.06							0.01
v/c Ratio		0.26			0.47		0.98	0.62		0.92	0.41	0.02
Uniform Delay, d1		16.8			17.2		20.3	7.6		20.2	6.6	5.3
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.7			2.1		87.1	0.7		69.6	0.1	0.0
Delay (s)		17.5			19.3		107.4	8.3		89.8	6.7	5.3
Level of Service		B			B		F	A		F	A	A
Approach Delay (s)		17.5			19.3			15.3			14.7	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM Average Control Delay			15.4			HCM Level of Service						B
HCM Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			42.7			Sum of lost time (s)				13.5		
Intersection Capacity Utilization			58.4%			ICU Level of Service						B
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis
13: 9th St & Camino Del Mar

LT PM + P 4L
3/10/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↖	↗		↖	↗	↖
Volume (vph)	27	0	42	37	4	23	45	1120	41	45	793	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5		4.5		4.5
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frbp, ped/bikes		0.97			0.98		1.00	1.00		1.00	1.00	1.00
Fipb, ped/bikes		0.98			0.98		1.00	1.00		1.00	1.00	1.00
Frt		0.92			0.95		1.00	0.99		1.00	1.00	1.00
Fit Protected		0.98			0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1635			1689		1805	3591		1805	3599	
Fit Permitted		0.84			0.78		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1406			1356		1805	3591		1805	3599	
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)	28	0	44	39	4	24	47	1179	43	47	835	14
RTOR Reduction (vph)	0	39	0	0	21	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	33	0	0	46	0	47	1219	0	47	848	0
Confl. Peds. (#/hr)	57		44	44		57	13					13
Turn Type	Perm			Perm		Prot			Prot		Perm	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								6
Actuated Green, G (s)		4.7			4.7		2.3	22.1		2.3	22.1	22.1
Effective Green, g (s)		4.7			4.7		2.3	22.1		2.3	22.1	22.1
Actuated g/C Ratio		0.11			0.11		0.05	0.52		0.05	0.52	0.52
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		155			150		97	1863		97	1867	
v/s Ratio Prot							c0.03	c0.34		0.03	0.24	
v/s Ratio Perm		0.02			c0.03							
v/c Ratio		0.21			0.30		0.48	0.65		0.48	0.45	
Uniform Delay, d1		17.3			17.4		19.6	7.5		19.6	6.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.7			1.2		3.8	0.8		3.8	0.2	
Delay (s)		17.9			18.6		23.4	8.3		23.4	6.6	
Level of Service		B			B		C	A		C	A	
Approach Delay (s)		17.9			18.6			8.9			7.5	
Approach LOS		B			B			A			A	
Intersection Summary												
HCM Average Control Delay			8.9			HCM Level of Service						A
HCM Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			42.6			Sum of lost time (s)				13.5		
Intersection Capacity Utilization			57.3%			ICU Level of Service						B
Analysis Period (min)			15									

APPENDIX L

**PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS
LONG TERM CONDITIONS WITH PROJECT TWO LANE COLLECTOR WITH
ROUNDBOUT**

MOVEMENT SUMMARY

Site: **LT AM With Project**

Camino Del Mar & 15th St
LT AM With Project
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: S Camino Del Mar											
3L	L	91	1.0	0.471	8.7	LOS A	2.6	67.1	0.40	0.81	19.4
8T	T	355	2.0	0.471	8.7	LOS A	2.6	67.1	0.40	0.44	21.1
8R	R	57	1.0	0.471	8.7	LOS A	2.6	67.1	0.40	0.45	20.3
Approach		502	1.7	0.471	8.7	LOS A	2.6	67.1	0.40	0.50	20.7
East: E 15th St											
1L	L	42	1.0	0.185	7.3	LOS A	0.7	16.9	0.51	0.82	17.1
6T	T	13	1.0	0.185	7.3	LOS A	0.7	16.9	0.51	0.48	17.6
6R	R	74	1.0	0.185	7.3	LOS A	0.7	16.9	0.51	0.63	18.2
Approach		128	1.0	0.185	7.3	LOS A	0.7	16.9	0.51	0.68	17.8
North: N Camino Del Mar											
7L	L	101	1.0	0.817	19.8	LOS C	11.2	283.0	0.80	0.79	19.8
4T	T	771	2.0	0.817	19.8	LOS C	11.2	283.0	0.80	0.66	20.5
4R	R	46	1.0	0.817	19.8	LOS C	11.2	283.0	0.80	0.70	20.4
Approach		918	1.8	0.817	19.8	LOS C	11.2	283.0	0.80	0.68	20.4
West: W 15th St											
5L	L	31	1.0	0.302	12.9	LOS B	1.1	27.9	0.68	0.95	16.5
2T	T	15	1.0	0.302	12.9	LOS B	1.1	27.9	0.68	0.71	16.2
2R	R	92	1.0	0.302	12.9	LOS B	1.1	27.9	0.68	0.79	16.3
Approach		137	1.0	0.302	12.9	LOS B	1.1	27.9	0.68	0.81	16.3
All Vehicles		1685	1.7	0.817	15.0	LOS B	11.2	283.0	0.65	0.64	19.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Model used. Geometric Delay not included.

Processed: Saturday, March 10, 2012 5:06:35 PM

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SIDRA INTERSECTION 5.1.10.2069

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Project: R:\KOA11\B14133 Del Mar ON Call\Analysis\Sidra\5.1108 LT + P 2CR\15th St HCM 2010.sip

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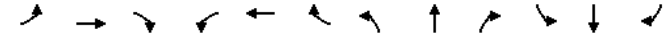


HCM Unsignalized Intersection Capacity Analysis

LT AM + Proj

11: 12th St & Camino Del Mar

3/10/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑		↑	↑		↓	↓
Volume (veh/h)	0	0	34	0	0	18	0	568	31	0	920	21
Sign Control	Stop			Stop			Free			Free		
Grade	0%			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
Hourly flow rate (vph)	0	0	36	0	0	19	0	598	33	0	968	22
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	1596	1610	979	1613	1588	598	991			631		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1596	1610	979	1613	1588	598	991			631		
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 %	100	100	88	100	100	96	100			100		
cM capacity (veh/h)	84	106	306	75	109	506	706			962		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	36	19	598	33	991
Volume Left	0	0	0	0	0
Volume Right	36	19	0	33	22
cSH	306	506	1700	1700	1700
Volume to Capacity	0.12	0.04	0.35	0.02	0.58
Queue Length 95th (ft)	10	3	0	0	0
Control Delay (s)	18.3	12.4	0.0	0.0	0.0
Lane LOS	C	B			
Approach Delay (s)	18.3	12.4	0.0	0.0	
Approach LOS	C	B			

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		

MOVEMENT SUMMARY

Site: LT AM With Project

Camino Del Mar & 13th St
LT AM With Project
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: S Camino Del Mar											
3L	L	105	1.0	0.474	7.9	LOS A	2.8	71.9	0.27	0.81	19.6
8T	T	461	2.0	0.474	7.9	LOS A	2.8	71.9	0.27	0.26	20.9
8R	R	17	1.0	0.474	7.9	LOS A	2.8	71.9	0.27	0.36	20.5
Approach		583	1.8	0.474	7.9	LOS A	2.8	71.9	0.27	0.36	20.6
East: E 15th St											
1L	L	52	1.0	0.116	7.1	LOS A	0.4	10.0	0.53	0.80	17.1
6T	T	2	1.0	0.116	7.1	LOS A	0.4	10.0	0.53	0.52	17.5
6R	R	19	1.0	0.116	7.1	LOS A	0.4	10.0	0.53	0.61	17.6
Approach		73	1.0	0.116	7.1	LOS A	0.4	10.0	0.53	0.75	17.2
North: N Camino Del Mar											
7L	L	44	1.0	0.848	22.4	LOS C	13.5	342.9	0.90	0.84	16.3
4T	T	871	2.0	0.848	22.4	LOS C	13.5	342.9	0.90	0.76	16.7
4R	R	23	1.0	0.848	22.4	LOS C	13.5	342.9	0.90	0.77	16.5
Approach		938	1.9	0.848	22.4	LOS C	13.5	342.9	0.90	0.76	16.7
West: W 15th St											
5L	L	24	1.0	0.171	11.0	LOS B	0.6	14.3	0.66	0.89	16.3
2T	T	1	1.0	0.171	11.0	LOS B	0.6	14.3	0.66	0.66	16.6
2R	R	48	1.0	0.171	11.0	LOS B	0.6	14.3	0.66	0.74	16.7
Approach		74	1.0	0.171	11.0	LOS B	0.6	14.3	0.66	0.79	16.6
All Vehicles		1667	1.8	0.848	16.2	LOS C	13.5	342.9	0.65	0.62	17.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Model used. Geometric Delay not included.

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SIDRA INTERSECTION 5.1.10.2069

Project: R:\KOA\11\B14133 Del Mar ON Call\Analysis\Sidra\5.1108 LT + P 2CR\13th St HCM 2010.sip
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MOVEMENT SUMMARY

Site: LT AM With Project

Camino Del Mar & 11th St
LT AM With Project
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: S Camino Del Mar											
3L	L	69	1.0	0.539	9.2	LOS A	3.5	90.0	0.34	0.83	19.3
8T	T	539	2.0	0.539	9.2	LOS A	3.5	90.0	0.34	0.31	20.5
8R	R	34	1.0	0.539	9.2	LOS A	3.5	90.0	0.34	0.40	20.1
Approach		642	1.8	0.539	9.2	LOS A	3.5	90.0	0.34	0.37	20.3
East: E 15th St											
1L	L	55	1.0	0.132	7.7	LOS A	0.5	11.4	0.55	0.83	17.0
6T	T	3	1.0	0.132	7.7	LOS A	0.5	11.4	0.55	0.55	17.4
6R	R	20	1.0	0.132	7.7	LOS A	0.5	11.4	0.55	0.65	17.4
Approach		78	1.0	0.132	7.7	LOS A	0.5	11.4	0.55	0.77	17.1
North: N Camino Del Mar											
7L	L	47	1.0	0.844	21.3	LOS C	12.9	326.5	0.84	0.75	16.5
4T	T	904	2.0	0.844	21.3	LOS C	12.9	326.5	0.84	0.62	17.0
4R	R	31	1.0	0.844	21.3	LOS C	12.9	326.5	0.84	0.64	16.8
Approach		982	1.9	0.844	21.3	LOS C	12.9	326.5	0.84	0.62	16.9
West: W 15th St											
5L	L	41	1.0	0.191	11.7	LOS B	0.6	15.9	0.68	0.89	16.2
2T	T	2	1.0	0.191	11.7	LOS B	0.6	15.9	0.68	0.68	16.3
2R	R	36	1.0	0.191	11.7	LOS B	0.6	15.9	0.68	0.75	16.5
Approach		79	1.0	0.191	11.7	LOS B	0.6	15.9	0.68	0.82	16.3
All Vehicles		1781	1.8	0.844	15.9	LOS C	12.9	326.5	0.64	0.55	18.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Model used. Geometric Delay not included.

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MOVEMENT SUMMARY

Site: LT AM With Project

Camino Del Mar & 9th St
LT AM With Project
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: S Camino Del Mar											
3L	L	58	1.0	0.565	9.7	LOS A	3.9	99.3	0.36	0.84	21.3
8T	T	596	2.0	0.565	9.7	LOS A	3.9	99.3	0.36	0.37	22.8
8R	R	23	1.0	0.565	9.7	LOS A	3.9	99.3	0.36	0.49	22.5
Approach		677	1.9	0.565	9.7	LOS A	3.9	99.3	0.36	0.42	22.6
East: E 15th St											
1L	L	31	1.0	0.092	7.6	LOS A	0.3	7.7	0.56	0.85	17.3
6T	T	2	1.0	0.092	7.6	LOS A	0.3	7.7	0.56	0.56	17.4
6R	R	19	1.0	0.092	7.6	LOS A	0.3	7.7	0.56	0.65	17.5
Approach		52	1.0	0.092	7.6	LOS A	0.3	7.7	0.56	0.77	17.3
North: N Camino Del Mar											
7L	L	40	1.0	0.803	17.5	LOS C	10.3	260.5	0.65	0.72	17.3
4T	T	919	2.0	0.803	17.5	LOS C	10.3	260.5	0.65	0.46	18.2
4R	R	36	1.0	0.803	17.5	LOS C	10.3	260.5	0.65	0.48	17.7
Approach		995	1.9	0.803	17.5	LOS C	10.3	260.5	0.65	0.47	18.1
West: W 15th St											
5L	L	49	1.0	0.241	12.5	LOS B	0.8	20.5	0.69	0.89	16.0
2T	T	1	1.0	0.241	12.5	LOS B	0.8	20.5	0.69	0.69	16.2
2R	R	51	1.0	0.241	12.5	LOS B	0.8	20.5	0.69	0.77	16.6
Approach		101	1.0	0.241	12.5	LOS B	0.8	20.5	0.69	0.83	16.3
All Vehicles		1824	1.8	0.803	14.0	LOS B	10.3	260.5	0.54	0.48	19.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Model used. Geometric Delay not included.

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MOVEMENT SUMMARY

Site: LT PM With Project

Camino Del Mar & 15th St
LT PM With Project
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: S Camino Del Mar											
3L	L	155	1.0	0.986	43.9	LOS E	34.9	884.0	1.00	1.29	12.7
8T	T	841	2.0	0.986	43.9	LOS E	34.9	884.0	1.00	1.29	13.4
8R	R	66	1.0	0.986	43.9	LOS E	34.9	884.0	1.00	1.29	12.6
Approach		1062	1.8	0.986	43.9	LOS E	34.9	884.0	1.00	1.29	13.3
East: E 15th St											
1L	L	66	1.0	0.515	21.6	LOS C	2.2	56.3	0.80	1.08	14.4
6T	T	28	1.0	0.515	21.6	LOS C	2.2	56.3	0.80	0.95	14.4
6R	R	102	1.0	0.515	21.6	LOS C	2.2	56.3	0.80	1.01	15.2
Approach		197	1.0	0.515	21.6	LOS C	2.2	56.3	0.80	1.02	14.8
North: N Camino Del Mar											
7L	L	75	1.0	0.708	16.0	LOS C	6.5	164.6	0.71	0.94	20.9
4T	T	499	2.0	0.708	16.0	LOS C	6.5	164.6	0.71	0.77	21.9
4R	R	94	1.0	0.708	16.0	LOS C	6.5	164.6	0.71	0.82	21.8
Approach		667	1.7	0.708	16.0	LOS C	6.5	164.6	0.71	0.80	21.8
West: W 15th St											
5L	L	88	1.0	0.381	11.7	LOS B	1.6	40.8	0.64	0.94	16.7
2T	T	21	1.0	0.381	11.7	LOS B	1.6	40.8	0.64	0.68	16.4
2R	R	116	1.0	0.381	11.7	LOS B	1.6	40.8	0.64	0.76	16.5
Approach		225	1.0	0.381	11.7	LOS B	1.6	40.8	0.64	0.83	16.6
All Vehicles		2152	1.6	0.986	29.8	LOS D	34.9	884.0	0.85	1.06	15.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Model used. Geometric Delay not included.

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MOVEMENT SUMMARY

Site: **LT PM With Project**

Camino Del Mar & 13th St
LT PM With Project
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: S Camino Del Mar											
3L	L	157	1.0	0.902	25.8	LOS D	18.3	464.2	0.98	0.56	15.6
8T	T	956	2.0	0.902	25.8	LOS D	18.3	464.2	0.98	0.54	15.9
8R	R	33	1.0	0.902	25.8	LOS D	18.3	464.2	0.98	0.54	15.8
Approach		1145	1.8	0.902	25.8	LOS D	18.3	464.2	0.98	0.54	15.8
East: E 15th St											
1L	L	76	1.0	0.303	15.8	LOS C	1.1	26.8	0.75	0.95	15.3
6T	T	5	1.0	0.303	15.8	LOS C	1.1	26.8	0.75	0.80	15.4
6R	R	28	1.0	0.303	15.8	LOS C	1.1	26.8	0.75	0.85	15.6
Approach		109	1.0	0.303	15.8	LOS C	1.1	26.8	0.75	0.92	15.4
North: N Camino Del Mar											
7L	L	53	1.0	0.665	14.2	LOS B	5.5	138.6	0.66	0.94	18.1
4T	T	539	2.0	0.665	14.2	LOS B	5.5	138.6	0.66	0.66	18.8
4R	R	43	1.0	0.665	14.2	LOS B	5.5	138.6	0.66	0.71	18.6
Approach		635	1.8	0.665	14.2	LOS B	5.5	138.6	0.66	0.69	18.7
West: W 15th St											
5L	L	28	1.0	0.220	9.1	LOS A	0.8	19.9	0.59	0.88	16.8
2T	T	2	0.0	0.220	9.1	LOS A	0.8	19.9	0.59	0.59	17.1
2R	R	97	1.0	0.220	9.1	LOS A	0.8	19.9	0.59	0.68	17.2
Approach		127	1.0	0.220	9.1	LOS A	0.8	19.9	0.59	0.72	17.1
All Vehicles		2017	1.7	0.902	20.6	LOS C	18.3	464.2	0.84	0.62	16.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Model used. Geometric Delay not included.

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UNLICENSED TRIAL VERSION



HCM Unsignalized Intersection Capacity Analysis

LT PM + P 2CR

11: 12th St & Camino Del Mar



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑		↑	↑		↓	↓
Volume (veh/h)	0	0	48	0	0	27	1	1079	38	0	752	19
Sign Control	Stop			Stop			Free			Free		
Grade	0%			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
Hourly flow rate (vph)	0	0	51	0	0	28	1	1136	40	0	792	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	1968	1979	802	1990	1949	1136	812			1176		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1968	1979	802	1990	1949	1136	812			1176		
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 %	100	100	87	100	100	89	100			100		
cM capacity (veh/h)	42	62	387	40	65	248	824			601		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	51	28	1137	40	812
Volume Left	0	0	1	0	0
Volume Right	51	28	0	40	20
cSH	387	248	824	1700	1700
Volume to Capacity	0.13	0.11	0.00	0.02	0.48
Queue Length 95th (ft)	11	10	0	0	0
Control Delay (s)	15.7	21.4	0.0	0.0	0.0
Lane LOS	C	C	A		
Approach Delay (s)	15.7	21.4	0.0	0.0	
Approach LOS	C	C			

Intersection Summary	
Average Delay	0.7
Intersection Capacity Utilization	66.8% ICU Level of Service C
Analysis Period (min)	15

MOVEMENT SUMMARY

Site: LT PM With Project

Camino Del Mar & 11th St
LT PM With Project
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: S Camino Del Mar											
3L	L	87	1.0	1.026	51.7	LOS F	56.6	1415.0	1.00	1.20	11.8
8T	T	1096	2.0	1.026	51.7	LOS F	56.6	1415.0	1.00	1.20	11.9
8R	R	41	1.0	1.026	51.7	LOS F	56.6	1415.0	1.00	1.20	11.7
Approach		1224	1.9	1.026	51.7	LOS F	56.6	1415.0	1.00	1.20	11.8
East: E 15th St											
1L	L	72	1.0	0.298	16.4	LOS C	1.0	25.7	0.77	0.95	15.2
6T	T	3	1.0	0.298	16.4	LOS C	1.0	25.7	0.77	0.81	15.3
6R	R	27	1.0	0.298	16.4	LOS C	1.0	25.7	0.77	0.86	15.5
Approach		102	1.0	0.298	16.4	LOS C	1.0	25.7	0.77	0.92	15.3
North: N Camino Del Mar											
7L	L	82	1.0	0.723	14.2	LOS B	6.9	171.6	0.63	0.82	18.1
4T	T	742	2.0	0.723	14.2	LOS B	6.9	171.6	0.63	0.52	18.8
4R	R	24	1.0	0.723	14.2	LOS B	6.9	171.6	0.63	0.57	18.6
Approach		848	1.9	0.723	14.2	LOS B	6.9	171.6	0.63	0.55	18.7
West: W 15th St											
5L	L	40	1.0	0.194	10.6	LOS B	0.7	16.4	0.64	0.88	16.4
2T	T	2	1.0	0.194	10.6	LOS B	0.7	16.4	0.64	0.64	16.6
2R	R	47	1.0	0.194	10.6	LOS B	0.7	16.4	0.64	0.72	16.8
Approach		89	1.0	0.194	10.6	LOS B	0.7	16.4	0.64	0.79	16.6
All Vehicles		2264	1.8	1.026	34.5	LOS D	56.6	1415.0	0.84	0.93	14.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Model used. Geometric Delay not included.

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MOVEMENT SUMMARY

Site: LT PM With Project

Camino Del Mar & 9th St
LT PM With Project
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: S Camino Del Mar											
3L	L	47	1.0	0.979	38.1	LOS E	41.1	1044.4	1.00	0.57	14.6
8T	T	1179	2.0	0.979	38.1	LOS E	41.1	1044.4	1.00	0.57	14.8
8R	R	43	1.0	0.979	38.1	LOS E	41.1	1044.4	1.00	0.57	14.6
Approach		1269	1.9	0.979	38.1	LOS E	41.1	1044.4	1.00	0.57	14.8
East: E 15th St											
1L	L	39	1.0	0.209	15.2	LOS C	0.7	16.7	0.76	0.92	15.7
6T	T	4	1.0	0.209	15.2	LOS C	0.7	16.7	0.76	0.76	15.6
6R	R	24	1.0	0.209	15.2	LOS C	0.7	16.7	0.76	0.81	15.7
Approach		67	1.0	0.209	15.2	LOS C	0.7	16.7	0.76	0.87	15.7
North: N Camino Del Mar											
7L	L	47	1.0	0.731	14.1	LOS B	7.4	187.8	0.52	0.78	18.0
4T	T	835	2.0	0.731	14.1	LOS B	7.4	187.8	0.52	0.41	19.1
4R	R	14	1.0	0.731	14.1	LOS B	7.4	187.8	0.52	0.45	18.6
Approach		896	1.9	0.731	14.1	LOS B	7.4	187.8	0.52	0.43	19.1
West: W 15th St											
5L	L	28	1.0	0.164	10.4	LOS B	0.5	13.7	0.64	0.88	16.5
2T	T	1	1.0	0.164	10.4	LOS B	0.5	13.7	0.64	0.64	16.7
2R	R	44	1.0	0.164	10.4	LOS B	0.5	13.7	0.64	0.74	17.1
Approach		74	1.0	0.164	10.4	LOS B	0.5	13.7	0.64	0.79	16.8
All Vehicles		2306	1.9	0.979	27.2	LOS D	41.1	1044.4	0.80	0.53	16.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Model used. Geometric Delay not included.

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APPENDIX M

DIVERSION



January 26, 2011

JN 55-100629.001

Mrs. Kathy Garcia
CITY OF DEL MAR
1050 Camino del Mar
Del Mar, CA 92014

**Subject: Multimodal Assessment of Camino del Mar
Evaluation Criteria**

Dear Kathy:

The Village Specific Plan is considering several roadway design alternatives that will address traffic flow, pedestrian access, and parking. The transportation alternatives evaluated provide potential benefits to the community including opportunities to provide wider sidewalks, shorten pedestrian crossing distances and increase parking.

When considering transportation solutions, many times there is a heavy focus on volume of traffic that can be carried by a facility. For example, a four-lane road with traffic signals should be able to carry 30,000 vehicles per day. However, traffic flow and capacity is only one measure that should be considered when designing the corridor. Based on recent changes in CEQA and the Complete Streets Act, many other factors should influence the selection of a preferred alternative including bicycle and pedestrian access, emergency service access, speed, air quality, noise and land use compatibility.

Evaluation Criteria

For the Specific Plan, evaluation criteria will be established to address all modes of transportation as well as other factors such as parking and land use compatibility. Through the process the project team is developing a set of metrics that will demonstrate the benefits and challenges of each alternative by mode. The following is a brief description of each evaluation category.

Bicycles

Bicycle lanes or routes can be provided within the 100 foot right-of-way along Camino del Mar. The critical factor for bicycles is speed and visibility. Vehicles backing up or doors of cars opening into the bicycle lane pose the greatest challenges for bicyclists along the corridor.

Pedestrians:

Reducing the exposure time of the pedestrian to vehicular traffic and speed of traffic are the two critical factors to pedestrian safety. The two lane alternative would provide for shorter crossing distances for pedestrians, reducing the pedestrian-vehicle exposure by at least half.

Traffic signals would provide for a protected pedestrian phase at the intersection, where the roundabouts would not provide the same break in traffic. On the other hand, roundabouts provide for shorter crossing distances, away from the intersection improving the overall visibility of pedestrians crossing the travel way.

Emergency Vehicle Access

Emergency response time is dependent upon the emergency vehicle's ability to navigate through traffic. With the existing raised median, the emergency vehicles are less likely to cross the center of the road into on-coming traffic during congested conditions. Therefore, adequate space should be provided for vehicles to yield to emergency vehicles.

Both the four lane and two lane alternatives would provide sufficient space for vehicles to pull over to allow emergency vehicles to pass. The four lane alternative would allow vehicles to pull into the right lane to allow vehicles to pass. The two lane alternative would require vehicles to pull into the bicycle lane or parking buffer to pass.

The traffic control device selection will have a greater impact on emergency vehicle access. Traffic signals can be equipped with radar detection that will allow the signals to change to green when an emergency vehicle is approaching. This will help clear queues at signalized intersections. This type of emergency vehicle priority cannot be provided at stop signs or roundabouts. Roundabouts maintain a constant flow of traffic. Therefore, queues would not typically form at the intersections and emergency vehicles would navigate the roundabout free of vehicle obstructions in the event of an emergency. The roundabouts are large enough for vehicles to pull over within the roundabout and the lack of queue will allow the vehicles to move aside as the emergency vehicle approaches.

Speed

Speed along the corridor will be a function of the volume on the segment and the design of the segment. During peak period, congestion with the stop signs will control the speed along the corridor. With the installation of traffic signals, the speed of traffic will depend upon the timing of the signals. Roundabouts would maintain a constant speed through and between the roundabouts. Traffic speeds with roundabouts are less influenced by peak and non-peak traffic flows as the speed is primarily a factor of the design of the roundabout.

Air Quality/Noise

Stopping and starting are contributors to both air quality/green house gas emissions and noise impacts along Camino del Mar. Removal of the stop signs will reduce the overall number of

stops and starts, which may have a beneficial impact on air quality. Signals would result in a portion of the vehicles traveling along the corridor to stop and start, but the air quality/noise impact would be less than an all-way stop where all vehicles must stop. A roundabout does not typically require vehicles to stop, but encourages a constant flow of traffic at a slower speed. Studies have shown that vehicles idling in a queue emit seven times as much Carbon Monoxide (CO) than a vehicle traveling at 10 mph. By reducing idle time, air emissions are reduced. Therefore, roundabouts further reduce air quality impacts when compared to a traffic signal or an all-way stop. The degree of air pollutants reduced depends upon the level of congestions at the intersection. Studies conducted and presented at the Transportation Research Board suggest that during the congested peak periods CO emissions could be reduced by as much as 20 to 40%, Oxides of Nitrogen by as much as 20 to 48% and HydroCarbons by as much as 18 to 65% when an all-way stop was replaced by a roundabout.

Land Use Compatibility

On-street parking, wider sidewalks, slower speeds and increased development density along Camino del Mar are elements under consideration in the Specific Plan. The roadway alternative should be compatible with these directions. Higher speeds and higher traffic volumes are not desirable in a walkable environment, therefore measures should be taken to keep speeds at a compatible 25 mph. This may require the capacity and design of the road to be established lower than the forecasted daily traffic volume.

If this occurs, it is feasible that the overflow volume (volume that exceeds the capacity) may choose to not travel down Camino del Mar. Based on the forecast volumes for the corridor, approximately 10 to 15% of the total forecast 2030 volume is "pass-through" traffic. This implies that the vehicles are not coming from or destined for Del Mar. By setting the capacity less than forecast daily traffic volume, there is the potential for diversion from Camino del Mar onto other regional routes to bypass Del Mar.

Transportation Alternatives

The Village Specific Plan is considering three roadway alternatives within the available 100 feet of right-of-way:

- Four-lane Collector with Stop Signs (maximum capacity of 15,500 vpd)
- Four-lane Collector with Signals (maximum capacity of 30,000)
- Two-lane Collector with Roundabouts (capacity range of 22,000 to 26,000 vpd)

A preliminary review alternatives was prepared relative to the evaluation criteria listed previously, and summarized in the table.

Closing

As you are aware, KOA is preparing the detailed traffic operational analysis that will include the evaluation of traffic flow, capacity and intersection operating conditions. The traffic analysis will look at existing and future traffic volumes and assess the potential impacts of the Village Specific Plan. The multimodal assessment should be integrated into the traffic analysis and included as part of the overall assessment of impacts and mitigation measures.

If you have any questions regarding the information provided, please call me at (760) 603-6246.

Sincerely,



Dawn L. Wilson, PE, TE, PTOE
Traffic Engineer

Travel Speeds and Diversion

Due to the level of congestion during the peak period, vehicles currently bypass Camino del Mar by taking alternate routes through Del Mar. With increased traffic flow, it is possible that additional diversion may occur if modifications to the corridor do not occur to improve the capacity of Camino del Mar.

City staff and the traffic consultant conducted a travel time survey in January 2012 to determine the travel time savings by diverting from Camino del Mar. Three bypass routes were surveyed and the results are provided below:

- Crest Drive (from Del Mar Heights Road to 15th Street)
- Stratford Court (from Del Mar Heights Road to 15th Street)
- Luneta Drive (Camino del Mar to 11th Street then Luneta to 15th Street)

Table 1 provides a comparison of travel times along study routes. As shown in Table 1, travel between Del Mar Heights Road and 15th Street ranged from 5 minutes, 14 seconds to 6 minutes 17 seconds depending upon the route. All travel time runs were conducted in the northbound direction during the same peak period (p.m. peak between 4:30 and 6:00 p.m.) Travel time runs were averaged from three separate weekday runs to confirm the results.

**Table 1
Comparison of Travel Times**

	<i>Starting Location</i>	<i>Main Route of Travel</i>	<i>Ending Location</i>	<i>Travel Time (minutes: seconds)</i>	<i>Estimated Distance and Unencumbered travel time (in minutes)</i>
Route 1 Camino del Mar	Del Mar Heights Road & Crest Dr.	Northbound Camino del Mar	Camino del Mar at Del Mar Plaza	05:14	1.2 m 3 min
Route 2 Crest Drive	Del Mar Heights Road & Crest Dr.	Northbound Crest Drive (turn from Del Mar Heights Rd.)	Camino del Mar at Del Mar Plaza	06:15	1.5 m 5 min
Route 3 Stratford Court	Del Mar Heights Road & Crest Dr.	Northbound Stratford Court (turn from 4 th Street)	Camino del Mar at Del Mar Plaza	06:17	1.4 m 6 min
Route 4 Luneta Drive (as bypass to Camino del Mar)	Del Mar Heights Road & Crest Dr.	Northbound Camino del Mar to 11 th Street, turn north to Luneta Drive	Camino del Mar at Del Mar Plaza	05:29	1.4 m 4 min

Based on the results of the travel time survey, the travel time benefits along the alternative routes are marginal. The longest travel time occurs along the Crest Drive routes. This time was calculated by an experienced driver, familiar with the Del Mar community who could navigate the route along Crest Drive. Less experienced drivers may experience longer travel times if they were to get lost along the route. As shown in Table 1, although the traffic along Camino del Mar was stop and go during the peak period, the travel time was shorter than all other routes. As the travel time along Camino del Mar increases and approaches the travel time along Crest or Stratford, the potential for diversion increases.

KOA Calculation (02/28/2012)								
Camino Del Mar Delay								
Location	Existing		Future No Build		Future Signals		Future Roundabout	
	AM	PM	AM	PM	AM	PM	AM	PM
15th	13.4	15.8	16.5	17.4	23	18.4	14.5	24.4
13th	15.1	15.7	37.8	383.2	11.8	14	--	--
12th	--	--	--	--	--	--	--	--
11th	13.1	16.9	29.3	446.5	11.6	15.2	15.4	29.3
9th	7.3	7.1	8.7	8.8	8.7	8.8	13.7	22.74
Total	48.9	55.5	92.3	855.9	55.1	56.4	43.6	76.44
Minutes Increase			0.72	13.34	0.10	0.01	-0.09	0.35

Location	Control			
15th	signal	signal	signal	roundabout
13th	all-way stop	all-way stop	signal	side street stop
12th	side street stop	side street stop	side street stop	side street stop
11th	all-way stop	all-way stop	signal	roundabout
9th	signal	signal	signal	roundabout